

## ABSTRACTS

*(Ordered by first and last author's name)*

## **First person volitives directives in Canaanite in a typological perspective**

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The proposed analyses and reconstructions of the Canaanite ‘volitive’ and Hebrew ‘(co)hortative’ are compared with cross-linguistically common sources of 1st person intentional/volitional forms. The comparison furnishes the assessment of the different arguments, deriving the forms from the nun-suffixed construction (ancestor of the Arabic *energicus*) and the subjunctive *yaqtula* as discrete sources, on the one hand, and as part of one continuum on the other. Rather than focusing on the phonetic reconstruction, the presentation brings to focus the syntactic and semantico-pragmatic aspects of the (potential) source and target constructions. The deictic, assertory/veridical and syntactic complementation values of the respective proposed reconstructions are considered as potential sources of the target value evolving through co-optation and/or constructionalisation..

## **Heritage interpretation and the management of heritage resources in Jordan: the primacy of the physical object in the interpretive process**

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Heritage management and interpretation are primarily responsible for protecting and valorizing cultural and natural heritage resources, and consequently have direct role in maintaining and disseminating site-based values. The main aim of heritage interpretation and archaeological site management is to make available heritage experience based on the integrity of tangible and intangible heritage resources within the site. This study is an analysis of the process of heritage management and interpretation in the Jordanian context, and is based on the argument that the current practice of heritage management and interpretation is favoring the physical and tangible heritage excluding intangible heritage. The study is based on fieldwork including site visits as well as observations focusing on the interpretive material being used at heritage sites and relevant documents and studies; thus, the collected data is the object of classification and deep analysis.

The findings of this study demonstrates that current heritage management and interpretation practice are focusing on the tangible physical heritage while sites associated with intangible heritage are heavily devaluated. Intangible heritage resources are underestimated and marginalized. The tangible heritage is the main object of heritage management and interpretation and the basis for historic narration and the driver of heritage tourism. Furthermore, it is found that current heritage management enhances the rupture between tangible and intangible heritage. Consequently, locals and internationals often have limited prior knowledge of the different intangible heritage resources.

**Key words:** heritage, management, interpretation, tangible and intangible heritage, Jordan

**Abdelraheem Ahmad - Non-destructive ultrasonic technique for the investigation of archaeological stone objects and structures**

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Ultrasonic technique is an innovative method of investigation that is increasingly applied for the study and investigation of archaeological stone objects and structures, mainly because of its non-destructive nature. This study explores the principles and measuring techniques of ultrasonic testing and its applications in the field of cultural heritage. The capabilities and research potential of this technique in the field of cultural heritage are examined and displayed by presenting several practical examples on its use. The results validate the use of ultrasonic technique as an effective tool for characterizing archaeological stone materials, assessing their condition and evaluating the effectiveness of conservation treatments.

## **The Application of Non-Invasive Archaeological Methods at Jerash**

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Jerash is an archaeological site with a long history. Starting in the Hellenistic period, the site prospered in the Roman, Late Roman, Byzantine and Early Islamic periods. Also Middle Islamic remains are available from Jerash, and since the late 19th century the Circassian settlement became the foundation of modern Jerash. All these periods left important monuments as witnesses to the past and all periods deserve protection and interpretation. Although parts of the classical site are in a protected area, modern construction has threatened much of the cultural heritage of Jerash over the last years and is in urgent need of documentation and interpretation. Non-invasive methods of documentation and working with historical documents can help reconstructing the past, and over the last years the Danish-German Jerash Northwest quarter Project of the Universities of Aarhus (co-director Rubina Raja) and Münster (co-director Achim Lichtenberger) has implemented several non-invasive methods which help protect the cultural heritage, and stand in the focus of the talk.

## **The nature of the Tribal Formation in Ancient North Arabia**

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The corpus of Ancient North Arabian Inscriptions reveals to us that the authors of its texts were nomadic pastoralist people organized in tribal formations. More often than not, however, nomadic pastoralism and tribalism are confused together or used synonymously even among scholars. These concepts carry with them age-old stereotypes that frame nomads as autonomous, predatory, and primitive (representing the earliest stages of a nation's evolution). More alarmingly, these notions find their way into etymology, philology, and epigraphy, leading to many false interpretations. Given that a proper interpretation of a lexeme requires resorting to many interdependent fields of scholarship, there is much to be gained from adopting ethnography's methods and results on the subject in circumventing these problems.

This paper will give brief descriptions of the social structure of Ancient North Arabians, relying on kinship terms as well as terms indicative of the political order that prevailed amongst them. To complete the emerging picture gleaned from them, these descriptions will be supplemented with recent ethnographic models and analyses on the nature of tribalism and pastoral nomadism. Finally, it will suggest that we cannot conceive of the Ancient North Arabians as either predatory or primitive, nor can we think of them in a complete disjunction with milieu in which they lived.

## **Glance on the History of the Department of Antiquities of Jordan Through roots project.**

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In June 1923 the government of Transjordan took the decision to establish the Department of Antiquities to be one of the first governmental departments in Transjordan. The aim was to protect and preserve the archaeological remains in Jordan. Since that time, many major things changed—the British mandate, the Independence day declaration in 1946, uniting with the west bank in 1950 (thus then the responsibility of the Department of Antiquities), the loss of the west bank in 1967, and more recently the technological revolution. In these almost 95 years, many archaeological field projects, research, and important discoveries have taken place in Jordan, resulting in tens of thousands of hard copies of reports and documents. In this presentation, I will discuss the Roots project which started in 2015 in order to sort, digitize, and preserve these documents to make them available to the researchers.

## Management of Dam Sediments: As Assessment for Agricultural Use

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King Talal and Mujib dams are significant water supplies for Jordan, but have lost substantial storage capacity as a consequence of sediment infilling. This study evaluates the potential for using bottom sediments from both dams as additives for low quality soils. Soil samples collected from Irhab area (Mafraq Governorate) have been mixed with reservoir sediments at different ratios (15 or 30% sediments (w/w)) to investigate the effect of sediments addition on soil fertility. Mixing Irhab soil with sediments from both dams improved its physical characteristics and increased its organic matter content (up to 4.95%), water holding capacity (50.5%) and CEC values (17.3 c mol kg<sup>-1</sup>). Results showed that sediment addition to Irhab soil enhanced plants growth and yield compared to controls. High rates of sediments supplementation (30%), particularly those sediments obtained from areas closer to dam's wall, showed more positive effect. Application of dam sediments to crop resulted in variable response compared with organic or inorganic fertilizers. Wheat plants grown in soil supplemented with bottom sediments or inorganic fertilizers showed similar yield response. Growing Chrysanthemum plants in soil supplemented with 30% bottom sediment resulted in the maximum plant growth and yield compared to control or plants received organic or inorganic fertilizers. Metal content indicated no significant effect of adding sediments to growing soil (on all tested plants) except for Spinach, which showed higher accumulation levels of Fe, Mo, Cu, Cd and Pb when grown on soil supplemented with 30% dam sediments. Comet assay analysis showed no DNA damage in all plants grown either in control soil or in soil supplemented with different dam sediments, indicating the absence of genotoxic agents in the collected sediments. These results present evidence for the potential of using KTD and Mujib dams' sediments for soil supplementation for different crops other than leaf vegetables in areas with low soil fertility.



## **Archaeometric study of Abbasid Pottery Excavated from Um Qais (Gadara)**

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This study aims for investigating and determining raw materials, manufacturing technology, and provenance of a collection of Abbasid pottery sherds excavated from Um Qais, Northern Jordan. The samples were classified into three groups according to form, function. Color, paste, and decorations. Chemical compositions of the paste of the samples were analyzed using inductively coupled plasma-optical emission spectroscopy (ICP-OES). Mineralogical content and texture of the pastes was investigated using polarized light microscope (thin sections) and X-ray diffraction (XRD) techniques. In addition to XRD results, a refiring test combined with the investigation of microstructures that results from refiring using scanning electron microscope (SEM) was carried out to determine the initial firing temperatures of the studied sherds.

The results obtained from this study indicated that the studied pottery sherds were manufactured from calcareous clay. The Abbasid potter in Um Qais treated this clay according to manufactured shape in order to fulfill its function. X-ray diffractographs showed the formation of gehlenite and diopside minerals, and the SEM micrographs showed that the microstructure (vitrification) of the original samples is extensive vitrification; thus, the potter had initially fired the pots in temperature range between 750 – 1100 °C in an oxidizing atmosphere. The raw materials that were used in the manufacture of the pastes exist in Um Qais and its surrounding. This is a strong indication that the studied samples were locally made.

# Evaluating the Impact of Digital Heritage on Society: The Case of Umm Al-Jimal

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Since the late 1990s, the digitalization of heritage have been attracting the attention of both academics and practitioners. Digital heritage representations are not mere substitutes or pathways to physical sites. They offer new opportunities for engagement and interaction. They enable different forms of archives and displays based on personalized experiences specified to the users and directed toward particular aims.

This “digital turn” is still very limited in Jordan although identified by UNESCO as a rich country for heritage buildings and sites. Umm Al-Jimal, an ancient site dating back to the mid first century AD and located North of Jordan, is on its tentative list as a world heritage site (<https://whc.unesco.org/en/tentativelists/6335/>).

The research aims to study the impact of heritage digitalization on society with a particular focus on Umm Al-Jimal. The interest in digital heritage representation is less on how we represent and preserve objects and more on how this creates and recreates different ways of interaction where knowledge can be produced and shared differently. In other words, such representations are not only considered in terms of relating to the breadth and reach of users, but also to the quality of the experience.

The research is based on inductive, qualitative methodology with the aim of exploring the effect of digital representation on society. Utilizing the case of Umm Al-Jimal as a vehicle of such understanding, the research is based on interviews and focus groups with academics, practitioners, stakeholders and most importantly the public. The results will formulate the basis for raising awareness of implementing digital documentation in historical sites. It will also initiate the process of utilising BIM for the documentation of Jordanian heritage.

**Key Words:** Digital, heritage representation, Umm Al-Jimal.

## **Emergence of iambs in Eastern Arabic: Metrical iambicity dominates optimal nonfinality**

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This paper presents a relatively novel metrical and constraint-based analysis for stress patterns in Bedouin Arabic as spoken by Zalabiah and Zawaideh subtribes in southern Jordan. Different from Eastern Arabic variety, the dialect under investigation exhibits stress patterns which are basically controlled by an iambic foot. In terms of metrical parameters, final foot extrametricality is proposed where it does not violate non-exhaustivity and peripherality; extrasyllabicity is also proposed for the analysis of a final consonant in a superheavy syllable. Extrametricality is better analysed, in constraint-based terms, via the constraint NONFINALITY. Examining the domain hierarchy in Optimality Theory, the argumentation then explores how the metrical parameter ‘iambicity’ struggles with the optimal constraint ‘nonfinality’ as well as with other constraints to generate the more harmonic stress patterns. In terms of dominance hierarchy, the constraints IAMB and WEIGHT-BY-POSITION are ranked higher than the constraints NONFINALITY and \*FINAL-C- $\mu$ , supporting that stress patterns in the dialect of Zalabiah and Zawaideh are mainly controlled by the iambic foot. Contrary to previous literature, this work provides evidence that not all Eastern Arabic dialects necessarily fit into trochaic foot-type.

## **Identification of ancient Greek sculptors/workshops by digital technologies and recent interdisciplinary research**

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In order to arrive at a better understanding of ancient sculpture, it would be essential to determine whether all its pieces were carved by the same workshop(s) or master(s). Reliable ancient documentary evidence on this is quite rare, and the masterhand attribution method, universally used for paintings, was applied only sporadically to sculptural works. After scanning (with Artec EVA and Spider) many pieces of archaic and classical Greek marble sculpture, an attempt is made to use these data for the identification of common traits and idiosyncrasies in the treatment of frequently recurring details, e.g. drapery, facial features or locks of hair. Two different datasets (recorded with the same equipment) were selected for analysis: the sculptural decoration of the temple of Zeus at Olympia and that of Asclepius at Epidauros. They represent different stages of artistic development (from the 5th and 4th centuries BC respectively), are relatively well-preserved and suitable for analysis mainly because each group constitutes a relatively large sample within which comparisons can be made. In addition, for the second set, there is some documentary evidence (contemporary inscriptions) regarding the identity of the masters and the division of labour among them.

The comparison of sculptural details is based on the methodology of geometric morphometrics used e.g. in paleontology for detecting and quantifying similarities and differences in skeletal remains, thus, enabling a detailed reconstruction of biological evolution. The same statistical analysis has been applied to comparable features extracted from 3D models of ancient sculpture. Some preliminary results of these comparisons will be presented with a discussion of possible interpretations

## **The situation of cultural heritage in Yemen: providing livelihoods opportunities for youth**

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As the escalating humanitarian crisis enters its fourth year, widespread conflict, severe economic decline, food insecurity, collapse of essential public services and threat to Yemen unique cultural heritage continue to take an enormous toll on the population, exacerbating existing vulnerabilities. Yemen has unfortunately become the ‘world’s largest humanitarian crisis’ with 80% (22.2 million) of population in need of humanitarian assistance. In this dramatic humanitarian emergency context, it is hard to prioritize the conservation of cultural heritage, yet its protection is of utmost importance .

UNESCO was mobilized at beginning of the crisis in Yemen to remind the parties in conflict of their responsibilities as signatories of the 1954 Convention, and worked with UN colleagues to make sure that a comprehensive no-strike list is respected. Despite initial severe damages to several archaeological sites, monuments and historic building a decrease in air led destructions of historic sites was noted. Nevertheless, the threat to heritage persists depending on on-the-ground conflict situation, while terrorist attacks to religious buildings are still a reality. In this complex context, UN presence on the ground is limited to humanitarian assistance to population and rehabilitation of basic infrastructures and services given the insecure environment in Yemen.

UNESCO works has therefore been implemented from the outside the country through partners on the ground. Targeted capacity building of local cultural actors to face the circumstances, damage assessment and monitoring, awareness raising and technical advice are being continuously provided with good results. Nevertheless, it was not enough to respond to these needs, in particular the rehabilitation of damaged or destroyed historical housing stock, noting that owners lost their shelter and become displaced. In Yemen every village or dwelling is—at least the extended core—of historic value. Local building knowledge and traditional materials have been used through centuries to produce unique architectural expressions of high cultural significance. It also was noticed that due to a weakened control and monitoring system, the risk of reconstruction by owners using modern materials was real. Therefore, it was important to maintain and transmit competencies to younger generation, target most damaged historic housing (privileging WH sites), provide shelter to whom it was lost and make sure this is done following criteria respecting the historic value of the property. At the same time, there is a need to grow the number of competent professionals (usta’) to be used in reconstruction during the recovery phase. It is also to take into consideration that 31.5% of Yemeni youth is unemployed and 1 in 4 Yemenis lost purchasing power for food and other essential

goods and services. We wanted to contribute to the livelihood of youth while creating employment, and this found a perfect match with the need to grow the number of skilled craftsmen and restore/reconstruct damaged historic housing.

## **Investigations on Archaeological Heritage in the Reservoir Area of the Ilisu Dam and Their Presentations in Regional Museums**

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The Upper Tigris region has been archaeologically a terra incognita until the past few decades. The span of the Mesopotamian cultures includes regions bearing local components. The Ilisu Dam is being constructed on the Upper Tigris valley creating a reservoir of 313 km<sup>2</sup> where significant archaeological heritage is concentrated. The archaeological fill remaining under the reservoir will dissolve as soon as it comes into contact with water, and the architecture will be deformed by water pressure and flow.

Surveys brought out ca. 300 sites and in ca. 40 sites, salvage excavations have been conducted contributing to the understanding of the early history of the contact zone of Anatolian and Mesopotamian cultures. Unfortunately, the archaeological sites bear occasionally deep archaeological deposits, so the time for excavation is always too short. On the other hand, small sites that generally would not have been preferred for scientific projects were otherwise introduced to the archaeological data. The Ilisu Dam provides a valuable contribution to the cultural history of this region. The results are being published in preliminary and final reports since the beginning of the project.

Archaeological findings are presented to the public through three museums established in regional provinces. The sites, cultures and findings are explained on information boards accompanied by models, animations and video demonstrations. Moreover, artificial excavation areas and model devices that can be operated by visitors facilitate the creating a sense of cultural heritage.

## **Marketing tourism destinations online: Dana Park – Jordan as an example**

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Offered here is a study of the operations related to tourist reservations. The paper will also examine the current efforts of online marketing carried out by the tourist operators using the websites of the Dana Park in Tafleh Governorate. The study data will be based on statistics available on the website and information on tourism activities. The latest trends in the use of the Internet as an effective marketing tool for the site will be highlighted



## **Morphological Repetition Provoking Phonological Repetition in Arabic Folk Songs**

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Folk songs are the keystone of sociocultural identity and the store of many aspects encompassing our names, habits, social behaviour, beliefs, jokes, stories, etc. The importance of studying folk songs lies in a variety of aspects. They form an intriguing part of a larger frame called Cognitive Cultural Model (Kristiansen 2008: 64). Based on 'Social Identity Theory' (*cf.* Tajfel 1969, 1981 in Kristiansen 2008: 64), folk songs successfully participate in an inevitable positive natural categorization of language so that they constitute part of the stereotype of such lectal and social categorization. They are a register of socially constructed language and thus, they perform a crucial piece of evidence in support of the continuous linguistic change of dialects (*cf.* Watts 2010). In terms of language shift, folk songs are among aspects of language that are the last bastion of survival in a dominated language (Mesthrie 2001: 495). Folk songs are the best reserve that keeps forms of spoken languages, and records the most important features of the sociocultural life in a simple, spontaneous and far from affected manner.

The main concern of this work is the spontaneous linguistic repetition to be performed in the creative production of Jordanian folk songs within their phonological and morphological contexts. For this purpose, the work traced cases of morphological repetitions demonstrated in folk songs including suffixes, roots, and patterns, and examined morphological-phonological interaction to produce repetition represented via rhyme. To attain the goals of the study, multiple examples are retrieved from twenty Jordanian folk songs. The selected lines are transcribed and translated. A statistical analysis is conducted to obtain a frequency distribution to calculate the percentage of suffixes repetition on the rhyming lines. The study proves that folk poetry depends heavily on Arabic morphology, suffixation in particular, to illuminate its rhetorical, prosodic, and emphatic effects. It is also found that rhyming in folk poetry is not haphazardly produced by the articulation of repeated sounds; instead, it is structured by means of morphological repetitions, in particular, suffix and pattern repetitions.

## **Language and Tourism**

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Language barriers are, as everyone knows, an important obstacle transcultural communication. Tourists are strongly aware of this difficulty, which has important effects on their choice of prospective destinations, their preparations for a trip, the scope and content of their interaction with the locals, and the quality of their experience. However, despite the obvious importance of language in tourism, the problem has been given surprisingly little attention in both the sociological and the sociolinguistic literature. Though sociolinguists are obviously aware of the temporal nature of the processes of second or foreign language acquisition, and of language spread, the temporal status of the foreigner learning the host language (HL) has not been given theoretical significance in their studies. There are numerous sociolinguistic studies of groups who come to a society from outside without knowing the local language or the rules and its use. Studies have focused on immigrants, guest workers, colonials, and residents of locales With two or more co-territorial ethnolinguistic groups

## **From Mines to Hillforts: Cultural Heritage of the Chalcolithic/Early Bronze Age period in the deserts of NE-Jordan**

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The Northern Badia is a region, which hitherto has generally been underestimated in terms of its contribution to the archaeology of SW Asia. However, archaeological fieldwork activities of the last 10 years revealed abundant evidence for human activities dating into late prehistoric periods (Late Neolithic to Early Bronze Age). Within this period the Late Chalcolithic / Early Bronze Age I period (late 5<sup>th</sup>/4<sup>th</sup> Millennium BCE) was a crucial phase, in which the human activities in this region were not only characterised by a high degree of creativity and innovative approaches to tackle climatic and social challenges, but also by supra-regional contacts, which archaeological evidence range from large scaled open cast flint mines with associated export oriented tool blank production, via hillfort sites to earliest evidence for large scaled complex irrigation agriculture. The lecture will present these developments and discuss the significance of these developments for the cultural heritage of SW Asia, especially regarding its innovative and supra-regional character.

## **Ancient agricultural landscapes in Jordan: a neglected heritage**

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Common modern narratives see Jordan's landscapes as degraded with many deserted cities, encroaching desertification, and greatly diminished fertility since antiquity. Attributions of "guilt of soil erosion" change according to the cultural backgrounds of the writers, with some blaming the Muslim conquest, others the Romans, and others the Ottomans. However, recent research has made increasingly clear that the man-made desertification narrative is largely a fiction and partly a hegemonic discourse connected with colonial mandate and the establishment of modern statehood. Many soils of the northern plateaus are in fact very stable, and suited to reconstruct patterns of ancient land use as a result of material culture and the geochemical residues of manuring accumulating through the centuries. This allows partly to reconstruct ancient field systems, and to better understand their purposes. In this context, it turned out that ruins of land use structures in the steppe of Umm el-Jimal that had been interpreted as remains of ancient irrigated agriculture were in fact mainly used for pastoralism, which means that parts of northeastern Jordan represent a fossil pastoral landscape. In the south of Jordan, the trained eye can observe a multitude of terrace remains around Petra, and there was in fact probably not one slope that was not terraced at some time during antiquity. The decay of these sophisticated systems was probably related to climate variations. They are still largely ignored as cultural heritage of Jordan, and increasingly destroyed by modern development. The presentation will briefly show examples from Abila, Umm el-Jimal, and Petra and suggest how they could be suited to inform interested visitors about ancient land use practise, climate variations, and past landscape changes in Jordan.

# **TRADITIONAL COPPER WORK FROM SANTA CLARA DEL COBRE, MEXICO: A CASE STUDY ON TECHNOLOGICAL CHANGE AND PERSISTENCE**

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In ancient Mesoamerica, copper was not only the predominant metal, but also the most widely used base material. By around 1450 A.D., the Tarascan empire had become the most important prehispanic metallurgical center in Mesoamerica, with copper being the most commonly used metal to manufacture a variety of sumptuary objects, which were used as symbols of social and political elite status, as well as in religious ceremonies and other rituals. Some utilitarian implements such as needles and hooks were also manufactured [1][2]. After the Spanish conquest, the main source of copper in New Spain was still located in the Province of Michoacán, so when the colonizers assumed control of the local copper industry in 1533, they recruited indigenous miners and smelters, who for decades carried on the metallurgical techniques that they knew well. Through the next 300 years of Spanish dominion, various minerals were mined in the Province. Copper was obtained mainly from mines in the Balsas River basin, which is still one of the most important areas of mineral deposits in Mexico [3][4]. This long tradition of manufacturing copper artifacts in Michoacán has survived down to today in the town of Santa Clara del Cobre, Michoacán, in the form of artisanal metalworking. The present work seeks to establish a socio-technological link between the method utilized by local artisans today for melting scrap copper, and archaeological evidence for copper smelting located near Santa Clara del Cobre. By examining the role of technological persistence and change, the study explores the different modes in which technology, as a cultural variable, intermingled with past societies.

[1] Pollard, Helen P., *The Political Economy of Prehispanic Tarascan Metallurgy*. *American Antiquity*, 52 (4), 741-752, 1987.

[2] Hosler, Dorothy, *The Sounds and Colors of Power*, MIT Press, Cambridge, 1994.[3] Barrett, Elinore M., *The Mexican Colonial Copper Industry*. Albuquerque: University of New Mexico Press, 1987.

[4] Maldonado, B., *Preindustrial Copper Production at the Archaeological Zone of Itziparátzico, a Tarascan Location in Michoacán, México*. Ph.D. Dissertation, Department of Anthropology. University Park: The Pennsylvania State University, 2006.

## **From Archaeology to Cultural Heritage: one hundred years of British activity in Jordan and Palestine**

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In the centenary of the founding of the British School of Archaeology in Jerusalem—the precursor of the Council for British Research in the Levant (CBRL)—this paper will provide an overview of one hundred years of British engagement with the archaeology of Jordan and Palestine.

Focusing particularly on projects and activities that have been developed since the foundation of the British Institute at Amman for Archaeology and History (now CBRL's British Institute in Amman), we will address the question of changing British and Jordanian perspectives vis-a-vis archaeological research, especially tackling the gradual shift away from traditional excavation and toward more holistic approaches to cultural heritage, involving a combination of science, community involvement and sustainable development.

## **Shaping the present through heritage development in Jordan**

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The latest temporary exhibition 'Then & Now' of the Jordan Museum in the center of Amman revolves around the use of heritage as a resource for the future. At the center of the exhibition is an interactive map of the country, showing all the resources of the future: next to 'mines and minerals' and 'wind power potential'; 'artefacts' turn up. As a resource-poor country, the extreme wealth in archaeological sites is considered a possible alternative source of revenue for the country. Officials of the Department of Antiquities (DoA) place the number of known archaeological sites at 11,000 but estimate that there are more than 20,000, of which many are still hidden. Just two years ago, an untouched tomb of the Roman era, complete with frescoes and inscriptions, was discovered during construction works. It was quickly included in the heritage development project of USAID.

The idea of using heritage as a resource is mirrored in the statement that "heritage is Jordan's oil", uttered by tourist guides and development actors alike. Since the 1990's heritage has come to play a crucial role in the plans of the Jordanian government and the multitude of donor agencies and NGO's to develop tourism in Jordan. Certain sites containing material remnants of the past have thus come at the center of development schemes.

Research on heritage has shown its contentious nature and how heritage is continuously remade in order to keep up with the present and its political projects (Silverman, 2011; Mitchell 2001 El Haj, 2008). Research on tourism has shown how places are made into commodities, ready for consumption (Urry, 1995; Daher, 2006). Literature on development, on the other hand has shown how development projects are often anchored in past practices, forming a dispositif that both informs and situates projects (Murray Li, 2007). As is clear from this literature and the stories I encountered in the field, the making of these sites deserves further attention, as this process is very much at the center of future-building projects.

In my research, I aim to understand how heritage is used in the shaping of the present, by looking specifically at the converging of development projects oriented towards 'better futures' and heritage sites as places tied to the past. In my presentation, I will depart from a single site in Madaba, to trace the legacies of development and science politics as well as the market networks and power relations in which this site is situated.

## **Intangible Cultural Heritage. A Challenge to Aesthetic and Cultural Education**

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The practices of intangible cultural heritage are central to the cultural heritage of humanity, which comprises practices from a plethora of different cultures. These practices play an important role in the cultural identity of human beings. The 'intangible cultural heritage' means the practices, representation, expressions, knowledge skills – as well as the instruments objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. These practices are manifested in the following domains: (a) oral traditions and expressions, including language as a vehicle of the intangible cultural heritage; (b) performing arts; (c) social practices, rituals and festive events; (d) knowledge and practices concerning nature and the universe; (e) traditional craftsmanship. In my presentation, I want to show you seven aspects highlighting the cultural and the aesthetic character and relevance of the practices of intangible cultural heritage of the 2003 UNESCO Convention. These aspects are: 1. human body as medium, 2. practices of communication and interaction, 3. mimetic learning and practical knowledge, 4. the performativity and aesthetics of cultural practices, 5. central structural and functional elements, 6. difference and otherness, 7. intercultural learning.



**Cultural Studies Potentials for Regional Development Sustainable Development  
for Heritage and Nature Protection. Concepts and practices of the "train the  
trainers" in Gadara / Umm Qays**

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Building researchers, experimental archaeologist and restorers/stonemasons by the German Archaeological Institute in Berlin and the Archaeological Institute of Hamburg University have started in 2011. In addition to Several activities in the area of cultural mediation for the local community as well as for the promotion of sustainable cultural and natural tourism, they developed an unprecedented imparting programme which connects nature conservation and monument protection in Gadara, present-day's Umm Qays. The major local target audience of the project are children and young adults. By learning about their region's history, they get sensitised for their own cultural and natural heritage. The project was realised in a very close cooperation with many local partners from Umm Qays. Due to the extremely positive experiences, in the years ahead, an education programme to impart knowledge about the rich cultural heritage of the entire region of Jordan and Syria will be developed from this very close collaboration with Jordanian partners. Moreover, it is necessary to look after the preservation of the considerable monument substance of the ancient Gadara and of hara foqa, the upper village of Umm Qays from the end of the 19th / beginning of the 20th century. For this purpose, a training programme for local craftsmen and young adults is being established, in which traditional stonemason's techniques are being taught by German experts. The aim is to cautiously build up a pool of knowledge and practical experience. The paper summarises activities in the field of communication and preservation of the rich cultural and natural heritage of the region. The idea is a sustainable development of heritage and nature protection. Strengthening the local intangible cultural heritage, for example stonemasonry, will finally prove beneficial to the tangible cultural heritage as well.

## **The Georgian National Museum at the Nexus of Culture, Science, and Exploration**

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The Georgian National Museum is the administrative umbrella organization for the major museums of Georgia and 4 research centers. The Georgian National Museum presents internationally significant collections of art and dynamic, changing exhibitions that provide visitors with inspiration and knowledge of world cultures, arts, sciences and education. The Georgian National Museum is a horizontal network of different bodies unified under joint values. The Georgian National Museum is an important regional example of how to transform post-Soviet museums into modern, innovative, creative and user-friendly institutions that are well integrated into the urban and social fabric.

# **The Ancient Near Eastern Legacy: About the Treatment of Cultural Heritage in the Past**

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The paper reviews archaeological and textual evidences which demonstrate how cultural heritage was treated in the Ancient Near East from the 3<sup>rd</sup> to the 1<sup>st</sup> millennium BC. It focuses on examples of the carrying off of cultural monuments, their preservation in museum like contexts, their meaningful destruction, the intentional search of ancient monuments and the different means to conserve cultural heritage. The aim is to show the high concern for cultural heritage in early ancient Near Eastern history in order to develop a basic understanding of the continuities and changes that the perception and treatment of cultural monuments underwent until recent times.

## **Institutionalisation of the Syrian Orthodox Heritage in Mardin**

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As institutions of modernity, museums were initially important instruments for nation building. In many countries, including Turkey, this notion continued to be the case for many years, while in others there was a shift from this approach to a more inclusive one. Displaying a religious and ethnic minority in a museum is a challenge. Recent developments in museum studies put great emphasis on multiculturalism while acknowledging the necessity of self-representation and participation. In this paper, I shall deal with how the Syrian Orthodox heritage finds its representation in Mardin, a city that has been promoted as the symbol of multiculturalism in Turkey. While Mardin's museums have taken steps forward by mentioning this community in the museum, the question of how minorities should be presented without creating an imposed image that does not do justice to the community and its heritage prevails. Not having a collection for the Syrian Orthodox community is a challenge for the museums in Mardin. The main representation of the community is through some of their contemporary religious objects. The architectural heritage of the community in the Tur Abdin, just to the east of Mardin, which has been described as the Mount Athos of the East because of the concentration of villages and monasteries, finds no representation in the museums although it usually appears together with a mosque as a representation of multiculturalism in calendars, posters or purposely-built backgrounds before which tourists take picture as a memory from the city. Syrian Orthodox community place great importance on their churches and monasteries and take all steps to restore them. These monuments are visited by the community in diaspora and the informed visitor. Although not labelled as an eco-museum, the Tur Abdin region seems to function as one. This paper shall analyse what institutionalisation of the heritage means for the community, for other parts of the inhabitants of Mardin and for tourists. It shall discuss if an eco-museum model could be implemented to protect and promote this heritage and what would be the benefits of it for the community, region and the country.

## **Conservation and management of Jordanian Touristic Sites: toward a more realistic approach**

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The conception of conserving and managing an archaeological site is usually challenging. These issues become more challenging when dealing with archaeological sites at the scale of world heritage site Petra, Jordan. The current study will discuss some of the main challenges and limitations in a typical conservation work. This discussion will extend to introducing a new approach in rapid condition assessment scheme. The proposed scheme is based on a realistic approach, far from the short assessment schemes, and at the same time is not too detailed one, which is difficult to carry out or even evaluated. Condition assessment is a central part of good management practice for stone whether the stone is part of a functioning building, a ruin or an ancient monument. Therefore the presented scheme will not only used for listing priority of conservation actions within huge heritage sites, but also it will create a comprehensive and scientific bank of data for better management and planning issues within heritage sites. The research outcome scheme is realistic, scientifically approved, time controlled and more importantly can be used by decision makers, professional conservators, managers and many other stakeholders.

## **The potential of oral history for cultural heritage preservation**

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Oral history focalizes on the way people perceive, interpret and invest in the past and places representing the past, which are important elements of information in the context of cultural heritage preservation. Oral traditions are strong in Jordan, but have so far been neglected as a source for documenting and analyzing the living history of various sites of memory around the country ranging from Nabataean sites to Ottoman and Mandate buildings.

Drawing from the experience of the pilot project on the oral history of the period of the First World War in Jordan launched in 2018, this presentation will outline some of the potential benefits of integrating oral history as an approach and methodology to cultural heritage preservation projects and measures. I will argue that knowing the oral history of various sites of memory will ultimately allow practitioners in the field of cultural heritage preservation to better engage local communities in the safeguarding of nearby heritage sites while documenting the relationship of these communities with the sites in a holistic manner.

## **Archaeological Glass Studies in Jordan, What are we looking for?**

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Most Classical Archaeological sites reveal glass as one of the major finds. In most excavations, this glass is broken fragments and in few cases, glass will be found as a complete artefact. Studies of archaeological glass differs between typological and chemical analyses, which presents the basic information about the technology, society and economy of its period. The artefacts from the classical archaeological sites in Jordan are no different; therefore, several studies were conducted for their finds and in particular for the glass finds. This study will present how many studies were done so far for archaeological glass, what information gained from these studies about the glass excavated from the Jordanian sites and most of all what to expect from the forthcoming archaeological glass studies in Jordan.

## **Bedouin Life Hacks from Southern Jordan**

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This paper presents examples of life hacks that the Bedouins of southern Jordan used in order to overcome the difficulties they used to face in their daily lives. The examples focus mainly on major issues such as food and beverage, health and medicine, and other life aspects.



## **The German Archaeological Heritage Network (ArcHerNet) and its Joint Project ‘A Future for the Time after the Crisis’**

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There is a growing interest to harness existing global expertise on Archaeological Cultural Heritage and to produce the synergies required to the present challenges. The paper consists of three parts: First, it introduces the German Archaeological Heritage Network (ArcHerNet) as an effective network of German Cultural Heritage institutions joining their expertise in cultural heritage activities worldwide, coordinated by the German Archaeological Institute (DAI).

Second, it presents the first joint project of ArcHerNet, ‘A Future for the Time after the Crisis’, a project focusing on capacity building, training, awareness raising, and providing digital data and inventories related to cultural heritage. This is in support of heritage preservation and future planning and reconstruction by the partner countries themselves. Thirdly, this presentation concludes with a case study at the intersection of the humanities and the sciences – an ongoing project of the DAI as part of the network project.

Thus, the presentation highlights the need for international networks, data management, and last but not least the coordination of efforts and a serious interest in the specific needs of the partners.

## **Documentary Heritage in Jordan**

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The paper outlines the UNESCO definition of a document “that which records something with a deliberate intellectual purpose. A document is considered to have two components: the international content and the support in which it is recorded. The paper also defines the documentary heritage as a fundamental inheritance of our culture and historical memory that must be transmitted to future generations in the best possible condition. The archives are centers responsible for dealing with, conserving and spreading the word about this heritage It highlights the institutions that work on documentary heritage like The Department of the National Library, The Centre for Documents and Manuscripts in the University of Jordan, The Royal Hashemite Documentation Center established by the Royal Hashemite Court ..etc. It reveals the efforts that done by these institutions in this regards as well as the legislation and mandates that Jordan does and the arrangements to protect the documentary heritage from risk. Finally, the paper concludes some challenges that faces the documentary heritage and the relevant institutions in Jordan.

## **Bedouin Water Management and Applied Archaeohydrology. Potentials of Sustainability at the Junction of Hydraulic Heritage and Water Engineering**

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The interplay of humanities and sciences in cultural heritage work is not just an issue of academic discourse and consultancy. For many cases, its dimensions cover the urgent need of real action to be taken: 1) for rescuing vanishing traditional knowledge and competency in the linked spheres of cultural and natural heritage, 2) for safeguarding the cognitive and social environments of the heritage bearers to further promote sustainability and balance between humans/ culture and build environment/ nature, and 3) for political advocacy in favour of heritage to defend its achievements against destruction by erroneous trends in modern development.

The case of traditional Bedouin water management in Jordan's desert represents all these dimensions while urging reaction and intervention of the humanities and sciences: Literally, we daily lose unrecorded knowledge and practical competency in traditional desert hydrology and hydraulics as older Bedouins pass away. Since the cognitive and socio-hydraulic environments of sustainable water harvesting in the desert vanish, a discipline should be devoted to it, and a pragmatic effort is needed to promote and offer re-installment of traditional water engineering in climate-sensitive arid landscapes. The contribution will elaborate on the need for and the fields of a new discipline related to such tasks: Applied Archaeohydrology. Related anthropological-ethnographical research would enable Applied Archaeology to translate the lessons of the past for us modern people using the desert by integrating records of traditional water management, archaeology, climatology, hydrology, geomorphology, geoarchaeology, and other disciplines. The contribution presents initial research in these fields from wadi systems in southeastern Jordan and near Sakakah, Saudi Arabia, concentrating on traditional pastoral well/trough/dam-based hydraulic technologies.

## **Building Techniques and Typology in the Levantine Architecture during the Persian Period**

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The practice of architecture is used to accomplish both functional and emotional requirements, and thus, it serves both technical and artistic ends. Even though these two aspects may be distinguished, they cannot be separated. During the Persian rule, the inhabitants of the Levant did not repudiate other technical methods known since older times, rather they maintained and employed their ancestors' techniques with or without changes. In other words, work has been adapted to the specific circumstances of each site. The techniques of architecture and materials of construction are influenced by identified needs, as appropriate, and subject to the economic conditions, climate, availability of materials and tools, the technological competence and skills of the labour force and the geographical location of the site and its significance and character. The construction techniques implemented in most of the Persian-period buildings bore Phoenician influences from earlier periods and did not originate in the Persian period. In addition to the Phoenician styles, many foreign architecture typology and techniques inspired by the Mesopotamian and Egyptian cultures have appeared in the Levantine architecture. This article aims at clarifying the following points:

1. The economic and cultural dimensions to be drawn from using specific material of construction and/or specific building technique and typology,
2. The nature of Phoenician influence in the southern Levant and
3. Whether monumental palaces in Persia inspired the Levantine architects.

## **Islamic pottery of Northern Jordan from a scientific perspective**

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Pottery is the mainstay of archaeological assemblage, second in the sheer number of finds in almost all sites pertaining to the last ten millennia and unsurpassed in its information potential. In the second half of the 20th century, pottery maintained its leading role when archaeometry (science-based instruments) was synchronized with the traditional archaeological methods.

Islamic pottery went through many changes during the different Islamic periods. This study tries to detect any kinds of improvement, decline or stability in Islamic assemblages in Northern Jordan. The utilization of the different scientific techniques (petrography, XRD, XRF) permitted tracking pottery production from the date of manufacturing to the usage stage and ultimate discarding.

The closer look of Archaeometry allowed identifying the most frequently utilized raw materials that were mostly used to produce the different Islamic pottery wares. Examining the types of raw materials allow locating the most popular sources of the clay materials. The study estimated technical aspects that reveal disparity in the durability of the Islamic pottery in the Early, Middle and Late Islamic periods. The different archaeometry techniques confirmed that the Early Islamic pottery was fired frequently at higher temperatures than the Middle and Late Islamic ones as most traditional archaeological studies pointed out. The constituents of the most studied samples reflected the local geology of Northern Jordan except for few shreds. The qualitative and the quantitative interpretation of the archaeometry results facilitated grouping the assemblages, which allowed comparing different groups with the local geology.

**Prospects for applications of thin films, ion beam sources, plasma, technologies and nano- materials in the restoration and preservation of archeological objects and artifacts**

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The study of archeological artifacts is a multidisciplinary enterprise with formidable aspects and questions regarding date, provenance, sources of raw materials, and the technology used for their creation. Metal artifacts from different cultures have attracted attention over the years because of the exquisite quality of the craftwork and the intriguing metallurgic processes developed and employed by their metal craftsmen. The metal smiths of the time knew how to plate copper with silver or gold, how to make some alloys and how to gild stones with gold foils.

Plasmas and ion sources and the resulting ions from inert gas can be easily produced and accelerated to controllable energies suitable to employ in the field of cleaning and preservation of archeological objects and perhaps in fine art. Micro and nanoscale thin films of oxides, nitrides, metallic and polymers should be applied to some artifacts' surfaces to protect them from corrosion and environmental hazards. Specifically designed nanomaterials can also be applied in the preservation and enhancement of archeological objects and artifacts.

Advanced deposition techniques, types and uses of ion beam sources in the cleaning of surfaces of objects and archaeological artifacts and deposition of ultra-thin films are described. Some optical characteristics of inorganic thin films will be presented as evidence on why and how they can be used. Among these transparent hard coatings used for these purposes are:  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{TiN}$ ,  $\text{SnN}$  and  $\text{SnO}_2$ .

## **At the crossroads of multiple disciplines. Theoretical and methodological reflections on Digital Ancient Near Eastern Epigraphy**

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Digital Epigraphy (DE) stands out in the domain of ITs applied to the study of Cultural Heritage because of the complex nature of the very epigraphic document, which is both immaterial and material. The study, valorization and digital preservation of an inscription benefit from the advances in the technologies that have been developed both for textual studies (philological, linguistic, etc.) and material culture studies (archaeology, history of art, etc.), besides historical and geographical studies in general. At the same time, *ad hoc* solutions are needed in order to make those technologies and methods interact and be efficiently applied to the epigraphic sources.

While a community of “digital epigraphers” has been growing in Classics studies—successfully exchanging ideas, methods and tools—the situation is much more fragmented in the field of Ancient Near Eastern (ANE) studies, mainly due to the intrinsic variety of linguistic and writing systems, and to chronological, geographic and cultural contexts. This situation is complicated by the often partial knowledge of specific histories, languages, scripts etc. Indeed these limitations pose intriguing challenges and solicit a stronger cooperation among researchers.

Starting from the experience of practicing DE, the paper intends to bring to attention some of the current theoretical and methodological issues in DE, to discuss their relevance in the frame of ANE studies and, conversely, to define how the specificities of the latter can contribute to widening debate in DE. Special attention will be devoted to the potentialities disclosed by the contextual analysis of the epigraphic texts in order to reach a deeper understanding of their significance while dealing with under-resourced languages, and to interoperability strategies to enhance cross-cultural research.

## **Nabataean Bronze Coins from Palestine**

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This study deals with 161 Nabataean bronze coins belonging to various sites throughout the West Bank and dating back to (9 B.C. - 106 A.D, the king Aretas IV to Rabbel II). In the period between 1994 and 2016, and through different raids, the tourism police of the Palestinian Authority have been successful in catching and arresting antiquity dealers in and around Bethlehem and Hebron, these efforts have resulted in discovering and confiscating collections of coins among them are the 161 Nabataean bronze coins in question. The coins have been later brought to the Department of Palestinian Antiquities and Cultural Heritage of the Palestinian Authority in Ramallah in 2016, documented, given serial national numbers (BL8421 – BL8566, HB6851 – HB6870), and placed in the Department stores.

None of this material was systematically excavated, rather it was illegally dug up from various sites by looters with the intention of selling them to the antiquities black market. This means that the archeological context of these coins is therefore unclear. According to the testimony of the Department of Palestinian Antiquities team, the material was caught in and around Hebron, Bethlehem, Nablus and Ramallah. As the coins are of no clear archaeological context, we will rely on the analysis of the texts and the decorative patterns to put the coins within their probable historical context.

The coins were inscribed with Nabataean texts and display decorative elements from the Nabataean cultural realm. The obverses of the coins portray jugate busts of the Nabataean kings associated with their wives (from Aretas IV to Rabell II), the king in left and his wife, the queen on the right field, (head of king in foreground and the queen's in background), and the king appears laureate with moustache. While reverses present double cornucopiae crossed and applied within a dotted circular borderline. A three-line Nabataean text applied between, above and below the two horns of the cornucopiae. The texts usually give the names of the king and his consort. e.g. reads: *hrtt/ šqy/lt* "Aretas, Shuqailat". The importance of the Nabataean coins is that the information about the chronology of the Nabataean kings is entirely based on the information derived from them.



## **ACOR and its role in Cultural Heritage Preservation and Sustainability**

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ACOR's Mission is "To advance knowledge of Jordan's past and present." A core part of this mission is to preserve and protect knowledge and make it accessible for future generations. This presentation will provide a broad overview of the role of ACOR and its continued and changing role in relation to cultural heritage in Jordan. As well as supporting researchers and students through its fellowships and library, ACOR has played an important role in supporting archaeological and cultural heritage preservation ranging from its projects on the Amman Citadel, Madaba, and the Petra Church in the 1990s to the Temple of the Winged Lions CRM Initiative since 2009. More recently, ACOR has recognized the important role played by local communities in the preservation of heritage especially through its USAID funded Sustainable Cultural Heritage Through Engagement of Local Communities Project (SCHEP). ACOR continues to foster cultural heritage activities and sustainability as a significant part of its mission by assisting the national government, local communities, and others in preservation of significant sites through training as well as knowledge-sharing with cultural heritage scholars and practitioners. This allows us to share Jordan's rich history with global audiences, as well as consider issues relevant to cultural heritage and tourism studies.

## **Can we really get rid of Humanities in higher education?**

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Anneliese Maier Preisforschung 2015 (AvH)

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In a world obsessed by profitability, universities are literally under siege to adjust their courses to what is perceived as the (immediate) needs of the economy. This pressure comes of course from the governments, but is also widely exerted by the students (and their parents) who consider that the chances of finding a job proportionately increase with the number of technical matters offered in a curriculum. From such a perspective, even a small course in human sciences is perceived as a waste of time and money by students engaged in engineering, medicine or natural sciences. It can however demonstrably be argued that the human sciences and culture *sensu lato* dramatically contribute to the development of the mind and improvement of creativity.

Furthermore, in a world that is quickly losing its marks, the role of the human sciences in shaping the students ethical, moral, and political conscience cannot be overestimated. The new information technology and the development of the social networks make it easy to largely diffuse content of all sorts that are uncontrolled and unverified. While the fast-growing phenomenon of fake news is emblematic of how information can be (mis-)treated, it would be mistaken to consider that the poorly educated audiences are the only target. To take another striking example, the number of scientific papers lacking a proper reviewing, as shown by the increase of papers that are withdrawn from scientific journals, is another tangible sign of how difficult it has become to make a sound assessment on the quality of what is published.

Such a behavior in turn unfortunately contribute to a growing skepticism toward science in general and the methodology of science in particular, which is more damaging. Hence, the fast-growing development of the feeling that scientific facts are no more than personal opinions expressed by individuals who have no special right to claim the truth.

In this, the human sciences, by using very traditional means like philology, criticism, semiotic and logic, which are the constitutive pillars of scholarly studies in literature, language, philosophy, history, art and archaeology, can provide experienced tools to decipher the complex world we live in. They can also significantly contribute to giving a sense to the technological innovations that are invading people's everyday life experience.



## The North Arabian deity *Da-a-a*: Evidence from the Thamudic inscriptions

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Sometime between BC 691 and 689, the Neo-Assyrian king Sennacherib (705-681) launched a military expedition in northern Arabia against Haza'el, king of Qedar, and Te'elhunu, the queen and priestess of the Arabs, who sought refuge in the oasis of "Adummatu", modern Dūmat al-Jandal (Al-Jawf). Victorious, Sennacherib brought back with him to Assyria Te'elhunu as a captive, an important booty, as well as the images of the six deities worshiped by the Arabs at Dūmah. Of these deities, three have been identified by the scholars, *Ru-ul-da-a-au* (Classical Arabic *Ruḏā*), *Nu-ḥa-a-a* and *A-tar-sa-ma-a-a-in*, the names of whom are indeed attested in some Ancient North Arabian epigraphic documents and literary sources. While mystery has long surrounded the three other gods, *A-tar-qu-ru-ma-a*, *A-bi-ri-il-lu* and *Da-a-a* whose names have so far not been found outside the Assyrian annals, the present contribution would like to shed light on a little set of Thamudic B religious inscriptions from north-west Arabia which appear to be actually addressed to the enigmatic *Da-a-a*.

**Keywords:** North Arabia; Religion in Pre-Islamic Arabia; Ancient North Arabian epigraphy; Thamudic; Dūmat al-Jandal.

## **Archaeology and Cultural Heritage in Afghanistan.**

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Afghan cultural heritage is facing numerous threats among which we can mention the consequences of the Civil War, religious fanaticism, low living standards, which leads some people to turn to the illicit trade of antiquities, and paradoxically the economic development of the country that may cause the destruction of archaeological sites. Based on a selection of representative threatened archaeological sites or exceptional discoveries brought to the attention of the scientific community only after their looting, this paper will present the rich cultural heritage of Afghanistan. We will evoke the wide range of solutions developed by scientific and cultural actors to ensure its preservation and to contribute to our knowledge.

## **The Educational Program of the German Protestant Institute of Archaeology**

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Living and being part of today's Knowledge Society implies recognizing the importance of the past, and imposes considering Cultural Heritage as a fundamental background of our identity. Therefore, safeguarding culture heritage came increasingly in the focus of public interest during the last years. However, only archaeological sites and objects as well as other traditions will only be protected for the future when people have knowledge about its value for mankind. Of course, all schools give an overview of the history of the country but they are restricted in time and facilities. However, there is a growing interest to get in deeper contact with the long-lasting history of the country. Therefore, the German Protestant Institute of Archaeology started an initiative for an educational program for school children. This has been worked out in collaboration with the Goethe Institute Amman, the Department of Antiquities of Jordan and several schools in Amman. The lecture will inform about the different activities which have been carried out in 2017 and 2018, and will give an overview of the planned development.

## **Endangered cultural heritage in the Middle East. On the possibilities of preserving ancient cultural landscapes in times of crisis**

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The Middle East has one of the world's most important cultural landscapes, whose origins date back to the beginnings of human history. This is not only evidenced by numerous, particularly important cities and monuments in the UNESCO World Heritage List, but also by the immense number of significant but often lesser-known archaeological and historical sites. Many of these unique monuments have been endangered for years by numerous violent clashes and some are already destroyed. However, this problem has only recently become the focus of international organizations and scientific institutions. The deliberate destruction of monuments aimed at questioning or destructing cultural identities observed in recent years in various countries, notably in Syria and Iraq, has resulted in increasing attention for the fragile situation of cultural property in the region. Since about 2012, numerous international initiatives have been set up that aim to compile research data as well as to document damages. In addition, international training courses were conducted in order to enable local players to operate professionally. The contribution intends to provide an overview of the current situation of cultural heritage in the various regions of the Middle East and to shed light on the problems resulting from this for its future preservation.

## **Documentation and Publication Project “Iron Age Monumental Sculptures in Jordan“**

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Humanity's cultural heritage is in danger: destruction of archaeological sites and objects, theft and illegal trafficking are a serious threat to the often millennia-old monuments and objects. Also, Jordan's rich cultural heritage is under threat. In addition to a wide variety of national and international organizations, archaeologists have a special duty to act: the dissemination of knowledge, training and education, but also documentation and publication.

The documentation and publication project “Iron Age Monumental Sculptures in Jordan,” which will be presented in the lecture is carried out by two German Near Eastern archaeologists from the German Protestant Institute of Archaeology in Amman with the aim of documenting already excavated finds, making them accessible to a broad public. The objects that will be documented and published comprise the monumental Iron Age stone sculptures that were part of the representative buildings of the kings of Ammon, Moab and Edom, and are therefore key objects for understanding this period. Only little has been known about the architecture of the capital cities of these three kingdoms so far, and this is why this project aims to document and present these monuments for the first time in detail.

The monograph will provide detailed descriptions and photographs of the objects with the aim of documenting the objects as well as their state of preservation, and also incorporates detailed information on their place of storage in order to be able to react in an emergency. The monograph serves both scientific purposes with its large catalogue and accessibility for broader audience.



## **Fortified in time: An Adaptive reuse of Wadi Rum fort**

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Wadi Rum, known worldwide for its natural beauty, is located around 250km to the south of Jordan's capital Amman. Declared in 1998 as a protected area by Jordan's authority and inscribed in 2011 on the world heritage list. It is one of the most visited sites by foreign and local tourists; statistics of the year 2017 show around 39,000 Jordanians and 139,000 Foreigners visit the site. Although known for its long history of occupation, the main attractions are related to adventure tourism. The trails set by the visitor's centre concentrate little on aspects outside of the desert morphology. Neglecting thus the local village of Rum, despite its anthropological and historic importance—containing gems such as the Nabatean temple, waterfall and the Ottoman fort.

In 2014, a project was initiated by The German Jordanian University Center for the Study of Natural and Cultural Heritage and Aqaba Special Economic Zone—Wadi Rum Reserve to rehabilitate the ancient Fort of Wadi Rum and its surrounding area. The project's concept emerged from the need for creating a new focal point by transferring the fort into an attraction zone the core of which is an open-air museum that tells the story of the evolution of the area. Using modern technologies as well as elements inspired by local materials, the designer created trails evoking Nabatean commerce that will take the visitors on a trip that invoke his senses and curiosity. The design of the fort is made to incorporate the people of the local village, who are encouraged to produce their local crafts, share their folklore and welcome the tourist displaying the Jordanian hospitality they are known for.

The project is funded by a local entrepreneur, Mr. Ezat al- Sajdi, and the German Jordanian University.

## **Radiocarbon dating of some archaeological churches in Jordan.**

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In the absence of inscriptions, archaeologists mainly use stylistic comparisons and architectural elements in dating the structures on archaeological sites including churches. At Umm el-Jimal, for instance, only two out of sixteen churches have inscriptions. In several cases, the inscriptions uncovered in some churches are not *in situ*; therefore, their dates remain debated. My lecture presents some case studies of using the radiocarbon dating technique in dating archaeological cement of mortar and/or plaster utilized in the construction of some churches located in the north and the east of Jordan. *In situ* mortar and plaster of walls, pavements and mosaics were C<sup>14</sup> dated, where datable lime-binder or organic inclusions were extracted from the cements and dated.

## **Archaeology and Assyriology in Iraq and the future perspectives**

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Archaeology increased our knowledge of the past of human activities and the development of culture and civilization. At the beginning, the main work of Archaeology focused on the collection of archaeological artefacts for the museums. Assyriology in Iraq is one of the main pillars in writing history. Because of the rapid development of modern sciences, interdisciplinarity in Assyriology is a very big challenge in order to analyse and understand the conditions of the daily life in the past. Our major duty is to prepare a highly educated generation and rearrange the educational situation that has been impaired in past years.

Iraq has very much been in the news lately. Overwhelmed with the war against IS, we may have missed very uplifting news like the Marshlands of Iraq being Inscribed on UNESCO's World Heritage List, opening of the museum in Basra, opening of "Iraqi German Center for Archaeology and Assyriology" in College of Arts / University of Baghdad and many other Achievements. The biggest challenge for archaeologists today is to rebuild what terrorist gangs have destroyed in archaeological sites. The aim of this article is to highlight the rising of awareness on the diverse and multicultural past of Iraq, and to increase the knowledge of societies in Iraq through archaeological and environmental research in the governorates, as well as raising awareness on Iraqi cultural heritage. We want to create something better to protect our cultural heritage and to promote its use as a tool for dialogue between different sectors of society.

## **Archaeological Sites in Danger Umm Qeis: a case study**

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As one of the main historical sites, Umm Qeis plays a tremendous role in the history and tourism of Jordan. Umm Qeis went through many difficult transformations through the ages and faced horrible changes in its main shape. An archaeological site that was transformed from a city to a village, a military base, and finally to abandoned remains that are still in danger up to this date. In spite of the fact that many of the sites remain unearthed, they are constantly looted. This is a real danger that could result in destroying evidence that archaeologists rely upon to understand the history of the site.

This paper discusses the main changes and transformation points that this archaeological site had passed through. This paper will shed more light on the importance of the site, and the real future dangers threatening it and many other archaeological sites in Jordan.

## **Unpublished Bernhard Lewin's Recordings in the Arabic Dialect of Hama (Syria): Linguistic and Cultural Heritage**

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In 1966, Bernhard Lewin published a book entitled *Arabische Texte im Dialekt von Hama. Mit Einleitung und Glossar*, which contains 16 texts in the Arabic dialect of Hama (Syria). Apart from this book, there is only one publication on this dialect—a text published by Enno Littmann in 1924 in *Zeitschrift für Semitistik und verwandte Gebiete*.

In the years 2014–2016, I conducted a research on the occurrence of a pause in Arabic dialects. For this purpose, I worked on dialects in which the so-called phenomenon of pausal forms is present. Bernhard Lewin has not observed this phenomenon in the Arabic dialect of Hama. However, I knew that there were three recordings of Lewin's texts in the Library of the Department of Semitic Studies at Heidelberg University. I thought it would be worthwhile listening to these recordings in order to investigate the occurrence of pausal forms. While searching for the recordings in the library, I came across a CD described as Bernhard Lewin. In addition to the three texts mentioned above, the CD included many other recordings, e.g. unpublished texts from Hama.

I find these texts interesting for several reasons. The registered dialect probably does not exist anymore. At the beginning of the 1980s, many of Hama's inhabitants were killed by Hafiz al-Asad's forces. This completely changed the language situation in the city. The district where the main informant of Bernhard Lewin lived was completely destroyed. The recorded texts are first and foremost a testimony of a language from 60 years ago.

In my speech, I will talk about the project that aims to describe the Arabic dialect of Hama on the basis of the data found in the Library of Semitic Studies in Heidelberg. In doing so, I will try to show how important a role the Arabic dialectology plays today in preserving the cultural and linguistic heritage of the Arab world.

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- Lewin, Bernhard. 1966. *Arabische Texte im Dialekt von Hama mit Einleitung und Glossar*. Beiruter Texte und Studien 2. Beirut-Wiesbaden: In Kommission bei Franz Steiner Verlag.
- Littmann, Enno. 1924. 'Neuarabisches aus Hama'. *Zeitschrift für Semitistik und verwandte Gebiete* 2: 20–50.

## Islam Attitudes towards Destruction of Archaeological Monuments

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Islam, as Muslims around the world believe, is only derived from Quran and its exegesis. So, based on these Quranic texts and Prophet's Mohammad traditions (Ḥadīth) and its religious interpretations, Muslims respect and appreciate the human culture and the need to preserve it for future generations and to preserve the history of mankind and its connection to the current generation.

Many archaeological monuments, which range from ancient, classical and Islamic (Sunnis and Shias) places<sup>1</sup>, have been influenced by the war – in Syria and Iraq. These archaeological sites were present in the periods of the ruling of the first Caliphs and during periods of Islamic dynasties up till now. On the other hand, the caliphs – especially Abu Baker, the first Caliph- commanded Islamic armies before battles with the need to preserve the lives of the people and places of worship and not to target unarmed people or even cut down trees. These were of the ethics of war, and this shows that the destruction of these monuments of civilization are for the sake of destroying the legacy of civilization and human heritage in this region and to erase its own history by conflicts.

Besides, many of the news and media reports pointed out that smugglers of archaeological objects proceeded to demolish what couldn't be carried from these archaeological sites, while what has been carried from these archaeological monuments have been sold on the black market.

This paper attempts to shed light on the concept of archaeology and archaeological monuments' meaning and value for Islam, and to show real Islam point of view regarding collective responsibility to safeguard common human heritage. It is a responsibility, furthermore, that links past, present and future generations in a chain of reciprocity and care; and it is worth noting that in Quran, God decrees Muslims to visit these sites for sermon and thoughtfulness.<sup>2</sup>

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Al-Azhar Al-Sharif, issued a fatwa on 06/03/2015 which considered destruction of any archaeological <sup>1</sup> site – especially religious- a major crime against the human heritage of the whole world.

<sup>2</sup> (Have they not journeyed through the land, and seen the outcome for those before them? They were more numerous than they, and had greater power and influence in the land. But what they had achieved availed them nothing) (Ghafir: verse 82).

## **Collection ethnography: from the field to display and back again**

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Based on anthropological fieldwork within museum collections, this article discusses the complex relationships between ethnographic fieldwork and exhibition making. The paper draws on two research projects with collections from the Horniman Museum, London and the Museum of European Cultures (MEK), Berlin. Reflecting on the parameters of translating research into public exhibitions and its limitations, the paper highlights how stories from fieldwork informed the display of Romanian household objects during the “Revisiting Romania: Dress and Identity” in London. It also demonstrates that past exhibition histories can serve as potent sources for ethnographic investigation. Using the archival sources of the 1950s displays of the Romanian collection, the paper shows how artefacts get mobilized in the politics of representation. The second case study, drawing on the emerging study of the Berlin’s MEK collection, will be used to reflect on the wider themes of the relationship between museum practices and the fieldwork encounter—its opportunities and challenges, as well as the different potential exhibition futures afforded by collections. Through an examination of museum holdings with source communities, the paper highlights ethnographic study of collections and provides new avenues for museum representation; at the same time making visible the complexities involved in contemporary anthropological encounters.



## **Early Islamic pottery from Jarash, North Jordan**

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This paper focuses on studying the early Islamic pottery from Jarash dated to the periods of 7<sup>th</sup> century to 10<sup>th</sup> century AD, and selected from the Danish-Jordanian Islamic Jarash project after recent excavations by the University of Copenhagen. The selected samples been examined using a combination of different scientific techniques including petrography and X-ray diffraction to shed light at the provenance and raw material of the selected pottery samples from Jarash. The study will compare the minerals in the pottery in reference to the local geology of the area from which they were derived.

The study aims to analyse the selected pottery samples using scientific methods, to reconstruct relations between numbers of sites requiring study, and to focus on issues such as sources of the raw materials for pottery, provenance, and manufacturing techniques. That's where pottery is rich in information, and contains many traits that tell us about what was going on in the workshop and in the kiln. Enriching our understanding of social and economic systems among past communities through the exchange of particular pottery styles, the technology of pottery production reveals the level of technical background of the people in a given site that can be used as an index of ancient civilization, interactions among sites, and interaction between humans and their surrounding nature.

## **Towards Constructing an E-dictionary for Preserving the Heritage of Arabic Lexicography**

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Arabic prides itself on its large repertoire of lexicography that dates back earlier than 786 A.D., the date of Al-Khalil's Al'ain dictionary. With a tradition that is 1,232 years old to date, it has a versatile collection of dictionaries that document the classical language. To the exception of but few, all dimensions of the lexicographic typology mentioned Malkiel (2003) can be illustrated with classical Arabic titles. In terms of range, for instance, if one considers the density of the entries, number of languages covered, and extent of concentration, they will find titles that fit. In terms of perspective, there are conventional and semantic, onomasiological and semasiological dictionaries. In terms of presentation, there are those that are arranged alphabetically, phonetically, and by word initial or final letters. Iqbāl, (1987) identified and described 1407 titles of premodern dictionaries 153 of which are of the general permutative, alphabetical, and rhyme type; 139 morphological; 345 specialized in such topics as horses, beasts, insects, birds, plants, dates, and armaments; 125 thesauri of the synonymy, antonymy, and homonymy types; 40 titles of facetious dictionaries, etc. This impressive wealth in lexicography stands in stark contrast to impoverished computer-readable lexical resources that can be used in natural language processing applications .

Information Technology started to be used in lexicography as early as the creation of machine-readable tapes when two Merriam-Webster dictionaries were compiled in 1960s. Computational Lexicography accelerates long-term efforts of dictionary projects by investing the computational and storage powers of modern computers. Computational Lexicography involves the development of a dictionary's specifications, design, collection of lexical data, information structuring, and user-oriented presentation and formatting. Many computational tools are developed specifically for aiding the development of dictionaries. These include concordances and corpora. A Concordance tool analyzes corpora: keywords are investigated within their contexts, frequency lists are produced, collocates are generated, keywords are extracted, etc. Other tools add significant information to the lexicons: the part of speech of a lexical entry is automatically added by POS tagger, syllables are delimited using transcription and syllabification programs, synonyms and antonyms are compiled with the aid of WordNets, etc.

Since many Classical Arabic dictionaries are freely available on the net in machine-readable format, this research seeks to (1) preserve the richness of Arabs' heritage of lexicography; (2) collect these machine-readable texts; (3) bring together modern lexicology and lexicography, on the one hand, and sophisticated computational tools, on the other, to create a new Arabic lexicon; and (4) implement topic identification that can classify and identify the themes (linguistics, literature, religious sciences, history, biography, geography, etc.) of the definition keywords, as these dictionaries take an encyclopedic nature. This can be implemented using machine learning programs, which will predict the theme of a paragraph. This new lexicon groups together definitions of lexical entries from different sources and presents them in a modern format. The new lexicon will be powered by search capabilities for lexical entries and keywords. Moreover, computational tools will support the ordering of lexical entries.

## ***A Personal Access to Cultural Heritage***

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*Cultural Heritage* is—by definition—bygone things, visible and invisible, inherited from former generations. That *Cultural Heritage* is conceived of as a part of our life, it must be in our minds. According to Aleida Assmann, one of the leading researchers about memorizing, places can preserve a memory, but “without any tradition, they become ghost towns that are left to the free play of imagination [...]”. Ghost towns – as well as other dead objects – mean nothing to the public, even though they might be fascinating or nice to look at for a short while.

The difficulty in prehistoric archaeology is thus obvious. The main aim of archaeology should therefore be to bridge this gap, and reconstruct the life of prehistoric people and what their *cultural heritage* means for us today. Due to our neurobiological dispositions, access and understanding is easiest by conceiving or even “seeing” people of the past. In my communication, I will present a discovery that has the potential to facilitate this process of creating understanding of and commitment to our *cultural heritage*.

During the 2018 excavation at Neolithic Ba‘ja, in southern Jordan, our team discovered an elaborate child burial. The child wore a necklace of several strings of beads which were connected by a mother-of-pearl ring on the chest. Given transdisciplinary investigation of this grave, it will offer new deep insights on the early Neolithic community. Exotic items and the style of the jewellery hint at close local and regional networks of exchange and common symbolic traditions. The burial gives an idea on how Neolithic communities became more and more differentiated and how they demonstrated personal and group identities increasingly by material objects, means that we still use today. The intense play of colours of the different raw materials and the necklace illuminate aesthetic ideals and artistic skills. Moreover, anthropological analyses might provide information about health status, familial relationships or the origin of this person. The burial also helps to understand how people in this prehistoric community conceived death and how they created relations to their ancestors. It can thus serve as a multi-dimensional mediator to Neolithic life 9000 years ago, but also as a trigger to critically reflect our Neolithic heritage.

However, to take advantage of this precious potential, we consider a reconstruction of the grave in a Jordanian museum a precondition because the site of Ba‘ja is hardly accessible. This reconstruction should be accompanied by a digital living image providing information about life in Neolithic Ba‘ja and its environment. The project is planned as a joint venture under the auspices of the Department of Antiquities by the

Faculty of Archaeology and Anthropology of the Yarmouk University in Irbid,  
European Museums, the German Archaeological Institute and the Ba'ja Team.

## **The status of the Prehistoric sites in Jordan**

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According to the systematic and aerial surveys, Jordan has about 100,000 sites in Jordan; about 60% of them are prehistoric sites. Though, unfortunately, most of the stakeholders and decision makers concentrate on developing and publicizing only 6-7 sites and all of them are only monumental sites. Although we live in a region rich with unique long history that spans more than 2 million years, the prehistoric sites are totally ignored and our information as scientists is only circulated in academic circles and published in scientific journals which hard to be accessed by the public. This prevents the general public from learning about the areas rich cultural heritage including the prehistoric sites.

Unfortunately, many prehistoric sites have been demolished in order to build new buildings. This has been done under the name of the economic development. Prehistoric sites witness the rise of societies and civilizations that continued to live through time. They contain the beginnings and the accumulation of the experience of waves of people who lived through the past; they are the holders of our roots as humans on Earth. They exist in our lives today and hopefully will continue to persist in the future. Furthermore, they continue to shape our identities. Therefore, these sites should be preserved by the stakeholders of the heritage of Jordan. Moreover, archaeologists, anthropologists, and conservators, who have the ability to travel through time and space when excavating and analyzing data also hold the responsibility. They are the ones who should reveal the social values practiced of these sites. Additionally, these narratives should be delivered as part education system and as part of the interior and exterior tourism packages of the archaeological sites.

## **Biotechnology from the history point of view**

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Biotechnology refers to a technological application that uses biological systems or living organisms to make or modify products or processes useful to any kind of human purpose. It is not known exactly when people began using the word biotechnology to refer to technologies based on living organisms, but the application of biotechnology began in ancient times. The ancient Egyptians and Chinese used biotechnology in the form of food fermentation. Biotechnology gained enormous importance during the last two decades. This is due to its unlimited potential to serve and benefit humanity. Manipulating living things have been done by humans since the ancient times, and started with domestication of plants and breeding them. New applications of biotechnology like genetic engineering, cell fusion and conservation of cultural heritage have come under modern biotechnology. Biotechnology for cultural heritage presents the work of many research groups from all over the world, who have studied problems of biological degradation of cultural heritage. In the present review, we are going to present the history of biotechnology and its application benefits to human needs including solutions for preventing and controlling biodeterioration of the cultural heritage.

## **The Archaeological Museums of Sousse (Tunisia): The History and The Lesson of History.**

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University of Sousse (Tunisia), Faculty of Arts and Humanities, Research Laboratory: Land occupation, settlement and lifestyles in the ancient and medieval Maghreb

It is undoubtedly due to its extraordinary archaeological richness that the city of Sousse (Eastern Tunisia), which occupies the site of the ancient Hadrumetum, is known in the literature pertaining to the domains of the material and immaterial heritage of North Africa. It is a very long tradition of research that can be traced back at least to the mid-nineteenth century. Besides, a collective cultural memory has been forged by its citizens, and an important archaeological collections have been accumulated by generations of antique dealers, enlightened amateurs and archaeologists. Consequently, towards the end of the nineteenth century, it became urgent to gather in one place hundreds of objects scattered here and there in multiple locations and buildings of the city incompatible with the rules of modern museography.

In Sousse, the idea of an archaeological museum made its way from the last quarter of the 19th century. Since then, the city has experienced several phases of alterations of premises and of museums for the conservation of archaeological documents. The history of these places of memory is unfortunately little known especially because many of them are now missing or disappearing. Therefore, we propose, for this international colloquium to address the issue of cultural heritage at the crossroads of the humanities and sciences, to put into perspective the history of the archaeological museums of the city of Sousse and to put emphasis on the lessons learned, contributing thus to the safeguarding of this cultural heritage and its transmission to future generations.



## [FeFe]-hydrogenase complexes with diselenolato linkers: synthesis, characterization and catalytic activity

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The global fossil fuels are diminishing, and they are harmful to the environment. Hydrogen is an alternative fuel that produces no dangerous products [1]. Hydrogen is produced naturally from protons and electrons using [FeFe]-hydrogenase enzymes found in certain microorganisms [2]. Biomimetic catalysts based on the active site of [FeFe]-hydrogenase enzymes have been synthesized, characterized and their ability to catalyse the reduction of protons to hydrogen have been demonstrated. We prepared the complex  $\text{Fe}_2(\mu\text{-SeCH}_2\text{CH}_2\text{CHMeSe})(\text{CO})_6$  [3] and studied its substitution reactions. It reacted with  $\text{PPh}_3$  to give only the monosubstituted complex  $\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_5(\text{PPh}_3)$  regardless of the molar ratio of reactants. In contrast, both mono-  $[\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_5(\text{P}(\text{OMe})_3)]$  and disubstituted  $[\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_4(\text{P}(\text{OMe})_3)_2]$  complexes were obtained from the reaction of the same complex with excess  $\text{P}(\text{OMe})_3$  [4]. Treatment of  $\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_6$  with bis(diphenylphosphino)ethane (dppe) in the presence of  $\text{Me}_3\text{NO} \cdot 2\text{H}_2\text{O}$  gave a mixture of the biiron  $\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_4(\kappa^2\text{-dppe})$  and the tetra-iron  $[\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_4]_2(\mu\text{-dppe})$  complexes. However, the reaction of the same complex with bis(diphenylphosphino)methane (dppm) produced two different complexes;  $[\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_5](\kappa\text{-dppm})$  and  $\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_4(\mu\text{-dppm})$ , while its reaction with bis(diphenylphosphino)ferrocene (dppf) produced only the chelated disubstituted complex  $[\text{Fe}_2(\mu\text{-Se}(\text{CH}_2)_2\text{CHMeSe})(\text{CO})_4](\mu\text{-dppf})$ .

All complexes have been characterized by elemental analysis, mass spectrometry, IR,  $^1\text{H}$ -,  $^{13}\text{C}\{\text{H}\}$ -,  $^{31}\text{P}\{\text{H}\}$ - and  $^{77}\text{Se}$ -NMR spectroscopy. The solid state structure of representative examples were determined by X-ray crystal structure analysis.

- [1] P.M. Vignais, B. Billoud, *Chem. Rev.* **2007**, *107*, 4206.
- [2] M. Frey, *Structure and Bonding*. Springer-Verlage: Berlin, Heidelberg **1998**, Vol. 90, pp 98-126.
- [3] M.K. Harb, T. Niksch, J. Windhager, H. Görls, R. Holze, L.T. Lockett, N. Okumura, D.H. Evans, R.S. Glass, D.L. Lichtenberger, M. El-khateeb, W. Weigand, *Organometallics* **28** (2009) 1039.
- [4] M.K. Harb, H. Görls, T. Sakamoto, G.A. Felton, D.H. Evans, R.S. Glass, D.L. Lichtenberger, M. El-khateeb, W. Weigand, *Eur. J. Inorg. Chem.* (2010) 3976.

- [5] M. El-khateeb, M.K. Harb, Q. Abu-Salem, H. Görls, W. Weigand, *Polyhedron* 61 (2013) 1.

## **Saddles and their accessories, a traditional handcraft in Jordan: delightful images from the ancient heritage but a mysterious future**

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This research is an ethno-archaeological study, which aims to present the use and manufacture of saddles (for camels, horses, donkeys and mules) in Jordan. This study deals with two parts, the first part depending on the rock drawings and the sculptures from ancient Jordanian heritage. The second part focuses on the manufacture and use of saddles and their accessories as a traditional handicraft (northern Jordan as an example). 30 years ago, the researcher has documented the saddle manufacture in Irbid, which has unfortunately disappeared and does not exist now. Some people who have donkeys make simple saddles; those who have horses are buying imported saddles. The traditional saddles are no longer used. It will be discussed in this study the types, names and the material of saddles as well as the prospects, prosperity factors and reasons for the decline of this handcraft.

## **Unpublished Silver Coins of Bahri Mamluks in Karak Museum in Jordan**

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In the Coins Museum, which is located in Karak city, there are collections of Mamluk Dirhams that have been bought by the Department of Antiquities of Jordan. These collections are new and have not been studied before. The researcher is going to study it, for the first time due to their importance in adding to our knowledge about Bahri Mamluk Sultans and about the process of manufacturing coins. The researcher will also study the apparent symbols on both sides of the coin.

Due to the importance of studying coins, which have become an independent field of study, I decided to continue the study about Mamluk coins and to shed light on what is inside the aforementioned set of coins which belong to the reign of Bahri Mamluks. My aim is to come out with results that give a clear image of the coins of that Sultans and what have been written on them so that they can help in discovering many different aspects of life at that time. Another aim is to provide the Museum with new unpublished coins (Dirhams), after cleaning and polishing them for presentation, so that they enrich the assets of the Coins Museum and encourage those interested in this field such as archaeologists, artists and hobbyists.

In addition to study both sides of the coin, the researcher will investigate their quality by X-Ray Fluorescence in order to discover their standard (standard here means their quality) and the proportion of pure silver to the other metals inside that coin. This could happen whenever adequate money is available. The researcher will not only talk about the political aspects during the reign of Bahri Mamluk Sultans, but he will also describe the economic, social and artistic aspects.

## **Technology acceptance model and the use of 360-degree videos in cultural heritage classes: an empirical study on Museums**

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Electronic educational technologies, such as eLearning platforms and virtual classrooms, have opened the door wide open for new possibilities to construct, transfer and share knowledge. New video technologies such as virtual reality (VR) and 360-degree videos have been used in different fields, including engineering, medicine and archeology, as tools to create educational material aiming at bridging the gap between theory and practice. The present paper attempts to evaluate the usefulness of using 360-degree videos in cultural heritage classrooms by revealing the extent to which cultural heritage students at Yarmouk University accept 360-degree videos techniques as learning tools. The researcher prepared a real-life 360-degree video of a museum in Jordan to be used as a learning material in cultural heritage class. The video will be shown to thirty students at Yarmouk University through virtual reality headsets; the students will then be asked to answer a survey, based on the work of Venkatesh & Bala (2008), to reveal their acceptability of this technology in terms of perceived usefulness and perceived ease-of-use. This study would serve as useful input for on-going optimization of cultural heritage courses.

## **Liberal Arts Education in Arab Traditions: An Exploration.**

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Liberal arts have long been celebrated in modern systems of education. They provided perspectives, offered pedagogical techniques, inspired future plans and guided general policies. The notion of liberal arts, however, has not taken its deserved place in institutions of education operating in the modern Arab World. The factors contributing to this marginalization or even suppression are too complex to be discussed here. My concern is with the following question: could the ideas, techniques and orientations generally summed under the rubric of "liberal arts education" (LAE) match practices in the Arab traditions both in their classical and current forms? To address this question, I first discuss the notion of LAE. Second, I briefly describe modern education systems in the Arab region and the ways they have adapted globalized systems of schooling into local conditions and needs. I offer suggestions onto how policies of modern governance may have contributed to either suppressing or enhancing the development of LAE related practices. Third, I present results of a survey-based sociological study on college students representing different Arab countries. The aim is to measure the prevalence of LAE ideas as attitudes sustained by different institutionalized traditions operating in the region. Fifth, I share a group of questions, reflections and suggestions on how could this under-researched subject be further investigated, sustained and developed.

## **Ethnoarchaeological Description of Abila and Hartha in Norther Jordan**

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Abila is considered to be among the most important archaeological sites, rich in its architecture, population's activities, and continuous settlement from the Roman age through Byzantine and Islamic periods until modern times. I will focus in this lecture on the factors that caused the widespread distribution of pottery shreds in the areas and agricultural fields surrounding Abila archaeological site. In addition, I will discuss the distribution of the agricultural fields, their names, and their names' meanings, and the types of relation between these names and agricultural or economic practices.

## **Mixed Realities: Augmented Reality and Virtual Reality in the conservation of cultural heritage**

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Cultural Heritage artefacts have traditionally been perceived by the general public as simple objects with “one single dimensional *material* reality”. However, with a simple study of values and narratives embedded in heritage, one comes to realize that heritage is an extremely rich and kaleidoscopic concept, a multifaceted reality that does not only depends on its physicality, but also mainly on the *cultural filters* that constitute the base of our perception and accordingly, the way we understand our reality. This has driven the increasing recognition of the relevance of the immaterial values associated to that material culture and the identification as such of other intangible or ephemeral expressions of cultural Heritage currently labelled altogether as “immaterial heritage”. This has led as a result the development of a new “value-based conservation” approach, recognized by the Burra Charter.

On the other hand, this conceptual review has paved the way for a far-reaching discussion on the “reception” of the architectural heritage that has disappeared partially or completely. Now, the blurring borders between the sensorial perception of what is actually tangible yet perceived through cultural filters, and what is virtual but can trick our senses is becoming “more real than the real thing”, opening new fields for discussing the use of the technology. The possibilities offered by technology go far beyond the choices of improving the presentation of an architectural element that has arrived to us in a *fragmentary* state of preservation, a confusing *multi-stratified state* (as the result of many transformations and changes of use throughout its history, each responding to different contexts and associated values), or even been completely destroyed. Actually, the new technology would allow us to deepen our knowledge of the artefact and its history, and of the way we can actually intervene on it to preserve and present it (whether we are dealing with actual material remains or not), driving the conservation process itself. This triggers a series of discussions that encompass the concept of *Authenticity*, mechanisms of perception and recognition of associated values, and ways of planning and engaging in the actual preservation of the material remains. In the first case, we would follow the steps of Walter Benjamin, re-editing and reviewing his concept of “Aura” (now that the work of art would be not anymore the result of a mechanical process that allows reproducing the “original”, but even of recreating it for the enjoyment of our senses). In the second one, we can study some examples of the first steps given to the use VR as an actual tool for preservation.

In our times, with new technologies emerging every second, some methods of presentation and communication rise to meet the hopes and expectations of conservators of cultural heritage in its different forms, and these technologies might



be more successful than any before them. The media used for presentation in architecture in general, and conservation in particular, has been a key issue for the creative process itself as well as for the presentation of architectural objects that doesn't exist yet or don't exist anymore. Throughout history, conservators have been experimenting with different media and resources for the communication, and description of ideas and hypotheses regarding the actual configuration of fragmentary architectural remains. We live in a time where we might be in touch with such tools that the professionals have been looking for. These tools could be used beyond the representational value to rather conveying and allowing the full realization of the conservation process. Different tools will be explored in this thesis, with special attention given to the qualitative side of the issue. The tools in question are what is commonly referred to as tools for "Augmented Reality" or "Mixed Reality methods". Based on this approach, the following paper attempts to scratch the surface of the theoretical and the practical aspects of the issue of using virtual and augmented reality as a part of the conservation process, and asks the questions that might be due to the fact that these powerful tools have the incredible capacity of communicating complex data of different types, conveying to the observer the multilayered nature of cultural heritage.

# **Creative Cultural Tourism as a New Model of the Relationship between Cultural Heritage and Tourism**

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The current study explores creative cultural tourism as a new model for the relationship between cultural heritage and tourism. Cultural heritage with its tangible and intangible components represents an essential part of culture tourism. Many changes have been happening in tourism due to new forms of consumption patterns, tourism activities, and tourism products. These changes require shifting from traditional culture tourism to creative cultural tourism as a new concept of cultural heritage. However, creative cultural tourism can solve the problems experienced by tourists of the traditional culture tourism, which is rapidly becoming another form of mass tourism. In addition, the paper explains why and how traditional culture tourism is being transformed into creative culture tourism.

**KEY WORDS:** Culture Tourism; Cultural Heritage; Creative Cultural Tourism.

## **Cultural Heritage in Transition: Mar Elyias as a case Study**

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Tell Mar Elyias is located north-west of Jordan, near the city of Ajloun. Studies have shown that this Tell has evidence going back to the time of the prophet Elijah (Elyias) 910-860 BC. Prophet Elijah is of great importance to us in Jordan since it is believed that he was born in the region of Listeb, which is one kilometer to the West of Mar-Elyias. As some researchers thought, Listeb is the old Thisbe of Gilead, an area mentioned in the Old Testament as the home of prophet Elijah. This prophet lived in the area of Wadi El-yiabis. Listeb and Mar Eliyas were given a special respect by the early Christians; it was an area of pilgrimage. This is evidenced by a Spanish pilgrim who visited the area in the fourth century CE. Two churches and a monastery were found at the top of the Tell. Later, the Vatican recognized the site of Tell Mar Eliyas as one of the sites of pilgrimage in Jordan to the third Millennium. The Department of Antiquities of Jordan has uncovered important traces of the site. Over the past years, a number of questions has been raised about the validity of the link between Thisbe and the prophet Elijah and the village of Listib. In this article we will try to trace the history of this site and show its importance.

## **The “Patina of the Desert” and “The Quarter Geomorphology”, the new ways for the rock art engraving chrono-stratigraphy in the Sahara.**

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The Sahara is a territory situated globally between 32 ° and 18 ° in latitude N. and 18 ° W. - 35 ° E. in longitude. It fascinates many people by its very big area, the magnificence of its landscapes and the mystery that surrounds the people who live inside it. The Sahara is limited to the North by the effects of the polar forehead, to the South by the Sudanese Monsoon. It knows only rare and irregular rains, which vaporizes during fall because the insufficient humidity of the low layers of the atmosphere.

In the North, it is lined by a zone which quickly passes in a Mediterranean gradient favored by the presence of the sea. In the South, it passes imperceptibly in a Sahelian zone. Major cloudy bridges centered agreeable seasons on Mauritania's Central Mountains, the coast of Red Sea, and may be Tibesti, making a link between the tropical zones of the South and the moderate zones of the North. They confer to this area a certain aridity, so the western part of the Sahara is much less dry than its oriental part. Towards the end of the last big glaciation, between 11 - 10 000 years ago, oscillations between wet and dry periods followed one another until the inexorable installation of the current aridity.

The Sahara is also the vastest open-air museum where are dozens of thousand works engraved on rock or painted on the walls of rock shelters. In the reading of these pictures, a story of this area comes to light, and also of the many people who stayed there. The Saharan engraved and painted rock art shows the human presence, the lifestyles of these peoples, the fauna, and the flora in an environment of continuous evolution. Rock art is paleontology, and it allows us to know the aspects of certain animals. It partially establishes a testimony of a considerable interest for our current societies.

In Quarter Geology, coherent sets of rock art form levels with stratigraphy value and by the overlapping clarified chronology. The preservation/restoration of the engraved stone walls of the Sahara, it accesses supposes to know the physical and chemical characteristics of their patina and diagnoses the agents of damage. This knowledge is necessary to implement the process of repair. The study of the modifications of the surface texture and the sub-surface of stoneware highlights the protective role of the patina and the underlying cortex as well as the zones of weakness of the washed levels. Some experiments in the laboratory allowed us to specify the mechanisms of the formation of the patina of the desert. A genesis connected to the presence of water circulating in the rock explains the endogenous contribution (manganese and clayey

cement), while the incorporation of wind silts underlines a step of its evolution. For the "brown" and ochre patina, a greater exogenous contribution is obvious.

To recreate the patina, the manufacturing of the mortar consisted in measuring the proportions of sand, clay and silicate of ethyl so that its hardness and properties of porosity are close to those of the natural material. The compounds of polymerization are compatible with those of the rock and their penetration is limited to the interface rock/mortar. Many discoveries in these past fifteen years in the Atlas saharian, Ahaggar and Tassili Ajjer (Central Sahara) change the chronology because bringing them back to Pleistocene superior.

## **The SCHEP Community Engagement Model**

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Jordan hosts a vast number of archaeological sites that are important cultural heritage resources (CHRs) for the country. These CHRs could have substantial tourism appeal if properly developed using a sustainable preservation model that ensures their viability as long-term resources. Implemented by the American Center of Oriental Research (ACOR), the USAID Sustainable Cultural Heritage Through Engagement of Local Communities Project (SCHEP) aims to preserve and promote cultural heritage resources through site development projects that engage and employ local communities in sustainable site preservation, management, and promotion. Based on its previously funded field projects across Jordan, SCHEP was successful with its partners in demonstrating the substantial benefit of community engagement in nine pilot project CHR sites which consist of Bayt Ra's, Umm al-Jimal, Madaba, Ghawr as-Safi, Busayra, Bir Madhkur, the Temple of the Winged Lions in Petra, Wadi Ramm, and Ayla in Aqaba.

SCHEP developed its community engagement model based on grassroots empowerment of local communities in participating in different site preservation interventions, tourism development and awareness activities. SCHEP offered many job opportunities and hands-on capacity building programs for local communities, supported establishing CHR community-based enterprises, and worked with the Department of Antiquities of Jordan and other key stakeholders to mainstream and strengthen the important role of communities in preserving cultural heritage and in fostering their creative and intellectual engagement with Jordan's past. This paper will present the overall SCHEP community engagement adaptive model and the different levels and approaches of engagement in cultural heritage preservation and development.

**Keywords:** Community Engagement, Public Archaeology, Cultural Heritage, Sustainable Development

***TAKTIKON*: an online database on the prosopography and administrative structure of the Byzantine *themata***

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The *TAKTIKON* is an online tool that aspires to facilitate research on the prosopography and the administrative (military, civil, financial) structure of the Byzantine *themata*. The *themata* (θέματα in Greek) were important administrative divisions of the middle Byzantine Empire established in the mid-7th c., which, despite significant changes in the 11th and 12th c., continued to influence the Byzantine administration and society until the end of the Empire. The date of their creation, their early nature, as well as the military and social transformation related to them, are topics that continue to be heavily discussed among scholars. All these discussions rely mostly on evidence provided by historiography and other sources and, above all, by sigillography.

Sigillography refers to the study of lead seals, which authenticated and secured the correspondence of Byzantine officials. The contribution of sigillography to the study of Byzantine administration is of paramount importance not only because of their sheer number of seals (thousands of lead seals have survived to our day), but also because of the wealth and actuality of the information they convey. This is so because the seals that accompanied the letters of every Byzantine official bore on their obverse his preferred decoration (usually the portrait of a saint) and on their reverse, which is of greater importance, a legend identifying the sender by his name, title(s), office(s) as well as, quite often, his geographical jurisdiction. Whenever a change occurred in his career, the Byzantine official would change his seal and his *boulloterion* (that is the pliers-like iron instrument that he used for striking seals) so that he could have a new legend denoting his most recent title, office or area of jurisdiction. It becomes evident, therefore, that the study of seals is methodologically quite demanding, as it presupposes a strict distinction among the official who strikes the seals, the number of *boulloteria* that this official used during his career in order to strike these seals and the number of seals produced by each one of his *boulloteria*. Of great importance in this process is the ability of the researcher to gather as many seals as possible to avoid multiple entries. The fair number of seals that has appeared in more than one publication (excavation reports, museums, private collections, exhibition, and auction sale catalogues) consolidate that these seals were issued by the same official (the distinction among *homonymoi* officials poses here another difficulty), and distinguish

finally whether these seals come from the same or from different (and how many?) *boulloteria*.

The present paper explains the principles followed in the construction of the *TAKTIKON* database in order to tackle the afore-mentioned methodological difficulties and facilitate the collection and above all the presentation of all the relevant evidence on *thematic* officials whether literary or sigillographic. As a result, the *TAKTIKON* offers the scholar the most up-to-date lists of *thematic* officials, arranged in strict chronological order. These lists are then, in fact, the one and indispensable background against which any serious discussion on the origins and nature of the Byzantine *themata* may begin.



## **Safeguarding Syrian archaeological Heritage: humanities and natural sciences**

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Recent efforts to mitigate the on-going, relentless destruction of archaeological and historical heritage in the countries of the Middle East emphasize the importance of interdisciplinary work involving both the humanities and the natural sciences. Typically, projects bring a broad spectre of state-of-the-art technologies into play, often involving advanced analytical tools for virtual reconstruction. On the other hand, researchers acknowledge that it is vital to understand issues of identity, power and socio-economic development as a necessary condition to the success of any heritage initiative. We discuss these connections using as case studies two heritage projects recently concluded. The project *Scanning for Syria* involved producing virtual reproductions of Late Bronze Age (1200 BCE) cuneiform texts. The project *Focus Raqqa* began an assessment of the archaeological treasures lost from the archaeological museum in the city of Raqqa and a digital inventory for international police organizations. Both projects looked beyond the contemporary bays towards future reconstruction, had a tremendous public outreach, posed methodological challenges as well as ethical questions and paved the way for inspiring future work.

## **The Epigraphic Languages of Iron Age Jordan: A Review**

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The paper will give an overview of the Ammonite, Moabite, Edomite and Aramaic languages of Jordan attested in some 50 inscriptions and 250 stamp seals uncovered in Jordan and assigned to the period between 1000 and 550 BCE. The linguistic features of these languages and the relationships among them were established at the beginning of the 20<sup>th</sup> century based on cultural criteria that mirrored their relationships in the biblical narratives. The current study suggests a new classification of these languages based on internal linguistic evidence, where phonetic, morphological, syntactical and lexical features will be investigated on their own. Chronological and geographical distribution of the written evidence will also be taken into consideration. This approach will most likely produce a new linguistic map of Jordan during the Iron Age.

## **Columns, theatre, temples (churches) and beyond – what makes the Roman city?**

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The protection of Cultural Heritage sites as well as their potential role as places of local identity, education, individual contemplation and curiosity can ultimately only be successful due to the awareness of local and regional communities, as well as their willingness to connect to these sites. The paper seeks to address this challenge for archaeologists and site managers by focusing on one aspect: the validity of the long established, ‘traditional’ narratives applied to the ‘Roman-byzantine city’ and especially the role of restored monumental buildings used to create iconic architectural landmarks of the sites. Colonnaded streets, (colonnaded) temples and (colonnaded) churches as, well as theaters are the most obvious, nearly omnipresent components here, signifying the urban *grandeur* of Antiquity. They shape the experiences of visitors of sites all over the former Roman world, from Spain in the West to Syria and Jordan in the East. But this focus has also led to a remarkable homogenization of the appearance (and experience) of Roman urban sites today. And it too often affirms an unquestioned master-narrative of ‘the Roman-byzantine city’, suppressing the true complexity of ancient city life, its astonishing regional diversity and the variety of (changing) lifestyles of their inhabitants. By introducing case studies and experiences from Germany and Jordan, the paper advocates that a turn towards these aspects of ancient urban *Lebenswelt* below the level of architectural monumentality might not only lead to a more adequate knowledge about historical societies, but also open horizons to connect the public to ‘their’ site, stimulate their curiosity and even contribute to sites protection.

## **Buildings Archaeology in Northern Jordan: an approach between digital technologies, safeguarding practices and local development**

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Architectural Heritage of Northern Jordan is not only an important source of information for reconstructing the history of the region, but also an opportunity for the development of small local communities. Starting from the example of the project carried out in the village of Umm as-Surab (Mafraq Governorate), the present contribution aims to illustrate how buildings, archaeology, can help in understanding architectural heritage, which is sometimes difficult to decode. On the other hand, it will illustrate how digital technologies can be of great support for the documentation of delicate assets that need to be safeguarded through careful conservation practices. In this process, local community has a leading role. For this reason, it must be involved in the research carried out, activating dynamics of collaboration with local and international institutions that can contribute to the creation and maintenance of a sustainable development between history, environment and local traditions.

## **The preservation of the ancient Greek inscriptions in the Near East and the conditions of the establishment of the epigraphic archives**

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**Abstract:** Greek inscriptions are extremely numerous in Jordan, very often preserved in small sites or villages. They have been present there since the second century BC until the beginning of the Abbasid period (eighth century BC). Many of them are epitaphs engraved on stone stelae. There are also, for example, many other texts inscribed on the pavement mosaics of the small Byzantine churches that are scattered throughout the country. The Greek inscriptions are a part of Jordan's heritage, and important historical documents if they are properly studied. In the past, many of these inscriptions have been lost or destroyed. Three threats specifically target the preservation of the inscribed mosaics or stelae:

- Ignorance and the taste for voluntary destruction that pushes some people to destroy stones and mosaics to find imaginary hidden treasures.
- The greed that drives some to build illegal collections, and others to sell these objects, often after cutting them into several pieces.
- The negligence and lack of interest that lead to the destruction of some poorly protected mosaics or stones.

My paper will examine the current situation, and seek to present some remedies. In particular, this involves collecting and processing documents by using modern technologies and building on the experience gained through the "IGLS-Inscriptions de la Jordanie" programme.

Is the idea of an epigraphical Museum in Jordan possible?

## **Egyptian Colloquial Poetry and the Construction of a More Representative Canon**

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This presentation argues that Egyptian colloquial poetry, a 'genre' largely neglected in discussions of the canon of Modern Arabic literature both inside and outside Egypt, presents alternative perspectives on both literary merit and the role of the artist in society. To do so, the presentation starts with a quick survey of the development of Egyptian colloquial poetry and of its most salient features across the different stages of its development as well as surveying its current status in literary and academic institutions inside and outside Egypt. It, then, investigates this status of relative neglect in light of questions of canon formation (Guillory 1995), social and symbolic capital (Bourdieu 1986; 1992; 1993), and mainstream constructions of the intellectual (Qandil 2010; Baud and Rutten 2004). In the conclusion, the presentation attempts a reconstructed approach to the study of Egyptian colloquial poetry, building on less 'popular' notions of literary commitment and the nature of the intellectual, ideas of heretical discourse, and the relationship between language and carnival. It also stresses the relevance of translation studies and cultural studies to the construction of a more visible status of Egyptian colloquial poetry in the canon of Arabic literature both inside and outside Egypt.

High sensitivity nuclear techniques and Monte Carlo stimulation  
in cultural heritage research

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## **Recent developments in luminescence dating for rock-surface exposure and its application in Jordan**

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Archaeological, megalithic structures are common features of the ancient landscape, which are widely spread in Jordan and in the region. However, the chronology of these structures remains hampered by the lack of reliable absolute ages to date construction or period of use. Recently, *optically stimulated luminescence (OSL) dating for rock surfaces* applied to quartz extracted from rocks forming these structures provided important chronological information and breakthrough in rock dating. In this work, we will present three separate studies of dating megalithic structures (Desert Kite, Khatt shebib and Petra terraces) using rock surface luminescence dating. There were no previous direct radiometric dating for these sites, and their chronology had only been attributed to nearby sites or material found in their vicinity. The method has shown a sequence of burial-daylight exposure events for the rocks. From these events, the age and time of exposure have been calculated. The final results had proved the immediate usefulness of the technique for updateable material (rocks), and the wide open exciting opportunities in archaeology for the future.



## **Heritage Management in the Kingdom of Saudi Arabia**

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The geographic position of the Kingdom of Saudi Arabia in-between continents, the variation in its topographic and climatic settings, and the diversity in its natural, cultural, and human resources have made it one of the richest counties in civilizational, cultural, and ethnographic heritage. Attesting to that are the numerous archaeological discoveries showing human settlement since ancient times, as it is the case for Najran, Jawf, and Riyadh sites. Studies have also shown that the earliest settlements appeared in these sites were in the Stone Age. Soon after that, they were transformed across later historical periods into cities with distinct architectural patterns.

Considering that national heritage is the product of accumulative human experience transmitted through generations across time, and encompasses ruins, architectural heritage, museums, and traditional crafts and industries; and that heritage is a spiritual bond connecting current generations to their past; and that it is linked to sustainable economic development, the Kingdom has taken a number of necessary measures to preserve it through heritage management. Prominent among them are outreach and safeguarding documents programmes as well as implementing maintenance, restoration, research, preparation, and capacity building projects.

## **Mexico's Heritage and the consumption of an institutional past with a mobile application**

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“Alternative Mexico” is a mobile application drawing from the need to preserve and promote contemporary heritage resources that are of great value to Mexico's citizens. Mexico's heritage is preserved in terms of its monumentality, its relevance to the history of the nation, and within the aesthetics of Mexican nationalism. Infrastructure building and promotion of urban lifeways to modernize and strengthen Mexico's economy, has resulted in the appropriation by its citizens of modern spaces, with the inevitable creation of new heritage values. These new heritage resources oppose the national definition of cultural heritage and are the main the main source of conflict during infrastructure planning and building.

How to effectively connect new heritage values to the national heritage preservation model and, at the same time, convey this rich and varied cultural heritage to those involved in planning and building for their preservation and to those visiting Mexico is the concept behind the design of this easy to use web-based ([mexicoalternativo.com.mx](http://mexicoalternativo.com.mx)) mobile application for iOS and Android platforms What makes us different is how we have built its contents, through a strategic alliance with Mexico's citizens as part of a value chain teaching-research transfer. Students interview their neighbors within 1 km in diameter and research the area. The website and the app give the user the opportunity to add a place of interest by filling up a simple form, even loading a photograph.

The App is entertaining and educational. The application takes you to a menu listing the areas where heritage resources have been recorded. Clicking into the selected item takes you to an active or an offline Google map, pinpointing each heritage resource, displaying a simple and engaging text in Spanish and English, and a photograph or you can simply direct yourself to that point and visit it directly.

## **The Aramaic Cultural Heritage in the Middle East**

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The Aramaic culture has its historical area of existence in the Middle East mainly in the greater area of the *Bilād aš Šām* and Iraq. Since its first attestation 3000 years ago, Aramaic has been an integral part of Middle Eastern culture. This can be observed at archaeological sites and ruins spread all over the region. In addition, linguistic evidences for the Aramaic culture can be encountered throughout the Arabic and other Middle Eastern literature. Nevertheless, beside its use in the so-called Syriac churches, currently in the Middle East there are a few places only where Aramaic is still spoken, yet the Aramaic culture is still alive. Due to mass migration to Western countries, Aramaic has been almost uprooted from its countries of origin. My presentation will shed light on the past and current status of Aramaic culture in general, and it will thematise the question of future perspectives for Aramaic cultural heritage in countries of the Middle East.

## **Overlapping perspectives on Heritage Legal framework, in France, Japan and Jordan, from heritage to cultural property and cultural heritage**

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If the concept of the 'cultural heritage' is a well-recognized one, and universally used by historians, archaeologists, anthropologists and other researchers, the term 'cultural property', on the other hand, seems to be used only in a legal context. Throughout its history, the concept of cultural property has attracted more attention from lawmakers. Through the cultural property prism, even though it still may be considered only in a legal sense, many moral issues arise. It allows us to analyze how the international community tries to protect cultural objects. In Jordan, cultural Heritage is protected by Antiquity Law No. 21 for the year 1988 and its amendment. This law was extended in 2003 by Interim Law No. (49) for the Protection of Urban and Architectural Heritage. In France, laws of cultural property depend on the nature of the property protected, its evolution, context and environment.

The 1950 Cultural Property Law established a property classification system to protect Japan's cultural heritage. It imposes strong constraints for their preservation, repair and export. Designated Cultural Properties in Japan can be tangible as well as intangible. After a long process, the possibility of protecting intangible heritage by Cultural Property Law became internationally understood. Usually lawmakers use specific terms such as 'monument', 'site', 'antiquity' and 'relic'. However, modern legislation is beginning to incorporate both terms, cultural property and cultural heritage, with the more frequent generic reference being to 'cultural heritage'. This paper will try to lay the foundation for an understanding of the general problems that the international community is confronted with in its endeavors to protect heritage highlighting those ideological concepts that act as a reflector of the historical use of each terminology by major actors in heritage fields in each country.

## **Heritage Impact Assessment: a Tool for Sustainable Development**

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*Central question:* How does Heritage Impact Assessment fit into national and international societal agenda's focusing on sustainable development?

### *Threats to heritage*

When talking about threats to heritage most people immediately see images of terrorists destroying historic landmarks. Intentional destruction in fact, only causes a very small percentage of cultural heritage being lost. The biggest threat to heritage often goes under the radar. These are large scale infrastructural and agricultural developments, of course, also very much relevant to the Middle East.

### *Heritage Impact Assessment*

From 2000 ICOMOS signaled that there was a significant growth in the number of potential threats to World Heritage Sites. The threats were mainly caused by the explosive increase in large-scale construction and infrastructure works. Until then, heritage was only marginally protected from developments by Environmental Impact Assessments (EIA), and the assessment was mostly done by soil engineers. To make matters worse, in many countries EIA was not even required. This was of course insufficient. In this context the Heritage Impact Assessment (HIA) was developed. HIA is a method to predict both the positive and negative impacts of a policy or infrastructural development and provides advice on how to enhance the positive effects and to avoid, limit or compensate the negative effects for heritage resources.

### *A heritage time bomb*

HIA was borne out of a conservation discourse ('a culture of loss'), focusing on the protection of static monuments and sites and their intrinsic value. The last two decades a new paradigm or discourse in heritage management has become more and more mainstream, namely of heritage planning ('a culture of profit'), which sees heritage values as dynamic and argues that utility is the most important justification for heritage. Within the heritage planning discourse, there is an increasing concern that the growing number of protected heritage sites creates a 'heritage time bomb' especially in the urban context. The heritage time bomb refers to the implications of

the growing commitments to maintain, repair and restore an ever-increasing list of protected heritage sites. This includes the rising costs of protection and restrictions on the development of sites, which can be especially problematic for cities and is of course not sustainable.

### *Sustainable cities*

HIA could be used as a tool to *balance* heritage protection with spatial development rather than simply to *protect* heritage from spatial development. With an HIA consideration is given to the potential negative implications of an intervention early on in the process, therefore the plans can often still be changed without large (financial) consequences. A plan can be adapted, or the negative impact can be reduced or mitigated. Any positive impact on the heritage will be increased as much as possible.

### *Promoting inclusiveness*

Besides being open to change and in principle pro-development, HIA also works towards another global development goal. The HIA methodology requires multi-stakeholder participation and gives people a say in what is important to maintain. In order to assess the value of a particular site being potentially impacted by development it is necessary to hold multiple stakeholder interviews. In this way HIA follows the heritage planning discourse which argues that the user gives authority to heritage (instead of experts or policy makers). Even though the assessment requires finding a balance between sometimes conflicting interests, if the assessment has been performed well this means in principle representation of all. HIA therefore benefits inclusiveness and the universal right to cultural heritage.

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## **Historical Mosques in Jordan**

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Today's Jordan is known to be the region where Islam spread northwards outside Hijaz during the Prophet's lifetime. The modern Hashemite Kingdom has numerous sites in its material cultural heritage linked to the early history of Islam. In public perception, the historical monuments of Islam, apart from focal points such as the Haram al-Sherif in al-Quds, are rather in the background.

By historical mosques we mean those sites of Muslim assembly, prayer and memory that date from the time of the first successors of the Prophets (Rashidun Caliphs) to the end of Ottoman rule. Since 2016, a group of students from the German-Jordanian University has been working systematically to record these monuments for Jordan, and describe them in word and image in their current state of preservation.

The article provides an overview of the monuments recorded to date. It sketches a first typological-chronological structure for them according to criteria of architectural history. It also gives an outlook on the possibilities and problems of the preservation of historical mosques and their presentation in the field of religious tourism.

## **Destroyed World Heritage and some crucial issues final clean**

Toshiyuki Kono

President of ICOMOS –

International Scientific Committee on Legal, Administrative and Financial Issues  
(ICLAFI)

The List of the World Heritage contains 845 cultural, 209 natural and 38 mixed sites in 167 countries. The list not only reflects the different cultural values of the world, but also offers a collection of diverse cases for well-structured-value-evaluation. If we apply a third dimension, we could select some sites from a different angle for in-depth analysis. Today, we apply the lens of “destruction” and “recovery and reconstruction” to World Heritage.

Destruction is not a new phenomenon for World Heritage. The heavily destroyed and reconstructed Historic Center of Warsaw was nominated in 1978 in which the Aachen Cathedral was inscribed. The situation has become even more complicated since then. More recently, the bridge in Mostar was destroyed and reconstructed before the nomination of “Old Bridge Area of Old City of Mostar” in 2004. The “Cultural Landscape and Archaeological Remains of the Bamiyan Valley” was inscribed in 2003 even after two giant Buddha images were destroyed by the Taliban.

A recent striking phenomenon is that some World Heritage sites have been targeted for intentional destruction. 14 of the 16 inscribed Mausoleums in Timbuktu in Mali were destroyed by extremists in 2012. In September and October, at around the same time, a number of World Heritage Sites in Aleppo in Syria including the Great Mosque and its Minaret were also devastated. While the reconstruction of the above-mentioned tombs in Timbuktu was at the final stage of completion in 2015, Palmyra in Syria was being attacked by ISIS. In the same year, Yemen’s Old City of Sana’a and the Old Walled City of Shibam were placed on the List of the World Heritage sites in Danger due to airstrikes.

Destroyed heritage sites can deliver a very powerful message. Without reconstruction, as the Hiroshima Peace Memorial, a World Heritage site inscribed in 1996, is a case in point. Destruction implies “losers” and “winners”, and the inscription of a once-destroyed site as World Heritage site may awaken the sorrowful memories of multiple stakeholders. How should we ensure that the site is “*of common importance for present and future generations of all humanity*”. As such, is “*the permanent*



*protection of this heritage is of the highest importance to the international community as a whole”?*

Reconstruction of a destroyed building could be considered as a natural human reaction to such destructive acts. The desire to recover and reconstruct could be stronger for certain types of heritage sites such as religious buildings or identity-related sites. However, the current evaluation mechanisms of World Heritage do not seem able to cope with such a situation since it presumes the protection of heritage in peacetime. Hence, these new phenomena pose a theoretical and practical challenge to the heritage community. ICOMOS, as the largest expert organization for heritage conservation, should therefore act proactively to address these issues. My paper will illustrate these challenges and possible ways forward.

**UNESCO Panel**  
**Non-formal and formal education for sustainable preservation of tangible and intangible cultural heritage: the UNESCO experience in Jordan.**

Panel moderated by UNESCO Amman Office

Panellists:

Giorgia Cesaro (UNESCO Amman Office)  
Sabrina Salis (UNESCO Amman Office)  
Christoph Wulf (Free University of Berlin)  
Petra National Trust (speaker *TBC*)  
Hani Hayajneh (Yarmouk University)

Formal and non-formal education plays a crucial role in the sustainable safeguarding of tangible and intangible cultural heritage. The Convention Concerning the Protection of World Cultural and Natural Heritage (UNESCO, 1972, Art. 27) encourages the development of educational material and programs aimed at strengthening awareness and preservation at heritage sites. Similarly, the 2003 Convention on the Safeguarding of the Intangible Cultural Heritage (UNESCO, 2003) clearly identifies formal and informal education as safeguarding measures to be adopted for the safeguarding of intangible cultural heritage (Art. 14).

In this context, UNESCO Amman has undertaken a number of initiatives aimed at enhancing the safeguarding of tangible and intangible cultural heritage in Jordan through formal and non-formal education.

Being inherited from one generation to the other through oral instructions, intangible cultural heritage (ICH) relies on intergenerational transmission for its safeguarding. However, due to increasing societal and economic challenges modes of transmissions have been placed under continuous strain. This poses a serious threat to the safeguarding of traditional heritage. In response to this challenge, the development of a specific module on intangible cultural heritage to be included as part of extra-curriculum activities in Jordanian schools was considered to be a strategic measure to ensure that this precious traditional heritage was included as part of the education system.

As part of the “Siq Stability” project, the UNESCO Office in Amman in collaboration with the Petra National Trust developed a specific educational curriculum focused on raising awareness on natural hazards present at the World Heritage Site of Petra. Aware that local/national participation and awareness can be the first step towards the protection of heritage sites exposed to natural risks, the curriculum was piloted through a number of awareness sessions which reached all six local communities around Petra. Awareness of natural risks preparedness and mitigation, mostly at the community level, can be the foundation for risk prevention at a site like Petra.

Sharing the approaches adopted by UNESCO in the field of culture and education, this panel examines the role played by formal and informal education activities in ensuring long-term safeguarding of cultural heritage. Specific reference will be made to the approaches adopted, as well as to the involvement of local stakeholders and communities in the sustainable safeguarding of cultural heritage.

## **Innovation for Authenticity of ancient Copper by electrochemical analysis of microparticles corrosion growing**

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Yarmouk University – Irbid  
Jordan

Authenticity, by electrochemical analysis, of growing micro and nanoparticles of corrosion is a vital process in study of ancient Lead and Copper, and it is extremely important in the archaeological Context. The more the known about the artifacts and its relation to the surrounding environment, the boarder interpretation on issues. Metals Authentication could help our understanding of not only their functions, but also other matters such as trade and economy. In fact, metal remains of the past that conform to contemporary aesthetics are often the most valuable. It gives artifacts their legal authenticity and archaeological significance. The artefacts collected from different sites in Jordan belonging to the Roman period revealed that these sites were extensively settled during the Roman and Byzantine periods. Considerable collections of metal corrosion, lead-based scales, Iron, and copper were uncovered. The analysis of the various metal corrosion samples correspond to a fragment of lead sarcophagus, and the second weight sample is from the Roman period. The data estimated from archaeological context was ca. 1500 years ago.

The study primarily aim to authenticate and date the samples. For this purpose, a series of electrochemical methods developed at Yarmouk University of applied Science and Art were used. These methods, based on the voltammetry of microparticles methodology for analyzing solid materials corrosion, involve non-destructive sampling and permit obtaining relevant information for Metal-study, conservation, restoration, and authentication in particular. It should be noted, however, that dating is obtained by comparing electrochemical data for the samples with lead samples of a known age used for archaeological referencing, which has been aged under identical environmental conditions.

## Archaeological science and the interdisciplinary research of Pre-Columbian Heritage in Brazil

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Archaeological research on pre-Columbian hunter-gatherers from South America has traditionally focused on macroscopic studies of stone artifacts and/or human remains. Scientific methods have been rarely applied in site formation analysis. The field of geoarchaeology involves the application of methods from the geosciences to understand how archaeological deposits formed during human occupation and how they were transformed after abandonment. Within geoarchaeology, micro-contextual approaches, combining microarchaeological techniques such as micromorphology, micro-FTIR, organic petrology among others, are offering a high-resolution understanding of the past. The combination of multiple techniques demands interdisciplinary collaborations bringing researchers from different fields and specialties working to a common goal. In this presentation, I will present the micro-contextual study of archaeological sites from central and coastal Brazil, discussing the need for more archaeological science as a means to strengthen the interaction of archaeology with other fields of knowledge in the research of pre-Columbian heritage.

### ***A brief biography***

*I am an archaeology professor at the Museum of Archaeology and Ethnology of the University of São Paulo (MAE/ USP), Brazil. I studied archaeology in Uruguay, moved to Brazil for a Master's degree and to Spain for a PhD with a double-diploma agreement between the Autonomous University of Barcelona and the University of Sao Paulo. During my post-graduate studies I specialized in one field of the archaeological sciences known as Geoarchaeology. This field compiles the use of methods and theory from the Geosciences in archaeological research. I applied several geoarchaeological techniques to study the formation processes of the monumental shell mounds (sambaquis) of the southern Brazilian coast. I became the first South American archaeologist to use micromorphology, or the study of undisturbed blocks of soil or sediment under the microscope, to study the formation of archaeological sites. Given the high-resolution of micromorphology to answer several*

*questions regarding the traces of humans in the sedimentary record, I was invited to join a wide diversity of research projects both in Brazil and abroad. I became a Humboldt fellow in 2014 and worked at the Institute for Archaeological Sciences of the University of Tübingen. I joined the Geoarchaeology working group and developed a micro-contextual study at the site of Lapa do Santo, one of the oldest and largest cemeteries in South American prehistory. I resumed the fellowship to take on a full professor position at the University of São Paulo in 2015. I teach both undergraduate and postgraduate courses in Brazilian and World prehistory, and on archaeological method and theory. With the financial aid of the FAPESP, I funded the Laboratory of Microarchaeology at MAE/USP, taking the first step into the development and consolidation of a center of microarchaeological studies in South America.*

## **Laboratory Evaluation of Salt Crystallization Inhibitor and Distilled Water to Prevent the Destruction of Monumental Stones in Petra - Jordan Due to Salt Damage**

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Salt weathering is considered as one of the most decisive contributors to the weathering of monumental stones because large parts of our cultural heritage were built from stone. Therefore, inhibiting or limiting the crystallization of these salts is an important step towards the preservation of our cultural heritage. In the past, a desalination of stone by using distilled water has been applied with considerably different success in order to mitigate the impact of salt weathering. A fairly new field of research is the use of salt crystallization inhibitors/modifiers. It has attracted interest for improving desalination as well as for reducing aggressiveness and damage potential of salt weathering mechanisms. Sandstone samples from the archaeological city of Petra were examined in order to evaluate the effectiveness of stone treatment with distilled water and crystallization inhibitor as a method to improve desalination of salt-loaded sandstone. Comparing the extraction of salts from stone samples with traditional methods using distilled water, and by the application of a crystallization inhibitor, it can be concluded that using sodium ferrocyanide as a crystallization inhibitor for both preventive measures of salt weathering and extraction of salts is superior to using a pure water to mitigate the salt-induced damage to porous materials. In addition, crystallization inhibitor has the ability to extract the salts from the depth of the samples up to their surface in the form of harmless efflorescences rather than harmful subflorescences.

## **The role of the Jordan Museum in the preservation of the cultural heritage of Jordan**

Yosha Alamri and Jihad Kefafi  
The Jordan Museum

The Jordan Museum is a national institution aims at the preservation and presentation of Jordan's cultural heritage. It is Jordan's “new” national museum of archaeology and history located at the heart of Jordan's capital, where East Amman meets its western half. The Museum is thus a major addition to Amman’s downtown cultural hub, which includes the Municipality and king Hussein cultural center. The general concept of the exhibition plan in the museum is “A Story Telling of Jordan: Land and People”, from the Palaeolithic to modern times. The museum galleries cover 1.5 million years of Jordanian history and archaeology.

Since its establishment, The Jordan museum was engaged in many projects in raising the awareness in the importance and uniqueness of the cultural heritage of Jordan among Jordanians, residences and visitors. Series of workshops, lectures and other activities were arranged inside the Jordan museum and in the field. The Jordan museum has successfully managed to protect and preserve many archaeological and cultural heritage features. Two dolmens were rescued from being converted in building material and were excavated and successfully reconstructed in the courtyard of the Jordan museum. A Hijazi railway wagon was brought from Maan to probably restored and displayed in the courtyard of the Jordan Museum. Recently, the Jordan museum organized in cooperation with DoA and the University of Bradford on the use of the 3D scanners in the documentation and enhancing the displays and exhibitions. Participants from DoA, Jordanian universities and from Palestinian Authority practiced on the use of the constructed light scanners as well as hand held light scanners .



## **Perpetuating the past for posterity: The case of the Early Islamic Palace at Shuqayra al-Gharbiyya, Karak**

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This paper summarizes the results of the first season of the Shuqayra Conservation Project (SCP-I) and suggests some ideas for potential future role in the site. Recent excavations at Shuqayra al-Gharbiyya, on the southern edge of the Karak Plateau (Mo'āb), have exposed parts of a palace dating to the Early Islamic Period (eight/ninth centuries AD). The exposed architecture show much affinity to the bewildering phenomenon of the Umayyad qusūr (obsolete, 'desert palaces'); therefore, this is the first qasr to be exposed in west-central Jordan.

The SCP-I took place in April 2017 and it focused on the large mosaic pavement discovered in the southern part of the palace. The project included a full documentation of the artistic aspects of the mosaic, full documentation of its state of preservation (for future management and intervention) and the actual physical condition of the most threatening damages that have affected this delicate artistic work. The preserved mosaic is currently covered with a thick layer of sand for protection.

The post-excavation/conservation end for the site represents a challenge. In the case of Shuqayra, there is a need to go beyond the concept of converting the site into a tourist destination. The cultural richness of the site, its close proximity to a well-populated area, and the availability of basic infrastructure can be used to render the palace into a development and cultural center. In particular, the education and municipal sectors can benefit from such rich heritage site. The paper endeavors to develop some thoughts that will help make Umayyad Shuqayra an important element in the modern socio-cultural fabric of the village landscape in southern Mo'āb. It is hoped that such thoughts will particularly help future generations to understand and appreciate the multiple dimensions of the cultural heritage and its contribution to cultural thinking.

**Archaeology in times of armed conflict, the Challenge of saving the cultural  
heritage of Yemen**

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As numerous risks and dangers threaten the cultural heritage of Yemen, this presentation will focus on the effect of the current war and the scale of destruction caused by the conflict. The impact of this war was also reflected in other issues such as looting, theft, illegal export and import and illicit trafficking of cultural property. This presentation will address all these issues, and will give an overview of the current status of the archaeological sites and monuments in Yemen.

## **Orient and Occident during the Second Half of the Second Millennium**

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The term Orient originated from Latin (Oriens) and has been identified as the east, from where the sun rises; meanwhile, the Occident is a term borrowed also from Latin (occidens) and translates as sunset. Orient also meant the area located to the east of Europe, especially east of the Mediterranean.

This paper aims at discussing the historical and archaeological relationship between orient and occident during the second half of the second millennium BCE (ca. 1550 - 1200 BCE). For example, it has been argued that during the end of the second millennium BCE some Mycenaeans migrated from their country to the Levant, known in literature as the Sea People, and established for themselves several cities at the Mediterranean coast. However, earlier in time and during the period between ca. 1600 and 1200 BCE Cypriot and Mycenaean goods were exported from the Occident to Orient. This is attested by the large amount of several kinds of goods such as the pottery utensils excavated at many archaeological sites in the Levant .

In other words, both orient and occident were in peaceful contact during the period from ca. 1600 - 1200 BCE. They exchanged not only goods but also people. Those people brought with them also the know-how and a new culture.

## **What is in a name? The description of plant names in three Ethiopian languages**

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This paper describes the plant names and botanical folk knowledge in three Ethiopian languages: Awangi (Cushitic, Afro-Asiatic), Gumuz (Koman, Nilo-Saharan) and Shinasha (Omotic, Afro-Asiatic). They are spoken in adjacent areas some six hundred kilometres north-west of Addis Ababa. The vernacular names of 260 wild plant species were tape-recorded, phonetically transcribed and morphologically and semantically analysed. Each plant species was photographed in its natural habitat for enriching the audio-visual documentation. The 'walk in the woods' informant/elicitation and inventory/interview techniques were widely applied. Voucher specimens were collected, pressed flat, dried, mounted on paper and taken to the National Herbarium of Addis Ababa University for determining their corresponding scientific names. The mixed techniques allowed the researcher to record adequate plant names and obtain extensive information on utility and folk classification.

The study primarily reiterates the important contribution of linguistics in ethnobotany. It attests that a good quality recording and transcription of plant vocabulary keeps the names as pronounced by native speakers. A closer description of plant names discloses the etymology of names and the interaction between traditional peoples and plant life. The morphological analysis enables the researcher to describe the internal structure of plant names and their relationship to other nouns in other languages. The semantic analysis allows the identification of both opaque and transparent names. In the transparent names, multidimensional information such as utilitarian value, complexion, growth duration, size, strength, odour, sound and colour are encoded. The result of the study also uncovers the culturally significant and non-significant plants. Among the Awi, Gumuz and Shinasha ethnolinguistic groups, culturally significant, indigenous and useful plants are given names. Conversely, those plants that are culturally insignificant, non-indigenous and less useful are unnamed.

## **Saving Jordan's Cultural Heritage by Combating Illicit Excavation and Trade in Antiquities**

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The depletion and destruction of Jordan's irreplaceable cultural heritage by illegal excavation and illicit trade in antiquities reached an alarming level. These illegal activities are harming Jordan's international image and depleting the country from an important asset that can be used for economic and social benefit to society at large. The escalation of illicit trade in antiquities and the grievous consequences motivated a team of researchers from Yarmouk University to initiate and conduct a two-phase research project to study this phenomenon and propose practical solutions. The first stage focused on the analysis, diagnosis and understanding of the multi-faceted phenomenon of illicit trade in antiquities, while the second phase focused on devising and proposing effective solutions to deal with the causes identified in the first phase. The main outputs of the first phase of the project are:

- production of a status report that includes the analysis of the various factors that govern the phenomenon of the illicit excavation and trade of antiquities in Jordan in addition to identifying the difficulties and obstacles .
- Production of awareness materials that can be used for enhancing public attitudes and understanding of the value of cultural heritage.
- Production of a revised version of the existing Antiquities Law that identifies the deficiencies and gaps of the law and proposes amendments and provisions that deal with illegal excavation and trade in antiquities.
- Training of staff from various concerned government and security departments on the implementation of legal and operational measures for combating illegal trade in antiquities.

The main outputs of the second phase are:

- Working on propositions' adoption by the responsible authorities (government and Parliament) of the amended antiquities law that was drafted in the first phase of the project .
- Building capacity at the concerned departments in the area of repatriation and restitution of stolen and illegally smuggled artifacts .
- Enhancing the security measures at the Jordanian museums by developing the description and specifications of a national artifacts inventory and documentation system, which effective tools in the fight against illicit trafficking of cultural property.