

Sheffield Centre for Aegean Archaeology
Round Table 2016

Precious circuits: changing social, economic, cultural and symbolic values of metals

1st – 3rd April 2016

Department of Archaeology
University of Sheffield

Programme and Abstracts

Precious circuits: changing social, economic, cultural and symbolic values of metals

Fri 1st April		
18:50	Keynote Address	
	Welcome	
19:00	Chris Pare	Iron before the Iron Age. The discovery and adoption of a new technology
20:00	Reception	--> in the department
Sat 2nd April		
	Session 1	Chair: TBA
10:00	Toby Wilkinson	Precious circuits: frameworks for exploring ancient metals
10:30	Borja Legarra Herrero	Context and meaning in the consumption of gold and silver items in the south Aegean during the 3rd Millennium BCE
11:00		
	Tea & coffee break	
11:30	Elisabetta Borgna	The sword and the axe. Symbols of value in the Bronze Age social and economic exchange networks linking the Aegean to Italy within a diachronic perspective
12:00	Sue Sherratt	Greek silver before coinage: medium of exchange, vehicle of capital accumulation, or commodity?
12:30	Discussion	
13:00		
	Lunch break	
	Session 2	Chair: Toby Wilkinson
14:30	Vasiliki Kassianidou	Tracing the changes in the economic and symbolic values of metals on Cyprus from the Bronze Age through the Iron Age
15:00	Joanna Palmero	Contextual approaches to the Cypriot iron industry after 1200 BCE
15:30		
	Tea & coffee break	
16:00	Gojko Barjamovic	Origins and Developments in the Metal Trade in Western Asia c. 3000-1500 BCE
17:00	Discussion	
17:30		
	Pub break	
19:00	Dinner	--> at 'Efes' restaurant, 278-280 Glossop Road.

Sun 3rd April		
	Session 3	Chair: Sue Sherratt
10:00	Joseph Lehner	Finance, Trade, and the Metal Craft Economy in Hittite Central Anatolia
10:30	Martina Massimino	The changing social role of metal in the transition from the late 4th to the 3rd millennium BC in Northern Mesopotamia: the case of Başur Höyük–Siirt (south-eastern Turkey)
11:00	Tea & coffee break	
11:30	Emanuela Alberti	Precision weighing for precious metals in the Aegean from EBA to EIA: local traditions and Near Eastern influences
12:00	Lorenz Rahmstorf	Precious metals and measures from the Copper to the Early Iron Age – always a necessary conjunction?
12:30	Discussion Summary	
13:30	Farewells	

Precision weighing for precious metals in the Aegean from EBA to EIA: local traditions and Near Eastern influences

Most Aegean sites involved in metallurgical activities yielded also some light balance weights for precision weighing. The history of the precision weighing measures in the Aegean is quite a complex and still debated one: it seems however clear that local regional traditions combine with long-distance influences, suggesting that trade in precious metals played a key role in shaping the measuring system(s). It has even been proposed that the Minoan basic weight unit (c. 60 g) could be originally connected to the Egyptian gold *dbn* standard (12,9 g, Old Kingdom).

If it is clear that during EBA the weighing system of mainland Greece was actually based on Levantine standards, the situation for the Cyclades and Crete is less straightforward. The evidence from Dhaskalio (Cyclades, EBA) and Malia (Crete, MBA) will be revised here, both being sites where metallurgical activity has been detected: it appears that Near Eastern standards are known but are re-incorporated in local series. The MBA III – LB I evidence for minor weight units is disappointingly scarce in the Aegean, but some information is now available from Akrotiri, on the route of the Laurion lead and silver to Crete, Poros and Mochlos, where metallurgical activity is attested: in the wider Aegean this is the period of major documentation of local measures, but exactly for precision measures both Near Eastern and Aegean standards are present. Some of the scale pans from Akrotiri are indeed apt to precision weighing. The very diffusion of lead balance weights during this period points to the large scale of Laurion exploitation. A more complex situation appears during LB IIIA-B, when precision weighing sets incorporate both a revised Minoan tradition and Levantine standards: this is especially clear at Tiryns (Argolid) and Thebes (Boeotia), again sites where precious metal working is attested. A short summary on the gold working evidence from Thebes will be provided, in the framework of the ‘palatial’ craftsmanship typical of Mycenaean times. Weighing metals was indeed an important part of the administration of ‘palatial’ production: leaving aside the PY Jn series dealing with bronze, some metrological observations will be offered about the tablets of the series KN Og (possibly the first version of the weighing of various commodities, including lead and tin, on a fixed weight scale) and PY Jo 438 (gold). It has however to be stressed that silver is conspicuously absent from this type of administrative records, including those registering possible ‘payments’: it is then not clear if it was playing the role of medium currency as it was in the Eastern Mediterranean. During the post-palatial period and the Early Iron Age, balance weights are indeed quite rare: however, the few of them discovered in actual ‘hubs’ of the regional trade network (Perati first and Lefkandi after), are small units based on Levantine standard, once again pointing to the importance of precision weighing for the trade economy of the period.

Origins and Developments in the Metal Trade in Western Asia c. 3000-1500 BCE

The Old Assyrian trade network c. 1895-1865 BCE is probably the best documented example of how a long-distance overland trade circuit was organized and run in the ancient world. A large part of this trade was in raw metals, which were carried across great distances and in large volume. Yet, the merchant records show that the Assyrian trade system was not unique or isolated. It formed part of an interlocking string of commercial circuits that may have extended all the way from the frontiers of China to Egypt and the Balkans. My paper will address the roots of this trans-regional commercial system as seen from Mesopotamia, and explore how political change and commercial development can be linked to an apparent spread of metal into everyday household contexts across Western Asia shortly after 2000 BCE.

The sword and the axe. Symbols of value in the Bronze Age social and economic exchange networks linking the Aegean to Italy within a diachronic perspective

A sound motivation for the increasing evidence of contacts between the Aegean and the Adriatic regions in the last centuries of the Late Bronze Age seems to have been the demand for Alpine metal, as important clues about industrial exploitation of metal ores in the Trentino area and even a few archaeometric data might confirm. The scanty evidence concerning exploitation and transport of bulk commodities from Central Mediterranean to the Aegean seems however to contradict traditional views inferring that the Mycenaeans traveling westwards had a main interest for Italian raw materials. By contrast, various evidence points to a general pattern predicting flows of raw materials from the East to the West, a flow mainly controlled in the Aegean and Eastern Mediterranean by palatial emissaries and/or private traders in the framework of commanded economies. A prevailing role of individual agents and small-scale encounters in the Italo-Aegean interaction network fits better with a pattern of exchange through social networks, craft interaction and circulation of finished goods, which might have been involved in a process of commodization, as has been already suggested by scholars.

Taking into detailed consideration the cycles of metallurgical production in northern Adriatic, including metal supply, recycling and hoarding in a span of time going from the local advanced Middle to the Final Bronze Age (14th-11th ca), I would like to investigate the ambiguous meaning of the Italian bronzes and their changing function through time, fluctuating between a broadly social role and a prevalent economic one, and possibly shifting to an emerging political function at the very end of the Bronze Age. At that time a major discontinuity in the system of values fostering metal exchange seems to be stressed by some evidence concerning change in ores exploitation and supply in the circum-alpine regions, the emerging role of other metals such as lead and iron as well as changing practices of bronze deposition in the Aegean. Special emphasis will be given to some classes of materials, such as swords and winged axes, which seem to have represented special

symbols of value in the framework of interlocking spheres of metal circulation.

Vasiliki Kassianidou

University of Cyprus

Tracing the changes in the economic and symbolic values of metals on Cyprus from the Bronze Age through the Iron Age

Cyprus, situated in the crossroads of the Eastern Mediterranean, forms a good case study which can be used to trace the changes in the economic and symbolic values of metals. The island holds some of the richest copper ore deposits of Europe and in Antiquity played a leading role as a producer and exporter of the metal. The island has no tin or lead ores and although in modern times gold and silver were successfully extracted from local deposits, this would not have been possible in Antiquity. All these metals would therefore have had to be imported and as a result would/seem to have different values through time. Iron on the other hand could have been produced on the island (although the physical evidence for this production remains elusive) and Cypriot smiths are believed to have played a leading role in the development and dissemination of iron metallurgy.

The availability and access to all of these metals seems to have affected in many ways their economic and symbolic value and a close look at metallic artefacts, mainly from tomb groups, dating to different periods clearly enables one to see these changes. For example in the Early and Middle Bronze Age, only a small number of artefacts are actually made of bronze, the majority are either made of unalloyed copper or arsenical copper. Furthermore, bronze is reserved for only certain types of objects. A study of weapons dating to these periods has shown that the number of metal artefacts and the size of weapons deposited in the tombs increases significantly through time. In the earliest phases of the Late Bronze Age, however, it is clear that high status is expressed through the deposition of artefacts made of precious metals, mainly gold, rather than bronzes. This too changes in the latter part of the Late Bronze Age when elaborate bronze artefacts are deposited in the tombs. This is something which continues in the Early Iron Age but not throughout the island. The area of Palaepaphos stands out in having Early Iron Age tombs with numerous metal artefacts. Chemical analysis of these bronzes has shown that certain alloys, namely high-tin bronzes, are reserved for the manufacture of certain types of vessels.

The aim of this paper is to present the changing economic and symbolic values of metals on Cyprus from the Bronze Age through the Iron Age.

Context and meaning in the consumption of gold and silver items in the south Aegean during the 3rd Millennium BCE

There is little doubt that the desire to acquire gold and silver was one of the factors that fomented connectivity amongst Aegean communities and between the Aegean and surrounding regions during the 3rd and 2nd Millennia BCE. Perhaps influenced by the better understood Late Bronze Age networks both metals have been mainly considered from a commercial point of view, with analyses mainly interested in the way these metals were exchanged. This presentation aims to complement the more economically oriented analysis with a more detailed look at the consumption patterns of gold and silver in the Aegean. In particular, I aim to show the problems with the traditional assumption that gold and silver were mainly employed as part of conspicuous consumption mechanisms and to propose a more complex understanding of the relationship between metals, consumption, social organisation, ritual practice, political negotiation and exchange mechanisms.

Finance, Trade, and the Metal Craft Economy in Hittite Central Anatolia

The emergence of the Hittite state in central Anatolia during the late 17th century BC is marked empirically by a novel political economy reflecting a range of new economic and political institutions. In particular, pottery consumption, settlement patterns, administrative technologies, landscape monuments, and distinct urban architecture all show important overlapping imperial strategies involved in the transformation of Hittite Anatolia into a territorial state. Elites centered at Boğazköy-Hattuša integrated much of central Anatolia into this new state, which also extended networks of imperial power into populous neighboring regions to extract tribute and facilitate trade. While certain elements of tribute and levies were adopted during the preceding period, the geographic scope and centralization of the tribute and levy system increases in scale and operation during Hittite rule. Metals, in particular silver, gold and copper alloys, and their producers, functioned intimately within this system, and they provide an appropriate proxy and an independent line of evidence for the functioning of the imperial finance and trade system.

In this paper, I briefly examine both textual resources (tribute/tax/inventory and legal texts) and new data from a large study of metallurgy of Bronze Age central Anatolia to scrutinize this problem in further detail. Results demonstrate the significance of local production practices and sponsored labor organization. I also introduce here the importance of a poorly understood alloy of copper and nickel, evidence for which suggests it was an intentionally produced silver-colored metal often mistaken for silver itself.

The changing social role of metal in the transition from the late 4th to the 3rd millennium BC in Northern Mesopotamia: the case of Başur Höyük-Siirt (south-eastern Turkey)

The extraordinarily rich metal assemblages found in sixteen tombs at Başur Höyük-Siirt, in the Upper Tigris River Valley, shed new light on the perception and use of metal in South-eastern Anatolia and Northern Mesopotamia at the beginning of the Early Bronze Age, following the Uruk withdrawal. As a rare good being produced with an advanced technology, metal perfectly meets the need for visible display of belonging, wealth and status. The lavishness of the grave goods of Başur Höyük reveals the existence of an emerging elite who mastered an advanced metal technology - or at least had the means to acquire these objects from other sources - and used them within a new system of social representation in order to legitimise their newly achieved power.

The conspicuous disposal of metal items in mortuary contexts has interesting parallels in a series of contemporary sites located in the Upper and Middle Euphrates Valley. This contrasts sharply with the previous Late Uruk period, marked instead by the almost total absence of funerary depositions with rich grave goods.

Contextual approaches to the Cypriot iron industry after 1200 BCE

The iron industry in Cyprus was virtually non-existent until 1200 BCE when the number of iron artifacts increased so dramatically and abundantly that Cyprus is identified as one of the first regions in the Eastern Mediterranean to develop iron working. Studies focusing on the economic benefits of exporting iron as well as metallographic analyses aimed at understanding the production methods have provided a great deal of insight into this phenomenon. This study provides an additional perspective by focusing on the context of the objects, particularly the large group of iron knives that make up the bulk of the iron corpus in Cyprus. Iron in this period is often thought to derive value from its scarcity, but the large-scale production, the standardization, and the unusual variety of find contexts suggest that these knives appealed to a local rather than export market, and that their value derived from something other than the rarity of the material.

Iron before the Iron Age. The discovery and adoption of a new technology

Traditionally, historians have held the ability to make iron tools and weapons to be one of the great advances in the history of technology, and C. J. Thomsen selected the new technology to define one of the major “Ages” in the course of human development. The lecture begins with a brief discussion of models of technological innovation. There follows a summary of the earliest evidence for iron, particularly in the Near East. However, the focus of the lecture is on the dissemination of iron use in the centuries following the collapse of the palatial economies around 1200 BC. The area studied comprises southern Europe, reaching from Portugal in the west to the Ukraine in the east. In the central and western Mediterranean, most of the earliest iron objects – from the 11th/10th century BC – come from sites located quite close to the coast, and the same seems to be true for the area north of the Black Sea. For this reason, it seems likely that seafarers transmitted iron artefacts and metallurgy via networks of coastal communication and exchange. From this point of view, the dissemination of iron represents an early element of pre-colonial contact. Examples of early iron objects, including knives and bimetallic objects, will be discussed alongside other evidence for early contact with the Aegean and East Mediterranean.

Precious metals and measures from the Copper to the Early Iron Age – always a necessary conjunction?

In 1892 W. Ridgeway argued that “the art of weighing was first employed for gold”. This cannot be demonstrated so far with the Varna gold, yet there are clear signs for a serial production of some of the artefacts. Such production results in rather a very similar mass of each object. On present knowledge first indubitable evidence for the use of weights and scales only emerged around 3150/3000 BC in Egypt and Mesopotamia. This is paralleled with the massive increase in the use of precious metals like gold and silver and to a certain extent also tin and arsenic during the third millennium BC in the ‘Greater Near East’, exemplified for example by the wide occurrence of metal vessels from this period onwards. The extensive desire for such materials and products created the societal context in which weight metrology was developed and transmitted over large geographical spheres in an amazing pace. It has some probability that the main actors who procured the supply, the traders, were responsible for this. In this respect it is important to note that weights appear as early as 2900–2800 BC in the Aegean. A reoccurring match (weights and signs for silver production) in find assemblages is revealing for a number of EBA sites in the Aegean. Such a match is again visible in Late Bronze Age and Early Iron Age Iberia and most recent investigations imply even a strong link between metal trade and weight use also for Late Bronze Age Northwest Europe. In sum, while we cannot prove in every case the nexus between the extensive use of precious metals and weight metrology so far, it is a plausible model for Bronze and Iron Age Western Asia and Europe and it deserves much more attention.

Greek silver before coinage: medium of exchange, vehicle of capital accumulation, or commodity

There has been some debate as to whether Greece made use of silver as a form of currency before the introduction of coinage in the 6th century BC. By analogy with the Levant, one might expect that it did, but, unlike in the Levant, there is virtually no evidence for this. And in any case the observations that the Phoenicians, in particular, adopted coinage so much later than the Greek cities, and that the earliest Levantine coins were in general of Greek or Persian origin, makes one suspect that the uses of silver preceding and surrounding the introduction of coinage in the two regions were rather different.

This paper considers the role of silver in Greece in the Early Iron Age and early Archaic periods, at a time when it is clear from both direct and circumstantial evidence that it was being acquired and made use of.

Precious circuits: frameworks for exploring ancient metals

This paper will set out to briefly review the field of archaeometallurgy and its existing priorities and pose a set of questions with the themes which provide the basis of this years Aegean Round Table, with the aim of providing some overall frameworks for the event. By way of case-study, the widespread incidence of metal-wares, metal skeuomorphism or 'Metallschock' both in the Aegean and in wider Eurasia (especially during the 3rd millennium BC) will be discussed. It will be argued that these phenomena represent different responses to expanding reach of metal flows albeit with local flavours and dynamics.