



# *Interactions, Trade, and Mobility in Archaeology*

**GAO International Conference 2021**

**DAY 1, 7<sup>th</sup> MAY 2021: SOCIAL  
INTERACTIONS**

## **SESSION 1—INTERACTIONS IN CONTEXT**

### **Micro-Regions and ‘The Great Divide’: Connectivity as a Concept in Cross-Disciplinary Research on Late Bronze Age and Early Iron Age Crete**

*Dominic Pollard, PhD Candidate (UCL)*

On Crete, the palace societies of the Bronze Age and the city-states or poleis of the later Classical era stand on either side of what Renfrew (1980) has dubbed the ‘Great Divide’ in Greek archaeology. Where the Minoan culture has long been the preserve of prehistorians, those studying the city-states have traditionally been drawn from classical history and archaeology, resulting in misaligned methodologies, theoretical frameworks, and research concerns. Research into the Early Iron Age (c.1100-700 BCE) has likewise suffered from its liminal position between these two more established traditions. In preparing my thesis, an archaeological, historical synthesis covering the Late Bronze Age (LBA) through to the dawn of the Classical period on Crete, it has therefore been necessary to identify and define novel theoretical perspectives capable of cross-cutting these traditional disciplinary divides. The concept of ‘connectivity’ as articulated by Horden and Purcell (2000) has provided a particularly useful model for analysis and interpretation. A scepticism of formalising typologies, of discrete periods and historical ruptures, and of restrictive terms such as ‘the’ city have all afforded modes of by-passing and transcending interpretive orthodoxies across my period of focus. Meanwhile, an emphasis on micro-regional interactions and connections across short and long distances has facilitated the construction of a more even-handed and continuous account of the shifting organisation and articulation of Cretan society from the LBA to the Classical era. This paper will outline some of the most fruitful applications of Horden and Purcell’s concept within my work, particularly regarding the ‘ecologising’ view of urban and state institutions, the distribution and organisation of settlement, and the formation of regional, political, and ethnic identities. It is argued that recent work in Mediterranean archaeology stressing the importance of connectivity, insularity, ecology and regionality offers much to the pursuit of innovative, cross-disciplinary research.

### **Connectivity and socio-economic interactions across time and space in southern Mauritania**

*Gonzalo Linares Matás, DPhil Candidate (University of Oxford)*

*Jonathan Lim, DPhil Candidate (University of Oxford)*

The integration of spatial analysis techniques and remote sensing offers a promising avenue for archaeological research into the arid landscapes of the West African Sahel. Amidst the dunes of the Aoukar Basin, the oasis town of Tedgaoust (Hodh El Gharbi, southern Mauritania) emerged as a key node of early Islamic trans-Saharan caravan routes. Located in a highland area towards the southern

end of the Taskast wadi, the caravansary prospered for centuries during the medieval period, until the Almoravid conquest near the end of the eleventh century AD. At the same time, the natural passageway of the wadi promoted considerable connectivity between the communities of the Dhar Tagant escarpment and those areas further south for over a millennium, as illustrated by the existence of morphological parallels in mortuary architecture and pre-Islamic ceramic assemblages. Nonetheless, the prehistoric past of the region remains relatively underexplored, hindering our understanding of the local and endogenous dynamics that favoured the emergence of this early Islamic town. Here we combine the analysis of very high-resolution multispectral satellite imagery and digital elevation models to infer regional mobility patterns and analyse the distribution of late prehistoric settlements and funerary monuments around Tedgaoust. Our aim is to identify processes of cultural and socio-economic interaction between communities at both ends of the Taskast wadi.

### **Intra-site interaction and ethnic identity formation: the case study of Tell Kazel**

*Dimitris Papageorgiou, PhD Candidate (National and Kapodistrian University of Athens)*

Fredrik Barth in his seminal work ‘Ethnic Groups and Boundaries’ introduced the notion of ‘boundaries’, as a contact zone along with two distinct identities are interacted. The use of terms like boundaries, borders and contact zones in many instances created a confusion about their nature. Many scholars have concentrated their effort trying to identify geographical zones, with clear-cut borders, across which interaction of different identities is taking place. As Barth himself argued, these boundaries are mainly social and social interaction is the most critical factor in the whole process of ethnic identity formation. Geographical boundaries between ethnic groups could be maintained intentionally in the framework of ethnic identity formation and expression. However, in many cases archaeological research produces a far more complex data-set. Ethnic identities can be negotiated in different social and geographical scales of interaction, like intra-, inter-site and regional. In this multi-scale framework, the cultural practices through which the ethnic identity is been formed and expressed will be investigated. Past research has focused in the identification of symbolic expression of ethnic identity through material culture. As material ethnic symbols could be used in many cases not related to processes of ethnic expression, some scholars proposed that ethnic identity formation is based in cultural practices, highlighting the ethnic similarities and differences between groups. The site of Tell Kazel, (Akkar plain, Syria), studied as part of my doctoral research, has been interpreted as a settlement occupied in the early 12th century BC by various local and foreign population groups. Through the proposed methodology, adopting a more flexible methodology and multi-scale analysis, archaeological data from the site will be analyzed, trying to identify processes of identity formation, expression and interaction between various population groups inside the settlement.

## **SESSION 2—MATTERS OF AGENCY AND POWER**

### **Emerging identities in Archaic Macedonia: An agency-based argument against the oversimplification of complex social realities.**

*Christos Giamakis, PhD Candidate (University of Sheffield)*

The role of social interactions in the formation of identities has indeed occupied the centre stage of recent theoretical debates. Yet, these developments have yet to be combined with the concept of agency especially across areas traditionally regarded as ‘peripheral’ to the ancient Greek world. The aim of this paper is to examine the ways in which social interactions shaped and were shaped by different identities as well as the role of agency in the material manifestation of these phenomena by focussing on the

Archaic Macedonian kingdom (600-480 BC). More specifically, the cemeteries of Archontiko and Sindos will act as cases in point, as the two most well-preserved sites across the region. Grave goods, tomb types, burial rites and the topography of the cemeteries will all be studied concomitantly as part of the same ontology influencing social interactions and ultimately the creation of multiple identities. Past approaches have treated this region as a politically unified one, a unity which was passively reflected on the material discovered there. Moving beyond such cultural-historical approaches, the present paper will emphasise the agency of the local communities in actively employing material culture in order to strengthen the potency of certain kinds of identities at the expense of others. Drawing upon both post-processual and the more recent ‘ontological turn’ in archaeology, it will be argued that instead of an overreliance on a dominant umbrella term when describing the populations inhabiting these regions, more emphasis should be given at the active role of both people and material culture at a local level. Therefore, a contribution will be made towards exploring local and regional networks, intra and inter social interactions and the subsequent emergence of identities.

### **Symbols in Motion: a semiotic approach to networks of interaction**

*Mikel Wein, PhD Candidate (University of St. Andrews)*

The question of how Archaic power centers in central Italy came to control the region, and in particular how Rome ultimately rose to dominance, may best be addressed by bringing together methodologies that track the movement of materials. Movement of objects is often our best evidence of the co-operation, conflict, development, and transformation of these groups. Methodologies such as Social Network Analysis, for example as used by Blake to examine the development of Bronze Age communities in central Italy, can reveal the directionality of communications and importance of a site. Route analysis in GIS and network analysis, for example as developed by Fulminante, Prignano, and colleagues for sites in Etruria and Latium Vetus, can elucidate how polities interacted with the landscape to develop transportation routes. I propose adding another methodology; specifically, archaeological semiotics, which can be used to incorporate how individuals within spatial networks transform the material that moves among sites. Piercian inspired archaeological semiotics forms the base of Knappett’s “situated semiotics” and Lindström, Kull, and Palang’s approach to landscape semiotics. In this paper, I will present a trial analysis which uses Piercian semiotic methods to examine a range of decorative antefixes, and the peoples who produced them, while accounting for known and proposed transportation networks within central Italy. This analysis will address questions about the lasting effects nodes within a network have on antefix designs; it will place emphasis on the Piercian concept of the Interpretant and the role individuals play in shaping the objects that are transmitted through regional networks and the landscapes they exist within. By viewing these transmissions through a semiotic lens, “through the looking glass” as Bauer put it, I hope to address questions of intentionality and the growth of power centers in central Italy through the lens of a prominent architectural decoration.

## **The introduction and spread of a new technology: an agent-based modelling attempt**

*Jiyoung Park, PhD Candidate (Seoul National University)*

*Matthew Conte, PhD Candidate (Seoul National University)*

*Yongje Oh, PhD Candidate (Seoul National University)*

The spread of newly introduced technologies as a significant cause of socio-political and economic change has been a major topic of archaeological research. Researchers have recognized that technological change cannot easily be reduced to the simple processes of diffusion vs. migration, but often involves complex mechanisms influenced by socio-cultural, political, and environmental conditions as well as economic decision-making. Much research has focused on initial interactions between introducers and receivers and the role of elites and craftspeople in introducing new technologies to communities. However, the rate of the spread of innovation, temporal gaps between the time of introduction and widespread acceptance of a technology, and the formation of technological boundaries may differ according to several variables. We suggest that agent-based modelling may provide a useful tool for exploring the processes that contribute to the adoption of newly introduced technologies. While agent-based modelling grossly simplifies the complexities of real-life socio-economic phenomena, this is also one of its strengths: by allowing us to manipulate and observe selected variables in isolation, we can begin to tease apart the amalgam of factors involved in the community-level adoption of a newly introduced technology.

## **Between Ἀρετή and Virtus: Establishing Common Ground in Late Hellenistic Athenian Portraiture**

*Georgios Koukovasilis, PhD Candidate (University of Cambridge)*

In the course of the last two centuries of the pre-Christian era, Hellenistic sculpture displays intensive transitions and drastic alterations. This shift echoes correspondingly the closing days of the Hellenistic world, as this world was irreversibly affected by the eventual predominance of the Imperium Romanum. The sculptural output of Athens, this cultural powerhouse of Hellenism, was not unaffected by these developments. Late Hellenistic Athenian portraits are highly eclectic in character, combining Hellenistic and classicizing elements with a novel, allegedly, Republican-oriented realism (Buschor 1949; Hafner 1954). The strong preference for realistic styles in Athenian portraiture has been perceived as a token of a systematical acculturation to Roman values and ethics. Adopting top-down approaches, prominent scholars have ventured to explain the ways veristic/realistic styles correlate with the political views or nationality of the sitters behind the portraits in question suggesting that images of this sort probably represented Romans or pro-Roman, philorhomaioi, local Greeks (Harrison 1953; Stewart 1979; Smith 1988). This paper aims to add to our understanding of this striking corpus by arguing that extrapolating "nationalist" stylistic traits is potentially slippery territory; that different forms, levels and direction of allegiance would have been displayed at different times, to different audiences. Spurred by the notion of anchoring (Sluiter 2016; Heijnen 2018; Klooster and N.I. Kuin (eds.) 2020), this paper sets out to explore the case study of late Hellenistic Athenian sculpture vis-à-vis the ways self-presentation practices created common ground between Greece and her conqueror. To pin down the visual impact of late Hellenistic Athenian portraiture, and the cultural implications thereof, I draw on sculptures and their archaeology as well as on contemporary coinage and epigraphy. I am asking how private individuals, in different ways, brought Greek and Roman visual languages into conversation to situate themselves in history, and within complex power dynamics.

## **SESSION 3—INTERACTIONS OF SOCIAL PRACTICES**

### **Isotopic evidence of coastal-highland interactions during a ritual killing event in the Virú Valley, Peru**

*Corrie Hyland, DPhil Candidate (University of Oxford)*

This research presents the strongest isotopic evidence yet found for the interaction between the coastal and highland populations of Northern Peru. Isotopic evidence of the life histories of ritually killed children has revealed that while many of the children lived locally on the coast, others have evidence of living in the intermediate and highland elevations. Stable carbon, nitrogen and sulfur isotope analysis provided an examination of their diet in the months and years before their deaths, while strontium isotope analysis revealed their likely place of residence during early childhood. These findings further support our current understanding of the increased levels of interactions between coastal and highland populations during the Late Middle Horizon, a period in which the established state-level societies of the coast more frequently interacted with their Highland neighbours to the east.

### **Social Assemblages of Things: Drinking practices and interregional interaction in the Late Bronze Age east Mediterranean**

*Jan Sienkiewicz, PhD Candidate (University of Cambridge)*

If there is any unifying theme in the Mediterranean past, it is the constant movement of people and objects across the sea, which occurred, at an interregional end of its scale, along often geographically determined maritime routes. One such route connects the Aegean with the eastern Mediterranean via the islands of Rhodes and Cyprus. In this case, what is the end product of many archaeological analyses, the assertion of ‘contacts’ or ‘interaction’, is almost superfluous, as their existence can be safely taken for granted. Indeed, the growing corpus of the Late Bronze Age Cypriot objects on Rhodes merely confirms what had already been accepted as a fact within the scholarship, namely the connecting role of this island in the well-documented trade between the Aegean and Cyprus. Meanwhile, the attested ‘contacts’ remain an abstract term – it is not clear what they entailed and what was their nature. Likewise, Rhodes and Cyprus are treated as actual entities in these ‘contacts’ – the question about individuals and groups involved has not been really addressed.

This paper aims to show the usefulness of a practice-based approach in getting to grips with the agents and nature of inter-regional interactions. Firstly, it will show how certain social groups on Rhodes and Cyprus deposited identical pottery sets in their tombs – sets that comprise four distinct shapes of vessels imported from the Greek mainland. Secondly, it will be argued that this striking pattern attests to a shared understanding of the functional relationship between these vessels, reflecting the existence of a formalised drinking practice. Ultimately, the development of this practice will be suggested to be a result of in-person interactions, and its distribution to be an index of an inter-regional network of affluent groups from coastal, well-connected settlements.

### **Identity and Oisyme: Greco-Thracian Connectivity in the Archaic North Aegean**

*Dr Meagan Mangum, Early Career Researcher*

On the south side of Eleutheres Bay in Northern Greece, stands a small hill crowned with boulders. In the Archaic and Classical Periods, it was the acropolis of Oisyme, a sub-colony of the Thasos, itself

colonised from Paros in the late 7th century BC. Identified as the Homeric Aisyme home of Casteniera, wife of Priam and mother of Gorgythion, the site was occupied from the Early Iron Age (EIA) on. We have no concrete name for the specific tribe, people or settlement of this era, just the vague appellation 'Thracian'. The Archaic/Classical era deity worshiped there is also uncertain, although dedications and spatial organisation suggest a female deity with kotouphoric, chthonic attributes. Excavators suggested the deity may Athena Poliochos based on parallels to her Sanctuary at Thasos. Recent research at Thasos, however, offers an alternative interpretation based on pre-colonial Thracian practices, such as those seen at the urban Temples of Heracles and Artemis. A similar practice may have occurred at nearby Neapolis where the Parthenos, identified as a Hellenized version of the Thracian Artemis or Bendis, was the primary deity. The use and preservation of pre-colonial structures at Oisyme through the Roman era tied the settlement to its fictional and physical past, and suggests a similar blending of Greek and Thracian practice. Locally such a merger could have aided the populations to construct a single, coherent polis identity, the Oisymians of 'deep-soiled Thrace' (Iliad 11.222). Seen from a micro-regional level, this activity may provide evidence of a shared religious practice that bound the members of the Thasian Peraia into a supra-civic community. This paper argues that the Oisymian acropolis, when viewed diachronically, demonstrates a complex semiotics that communicated shaped their self-perception as citizens and worshippers in a region where borders between Thracian and Greek identity were fluid and mercurial.

## **DAY 2, 8<sup>th</sup> MAY 2021: ECONOMY AND TRADE**

### **SESSION 1—CERAMICS AND TRADING NETWORKS**

#### **A Twilight Zone in the Adriatic-Ionian basin. Changes in material culture in Southern Apulia (3rd - 6th century)**

*Carlo De Mitri, Postdoc Researcher (Vrije Univrsiteit Amsterdam)*

The aim of this paper is the study of the networks and trade routes that affected the Salento peninsula between the late Roman and the beginning of Byzantine period. These analysis are based on data from the material culture, mainly pottery.

Some topological maps have been created through the application of methodologies used in the Social Network Analysis (SNA) and in the Actor Network Theory (ANT). Also the UCINET software was usefull to study ceramic data and to highlight the commercial landscape in the analysed periods.

In the Late Imperial Age, up to the beginning of the 4th Century DC, the Salento peninsula appears integrated into an articulated network in which it acts as a transit area, almost a bridge, between the Adriatic Sea and the Aegean-Eastern Mediterranean. The Brindisi-Durres axis constitutes an important link around which gravitate a series of contacts between these two shores and the Adriatic basin; especially the East coast seems to be more dynamic into the trade. The analysis of the pottery produced in the following period, the Late Antiquity, highlights how the center of gravity of trade are in a more Southern sector, coinciding with the Straits of Otranto. Moreover the route of commercial penetration into the Adriatic sea seems to shift towards the West, along the coasts of the Italian Peninsula.

## **Recontextualising the interactions, trade and mobility between Cyprus and Sardinia from the end of LBA to the IA.**

*Rafail Charalampous, MA*

The proposed paper constitutes part of my master's dissertation titled "Similarities, differences and trade between Cyprus and Sardinia during the Bronze Age", which was discussed at the University of Sassari on the 13th of October 2020. This paper presents the results of a literature review-based study, which examines the spatial and chronological distribution of Cypriot imports to Sardinia and Sardinian imports to Cyprus, mainly based on the circulation of ceramics, metals and metal objects. The relations between Cyprus and Sardinia have received extensive scholar attention, but the driving forces behind their relations remain poorly understood. Undoubtedly, their dynamics of exchange is only a part of the complex and constantly changing maritime trade networks. In the last years of the thirteenth century BC and the early twelfth century BC, a series of climatic changes and socio-political events led the Mediterranean world to instability and the most dynamic politico-economic regimes of the LBA system to decline. This disorganisation of the politico-economic system has led Cyprus to implement a series of socio-political changes and had to manage new emerging contacts with abroad (e.g. central Mediterranean). On the contrary, despite the fact that the profound transformation that crisis had caused, the nuragic (or post-nuragic) communities seem to have reached their apogee. In this context of demographic and wealth accumulation an unprecedented extroversion of Sardinia is attested from the presence of nuragic pottery at important port sites in the Mediterranean world and later in the Iberian and Italian peninsula. This research will focus on the role of the internal socio-political changes which have guided the gradual increase of the contacts between Cyprus and Sardinia during the end of the LBA and the beginning of the IA.

## **Beyond numbers: An analytical investigation of a ceramic assemblage dating from the mid.12th to the 16th c. from the site of Polis Chrysochous, Cyprus.**

*Christiana Kelepeshi, MSc*

The proposed paper constitutes part of my master's dissertation and contributes to the wider discussion on Cypriot medieval glazed ceramics by presenting the results of the analyses of samples from a domestic context, namely a medieval domestic structure located north of the basilica E.G0 at the site of Polis Chrysochous-Petrerades, Cyprus. The analytical investigation of these sherds allowed the reconstruction of the chaîne opératoires as well as the empirical knowledge linked to the production of these wares within the complex sociocultural context of the period and the wider glazing technological traditions of the neighbouring regions. Cypriot glazed tablewares spanning from the 13th (Plain Incised-Sgraffito Ware, One Colour Incised-Sgraffito, Brown and Green Incised-Sgraffito, Brown and Green Sgraffito, Slip Painted) to the 16th c. (Green Painted Ware), as well as imported Aegean wares of the mid. 12th- 13th c. (Green and Brown Painted and Incised-Sgraffito), were selected along with a small number of glazed and unglazed coarse wares in order to investigate their potential variation in terms of production technology.

Scanning electron microscopy coupled with energy dispersive spectroscopy (SEM-EDS) was employed to establish a first characterisation of the ceramic sherds selected, in terms of the chemical composition and mineralogy of both their fabric, slip and glaze layers. The results of this study revealed the diverse character of the assemblage which contains products of different local workshops that are characterised by different glaze manufacturing methods and slip traditions. Moving beyond numbers, this paper demonstrates the active participation of Arsinoe within the regional and interregional trading routes of the period, shedding light on the later history of the site which until now had remained limitedly

explored. This study constitutes only the first step towards gaining a better understanding of the social dynamics that characterised the medieval community of Arsinoe.

## **SESSION 2—ASPECTS OF INTER-REGIONAL TRADE AND CONNECTIVITY**

### **Lapis lazuli in Ancient Egypt: between trade and ideological values**

*Dr Daniela Galazzo, Postdoc Researcher (Université de la Sorbonne, Paris IV)*

Lapis lazuli, or *xsbd* in Egypt, is a semiprecious stone mined in Badakhshan (in north eastern Afghanistan) that was highly prized throughout the Levant. It first appeared in Egypt during the 4th millennium as beads in Predynastic burials and after it was regularly used throughout Egyptian history in jewellery and for small objects, such as amulets, beads and inlays. Two are the main typologies to which we can relate the Egyptian texts mentioning lapis lazuli: the first one concerns the use of this stone in exchanges and international relations, while the second one is characterized by the religious use of the stone. One of the first written documents testifying the commercial relationship between Egypt and Asia and mentioning lapis lazuli is the Palermo Stone. During the Middle Kingdom, the Tod Treasure represents the most consistent set of objects made of this stone found in Egypt, in a presumably ritual context. The New Kingdom otherwise is the period during which the expansionist policy led by the pharaohs determines the affluence of exotic products and precious stones in Egypt, in the form of tributes or gifts from foreign countries, as can be seen in the scenes of tributes and offerings painted or engraved on the walls of temples and tombs.

### **Throw-away Packaging or Bulk Trade? A Reflection on Interregional Perfume Trade in the Late Geometric and Early Archaic period**

*Daniela Greger, PhD Candidate (University of Lausanne)*

Perfumes were an important part of interregional trade in the Late Geometric and Early Archaic period. The high frequency of imported unguent vessels in Late Geometric to Early Archaic funerary contexts, such as the San Marzano necropolis in Pithekoussai, suggests that foreign perfume containers and their contents were available on short notice for a large part of the population. The circumstances of shipping, in particular the interdependence of the distribution of vases and perfume, and the embeddedness of unguent trade in a larger economic system are still debated.

The value attributed to the vessel plays a central role in the reconstruction of perfume trade and its organization. Perfume was a nondurable good and needed to be regularly replaced, whereas pottery could be reused. Unguent vessels could have been solely imported for their content, in which case they may have functioned as disposable packaging. If they were however considered desirable objects in their own right, as it is often assumed for decorated pottery, they may well have been kept and replenished when empty.

Refill perfume would have been exchanged in bulk and was probably at least partially imported, as the local perfume production was still of small scale. Perfume in space-efficient bulk vessels may have been transported alongside filled unguent vessels and would have added further complexity to long-distance trade.

## **The importance of Baetic oil in the Roman world and its reflection in spatial analysis archaeology**

*María Teresa de Luque Morales, PhD Candidate (University of Córdoba)*

*Eusebio Jesús Medina Luque, MA (University of Córdoba)*

Spatial analysis archaeology is a discipline that has been used since the 1970s in our field of study: History. We will use the theoretical basis of this discipline to answer a series of questions about trade in Baetica in the High Imperial period. The tool on which we will base our analysis is the Geographic Information System (GIS), which allows the analysis, management or representation of space and the phenomena that occur in it. Nowadays, it is an instrument for the reconstruction of space both in the past and in the present. Understanding the environment in other eras, is a fundamental pillar for our future research, as it allows us to understand how societies of the past lived.

Among the main economic activities carried out in Roman Baetica, we will focus on those related to olive oil. The olive grove was a very widespread crop in this area, as it required little work and care and provided a significant income for all those who were involved in any activity related to it. From the 1st century AD onwards, the export of olive oil is very well documented. Therefore, through the epigraphic sources preserved in our study area (mercatores, negotiatores, diffusores olearii), we will focus on analysing the importance of this activity and the social group to which these oil-related figures belonged. Likewise, the GIS will help us to reflect more clearly where most of the sources we will use for our work come from.

## **SESSION 3—SOCIAL AND ECONOMIC PATTERNS OF MOBILITY**

### **Archaeology of Trade in the East African Coast: An Investigation on commercial approach of the Mozambique Island, CE 1100 – 1800.**

*Celso Simbine, MA Student (Eduardo Mondlane University)*

During the first half of the first millennium, precisely between 1st and 5th CE, the east African coast of the Indian Ocean developed a network system of the long-distance trade for exchange of trade goods. Initially this commerce was limited in the northernmost of the east African coast from Ras Hafun in Somalia to Kilwa in Tanzania and later in the second half of the first millennium from 7th century CE onward, the network system of the long-distance trade extended towards southernmost of Mozambique coast. The investigation of trade interconnectivity and exchanges that took place in this region was based on archaeological and ethnoarchaeological data and also chronicles written by Asiatic and Europeans merchant travellers. This paper has interest to discuss archaeological data related to the regional and international trade activities through the Indian Ocean to understand the commercial impacts in the local identities, and material culture of the Mozambique Island. It also brings a summarized literature review of early and recent research on trade centres in the east African coast and evaluates its importance to a wider academic debate on political and economic organization and social interconnectivity in the process of Indian Ocean trade and exchange.

Keywords: Archaeology, Exchange, Interconnectivity and Mozambique Island

## **The antiquity of trade, and exchange in precolonial Mberengwa: Archaeological and ethnohistorical insights from the second millennium AD.**

*Dr Robert T. Nyamushosho, Postdoc Researcher (University of Cape Town)*

This paper weaves together the archaeology and anthropology of trade and exchange in precolonial Mberengwa, south-central Zimbabwe using an Afropolitan viewpoint that is informed by Shona practices, and epistemologies of everyday life. The focus is on material goods, people, services, and knowledge that were circulated in this gold-belt territory, extending to the broader inlands, and the Indian ocean coastal world. By extension, the paper explores the impact of these circulations on socio-political and economic transformations that birthed complexity, state formation and urbanism in southern Zambezia. As a case study of the Zimbabwe culture societies who occupied Mberengwa during the second millennium CE, the outcome suggests a dynamic nature of reciprocity, redistribution, and market exchange. This in turn reconfigures position of Zimbabwe culture societies in ancient Mberengwa and other gold-belt territories as independent players in local, regional, and global networks.

This study intends to combine the limited evidence provided by the Periplus on the Gulf with the archaeological evidence of trade in the first century AD. The author of the Periplus was well versed and travelled within the Red Sea. However, their testimony on the trade in the Persian Gulf is often written off due to some glaring inaccuracies. The Gulf may have even played a greater role than the Red Sea in the Indian Ocean and Mediterranean trade systems. This lack of information seems to stem from the past Romano-centric approaches. The Gulf was a thriving system in its own right, it was not simply feeding back into the Roman core. In examining key trading sites, such as Mleiha, ed-Dur and Dibba it becomes clear how many forces were at work in this system. What appears to emerge is a trading system which was seemingly dominated by the Parthians, Palmyrenes and Indians. The material finds are even more mixed than this. In the sites of the lower Gulf, Characene, Parthian, Roman and Indian finds are all present. It was a closed system to Periplus author. Now this does not mean that this was a trade network detached from the Roman Mediterranean system. Roman goods and wares were clearly moving within the Gulf, even if they are not being carried by Roman merchants. The significant sites both archaeologically and mentioned in the literature show the level of interconnectivity. Not only were goods moving from the head of the Gulf all the way to the southern parts of the Arabian Peninsula, but they were coming in from the Red Sea and from India.

### **What can the Periplus Maris Erythraei tell us about trade in the Gulf and what are its limitations? To what degree are the conclusions it suggests supported by archaeological evidence?**

*Will Wright, MSt Student (University of Oxford)*

This study intends to combine the limited evidence provided by the Periplus on the Gulf with the archaeological evidence of trade in the first century AD. The author of the Periplus was well versed and travelled within the Red Sea. However, their testimony on the trade in the Persian Gulf is often written off due to some glaring inaccuracies. The Gulf may have even played a greater role than the Red Sea in the Indian Ocean and Mediterranean trade systems. This lack of information seems to stem from the past Romano-centric approaches. The Gulf was a thriving system in its own right, it was not simply feeding back into the Roman core. In examining key trading sites, such as Mleiha, ed-Dur and Dibba it becomes clear how many forces were at work in this system. What appears to emerge is a trading system which was seemingly dominated by the Parthians, Palmyrenes and Indians. The material finds are even more mixed than this. In the sites of the lower Gulf, Characene, Parthian, Roman and Indian finds are all present. It was a closed system to Periplus author. Now this does not mean that this was a trade

network detached from the Roman Mediterranean system. Roman goods and wares were clearly moving within the Gulf, even if they are not being carried by Roman merchants. The significant sites both archaeologically and mentioned in the literature show the level of interconnectivity. Not only were goods moving from the head of the Gulf all the way to the southern parts of the Arabian Peninsula, but they were coming in from the Red Sea and from India.

### **Temples as Arteries of Trade and Economic Interaction: A Case Study of the Gurjara-Pratihara Temples of North India**

*Dr Shriya Gautam, Independent Researcher (Speaking Archaeologically)*

Religious structures in India were almost always built along or close to trade routes. One of the main reasons for this was the use of sites of religious importance as a place to stay and as makeshift banks by ancient traders, similar to how the caravanserais came to be used in late Medieval times and Mughal India (cf. Frankopan, 2015; Sharma 2010). Religious sites, thus, became arteries of trade, where traders could deposit and withdraw money from in lieu of traditional bills of exchange called hundis, especially if they were travelling long distances and found it difficult to carry cash. As a result, constructing temples has been favoured in several ancient Indian treatises, including the Arthashastra, that advises rulers to invest in building and commissioning temples along the major routes. With this hypothesis, that has been stated by several scholars of Ancient and Early Medieval India (cf. Sharma, 2010; Thapar, 2004; Frankopan, 2015), this research is based on the survey of twelve such temples attributed to the Gurjara Pratihara Dynasty of North India (circa 8th to 12th century CE). It seeks to evaluate whether this hypothesis was actually true for all religious sites. It also seeks to place these temples along the trade routes of Ancient India to establish whether sufficient archaeological evidence exists to assert that temples served as points of economic and social contact in Early Medieval India. For the purpose of this paper, the sites were surveyed, documented and studied in juxtaposition to ancient records of trade routes for a period of four years and its results shall be discussed in detail in this paper.

## **DAY 3, 9<sup>th</sup> MAY 2021: MARITIME NETWORKS**

### **SESSION 1—HARBOURS AS MEANS OF INTERACTION**

#### **Roman Harbours on the Eastern Adriatic Coast.**

*Jelena Čelebić, PhD Candidate (Koç University)*

Harbors were the heart of ancient trade, maritime gates toward unknown worlds and people. They were strictly dependent on the agricultural productions of the territories to which they belonged, and, on the other hand, directly connected to maritime and fluvial activities. The activity of the harbors, thanks to their favorable environmental conditions, continues for centuries until their destruction.

Due to the sea currents and numerous islands, maritime traffic at the Adriatic in Antiquity mainly followed the Eastern Adriatic coast, which means that the existence of appropriate harbors was indispensable.

Unlike big Roman harbor installations made from hydraulic concrete, characteristic for bigger harbor cities, harbors from Imperial period on Eastern Adriatic coast are adapted to the commercial needs of the region, but also to the geography and the natural conditions of the places where they were built.

The first type of harbors on the Adriatic coast is characterized by natural bays, beaches and other places that were protected and suitable for mooring, where the installations followed coastal configuration (Vis, Kolent, Polače etc.). The second type is characterized by more complex built structures (Zaton, Biograd, Polačine, Janice, Savurdija, Umag, Budava, Vilžana, Veštar etc). The exact location of some of the harbors mentioned by historical sources is still unknown (for example, the harbor of Salona).

In this study we also tried to identify correlations between hillforts, settlements above them and possible harbors in the Bay of Kotor and the surroundings. For this test was used the viewshed and intervisibility of QGIS to identify potential visual connections.

The study of the system of harbors in the Eastern Adriatic coast could yield a lot of new information about the disposition of production centers, maritime routes, the villae maritimae and about the provenience of the products that were imported and exported.

### **From harbour regionalism to a harbour koine. Technology, architecture and function in harbour networks of Roman Mediterranean.**

*Ioannis Nakas, PhD Candidate (University of Birmingham)*

During the Roman period and thanks to the pax romana and the financial development of the region a multitude of harbours of the Mediterranean developed into unique centres of commerce, interaction and exchange, but also of urbanism and monumentality. The importance of these harbours is clearly reflected in their size, lavishness and widespread use of new technologies (maritime concrete, dredging), often sponsored by ambitious rulers, state officials or the imperial family. This constitutes a harbour koine, a network of cleverly designed ship havens that served the commercial networks of the period and offered adequate facilities for the accommodation of ships, cargoes and people.

But a closer look to a great number of harbour sites reveals a much more complicated image: many harbours remained relatively poor and “obsolete” in terms of harbours works, infrastructures and technology employed. Each of these harbours presents a unique configuration, related to regional conditions and local needs and dynamics. This constitutes what can be determined as a harbour regionalism that contradicts the harbour koine described above. This paper examines these two different realities of the Roman harbours of the Mediterranean and explores the ways these interacted with each other and the ways this dialectic relationship influenced contemporary commerce and seamanship.

### **The harbour of Lechaion in Corinth, Greece: Submerged Timber Structures of the Late Roman and Early Byzantine Period.**

*Panagiotis Athanasopoulos, PhD Candidate (University of Ljubljana)*

In recent years, ancient harbour studies have developed significantly within the archaeological and academic community. In this context, extensive excavations at the site of Lechaion from 2013 to 2018 by the Lechaion Harbour Project brought to light, among many other harbour related structures, submerged remains of exceptionally well preserved wooden constructions. The remains consist of several wooden formworks and posts, all forming supplementary piers or jetties to the existing massive stone structures, and constitute a unique archaeological find in the Greek seas.

Corinth lies on the northeastern part of the Peloponnese peninsula, having access to both eastern and western Mediterranean. That particular geographical advantage partly explains the influence the city had on all known maritime networks and trading routes of the ancient Mediterranean Sea. The harbour of Lechaion was one of the two ports of the ancient city located on the shores of the Corinthian Gulf. The first phase of the harbour construction is placed at around 600 BC and recent evidence suggests that the harbour remained in use until the 15th century AD. That extensive historical presence of the Lechaion harbour and its almost uninterrupted use for many centuries signifies a highly dynamic setting in terms of the geological, historical and archaeological transformations.

The lecture aims at presenting the preliminary results of the excavations undertaken at the wooden remains and addressing the issues raised regarding the chronology and the advanced and costly building techniques employed in their construction. In addition, the paper shall present the ongoing condition assessment of the wooden material and discuss the long term preservation plans applied in such shallow and environmentally active waters. Future research goals will also be presented as part of an interdisciplinary research scheme scheduled to provide a coherent understanding of the function and diachronic use of the harbour.

## **SESSION 2—RECENT ADVANCEMENTS IN MARITIME ARCHAEOLOGY**

### ***Crete and Maritime Archaeology: A Century of Discoveries.***

*Dimitris Karampas (DPhil Candidate, University of Oxford)*

*Dr Theotokis Theodoulou (Ephorate of Underwater Antiquities—Department of Crete)*

Crete has always been a point of reference for the political and economic developments in the Eastern Mediterranean. From antiquity to modern times, the island's strategic location acted as a valuable instrument of interaction, economic growth, and even imperialism. Simultaneously, the diachronic importance of the sea in the lives of Cretans formed a unique cultural identity that goes on till this day. Archaeological remains from various periods are scattered all around the coasts of the island reminding us how crucial sea was for islander's lives. But what kind of information can be extracted from studying the coastal and underwater archaeology of the island?

The last century set the foundations for the development of the discipline of Maritime archaeology in general and Crete was inevitably included to the process. The 21st century seems to be holding the potential for outstanding achievements. From the pioneering work of John Leatham and Sinclair Hood in the '50s to the first shipwreck explorations by Cousteau in the '70s to the foundation of the Ephorate of Underwater Antiquities/Department of Crete in 2010, Cretan Maritime archaeology has developed and advanced substantially. This paper will investigate the history of the discipline and shed light on the crucial role of some of the most important projects that took place along the coasts and seas of Crete. The aim is to present their significance in interpreting Cretan harbours as centres of commerce and interaction and shipwrecks as instruments of maritime and trade network analysis. Finally, some of the newly results of the ongoing underwater archaeological project in Ancient Olous (Elounda) will be presented.

## **Cultural trafficking in Greece: new perspectives on the authenticity of the Aegean lead boat models.**

*Panos Tzouvaras, PhD Candidate (University of Southampton)*

The looting of Early Cycladic cemeteries and the trafficking of antiquities is a bleak story that goes back before the establishment of the Independence of Greece since at least the 18th century. Despite the establishment of the Greek Archaeological Service in 1833, and the implementation of important legislation countering acts of looting, illicit trafficking of antiquities was still conducted invariably, leading to the destruction of archaeological sites and the loss of priceless contextual information and provenance. Correspondence from 1929 between R. M. Dawkins and Sir Arthur Evans recounts a similar event. Dawkins purchased in 1909 a few lead boat models and marble, folded-arm figurines of Kapsala variety; these were allegedly from Naxos and constituted part of a cist-tomb's grave goods. As for their authenticity, Dawkins notes "there is no doubt at all". However, not long after Collin Renfrew published the objects in 1967, their authenticity was questioned and more recently they have been persuasively characterised as fakes by Susan Sherratt (2000:102).

This paper is part of the author's doctoral research. In 2020 the author recorded the three lead boat models and the two marble figurines from Naxos stored in the Ashmolean Museum of Oxford and the lead boat in the World Museum of Liverpool (originally from the collection of R. C. Bosanquet). Through archival research and the implementation of the novel Highlight-Reflectance Transformation Imaging (H-RTI) method of recording, an in-depth analysis became possible, revealing aspects that can prove that they are in fact genuine. Additionally, through computational mathematics, the original form of the boats has been estimated, allowing morphological comparisons and the identification of affinities, with a database of more than 250 Neolithic - Early Bronze Age boat representations, further negating previous arguments. Moreover, their acquisition before 1914 -a landmark date for looted antiquities- advocates the prospect of their authenticity. Finally, a recent examination on three of the objects, conducted by the Ashmolean Museum's Conservation Department, coupled with new evidence from the island of Sifnos, consolidate the author's argument. Thereby, a final attempt is ventured so as to 'liberate' these artefacts from the stigma of forgery, pinpoint the salient Early Cycladic craftsmanship and grant them the public appreciation that any work of art deserves; most importantly, though, to recognise the value these objects can bring to scholarship and how can they enhance our knowledge for the Early Bronze Age boatbuilding traditions of the Aegean.

## **Problematising Cult Transmission in the Ancient Saronic Gulf: Towards an Integrated Terrestrial and Maritime Network Model.**

*Michael Alejandro Delacruz, PhD Candidate (University of Oxford)*

This paper demonstrates a multi-method approach to modelling an integrated terrestrial and maritime network to simulate cultic development and interaction in the Saronic Gulf (6C – 1C BCE). The use of network models to analyse changes in the sacred landscape over time has largely been focused on terrestrial applications. In a maritime context, while node/arc representations may be highly suitable for transportation or economic interchange they may also fail to capture the differing geospatial modalities of the individuated landscapes connected by them, or the broader set of socio-cultural relations that underlie those connections. Modelling the development of the 'sacred islandscape' of the Saronikos Kolpos presents these very issues, the gulf having been a locus of peer polity competition throughout classical antiquity often subject to shifting allegiances and orientations. On a practical level, developing cost-based connectivity models must consider the differing parameters between terrestrial and maritime cost surfaces. Looking beyond geospatial connectivity, the relative proximity of cult sites to points of

embarkation and loci of economic activity or production to these and other cult sites in the region may indicate an identifiable relationship between specific cult practices and the wider system of socio-economic relations. Conversely, the expansion and retraction of cult practice may be correlated with but not necessarily driven by the efficiency of transit or commercial linkages and motivated primarily by a spatial or territorial consciousness encompassing a sense of local identity and of interconnectedness with the neighbouring maritime communities around them. Network modelling tools to address both cost-based and relational considerations, to include proximal point analysis (PPA), social network analysis (SNA), and path optimization, can provide quantifiable affirmation of these relationships and reveal how they may have shifted over time. Observations from the provisional application of these methods with a sample data set from the region are discussed.

### **SESSION 3—MARITIME TRADING NETWORKS AND MOBILITY**

#### **Early Indigenous and European Interactions on the Colonial Frontier in Dominica, Lesser Antilles.**

*Marie Meranda, PhD Candidate (University of South Florida)*

The Caribbean landscape and its people were drastically altered after European colonization intensified beginning at the end of the sixteenth century. Dominica, one of the last islands to be formally colonized by a European state, remained in control of the indigenous Kalinago people well into the eighteenth century. Archaeological and historical evidence suggests that early encampments and coastal enclaves were created by the fringes of European colonial society, who traded, interacted, and created relationships with the Kalinago. These groups consisted of Caribs, French settlers, free and enslaved Africans, people of mixed ancestry as well pirates and outlaws. The site of LaSoye, on Dominica's Atlantic coast offers insight into these illicit activities prior to British colonization in 1763. LaSoye is located on a sandy beach with a calm bay protected by a headland along the Dominica Passage, a popular trade route from the 16-19th centuries. This paper explores Dominica during the early colonial era, its frontier sites and its intra-island connectivity, focusing on the possibility and implications of LaSoye's role in the trade of contraband goods, which has been heavily investigated at high profile sites, such as Port Royal, but has received substantially less attention at smaller sites.

#### **(Re)interpreting the artefact collection of the Nossa Senhora da Consolação (1608) on light of the 17th century Global Maritime Trade.**

*Cezar Mahumane (PhD Candidate, Eduardo Mondlane University)*

The discovery of the sea route around the Cape by Vasco da Gama in 1498 opened the maritime trade between Europe, East Africa and India. In meantime, the Mozambique Island, which served as the capital of Portuguese East Africa from 1507 to 1898, came to play an important role in mediating the maritime interaction that subsequently emerged. The trade interaction created an impressive underwater cultural heritage at the Island, however, it has been heavily impacted over the last decade by commercial salvage activity. This situation was assessed in 2014 by the Archaeology Department of Eduardo Mondlane University in cooperation with international partners. In the aftermath of the treasure hunters impacts, the proposed paper attempts a (re)interpretation and assessment of the archaeological significance of some indicative artefacts recovered from the Nossa Senhora da Consolação wreck (1608). The (re)interpretation is based on comparative analysis with artefact assemblage recovered in

other contemporary shipwrecks and land sites around the world. The analysis results suggest that the Nossa Senhora da Consolação was a 17th century cargo ship integrated in the global trading network, which found her fate at Mozambique Island due to commercial competition and access to strategic coastal positioning between the Portuguese and the Dutch.

### **The contribution of shipwreck evidence to our understanding of the maritime trade connections of Narbo Martius (1st c. BC to early 3rd. c. AD).**

*Jose-Oscar Encuentra Bardina, PhD Candidate (University of Southampton)*

The Mediterranean Sea, the Roman Mare Nostrum enclosed by the provinces of the Empire, was a genuine seascape of maritime 'Viae' shaping an extraordinary maritime trade network that connected the ports located all around that Mare Internum. Narbo Martius was, according to Diodorus Siculus and Strabo, one of those ports and the main commercial harbour of western Mediterranean after Portus. This paper aims to identify the Maritime trade connections, during the late Republic and the first half of the Empire, of this important 'emporium' of the Roman Mediterranean and capital of the Provincia Narbonensis. I am employing a challenging approach: The use of data obtained from shipwrecks as the main source of information for the study of the maritime trade connections of Narbo Martius. This data, added to the information obtained from terrestrial sites, will allow us to obtain the full image of Narbonne as a central place for the import, export and redistribution of goods in western Mediterranean during the late Republic and the first half of the Roman Empire (1st c. BC to early 3rd c. AD). The geographic frame of this research includes the Mediterranean coastal areas of the current French regions of Occitanie and Région Sud Provence-Alpes-Côte d'Azur, between the Pyrenees and the Alps, which occupy what, in Roman Antiquity, was the province of Narbonensis; also the current Spanish region of Catalonia, which inherit the area of the ancient Conventus Tarraconensis within the Roman province of Tarraconensis. I am also including the waters surrounding the island of Corsica, for being part of the maritime routes connecting, in Roman Antiquity, the provinces of Tarraconensis and Narbonensis with Rome.

### **Constraints and potentialities the Danube Delta in Antiquity (7th c. BC – 7th c. AD): towards a socio-economical approach.**

*Dr Alexandra Bivolaru, Postdoc Researcher (Aix Marseille University)*

In this paper, we investigate the natural constraints and potentialities in terms of communication, connectivity, accessibility and navigability during the Antiquity (7th c. BC – 7th c. AD) in the Danube Delta (Romania). The Danube Delta is a strategic area, which has always provided access overland from the North. It overlooks the Black Sea to the East and looks towards Central Europe via the Danube Valley. It is an important geographical corridor where various civilisations succeeded since Neolithic. Nonetheless, the intensive occupation of the Danube Delta starts in Antiquity, as shown by a considerable number of archaeological sites located along its shores. Therefore, we will examine à la longue durée the role of natural constraints and potentialities in the socio-economic development of three Greek Archaic colonies: Orgame, Caraburun-Acic Suhat and Istros. The settlements are located in the southern unit of the Danube Delta, characterised nowadays by the Razelm-Sinoe lagoons system. Firstly, we reconstructed the palaeo-environmental evolution of the southern Danube Delta unit, using a multi-proxy approach. Secondly, we described in an analytic manner the natural constraints and potentialities in the determined environment, with an in-depth comparative analysis of navigation conditions, accessibility and harbour activities. Thirdly, through a comparative approach, we show that

the Greek occupational network in the southern Danube delta sector was structured to answer internal (e.g., the settlement itself) and global (e.g., the colonisation strategy) needs, through access and exploitation of ecologically diverse zones.

