Breaking Boundaries – Connecting the Aegean Bronze Age

Proceedings of the 3rd Scapecon Conference, hosted online at the Groningen Institute for Archaeology on 22 and 29 September and 6 October 2020

TMA Supplement 2
2021

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Breaking Boundaries

Connecting Aegaean Bronze Age scholars in times of a global pandemic

It is with great pride that we present you the volume before you: *TMA Supplement 2: Breaking Boundaries – Connecting the Aegean Bronze Age*. This second supplement in the history of *Tijdschrift voor Mediterrane Archeologie* (TMA) is the result of the combined efforts of the TMA editorial team and the Scapecon 2020 conference organisers.

Scapecon 2020 & TMA

The international conference Scapecon 2020 was originally set to take place in Groningen in March 2020. Since 2018, this event has been organised annually in early spring to connect early career scholars of the Aegean Bronze Age. Previous editions at Heidelberg (Germany) and Poznan (Poland) were a great success, allowing young researchers to share and discuss their research and socialise with their peers from all over the world.

The edition in 2020 did not go quite as planned. Less than two weeks before the three-day event was supposed to kick-off, the Netherlands went into lockdown because of the COVID-19 pandemic, eliminating any hope to host the event as planned. At first we postponed the event, in the hope to come together in Groningen at a later date. However, as uncertainties continued, we were facing the choice between either cancelling the event completely or switching to a different format. Having over 20 enthusiastic speakers lined up from Austria, Belgium, Germany, Greece, Italy, the Netherlands, Poland, Turkey, the United Kingdom, and the United States of America, we decided to go online.

In three afternoon sessions in September (22nd and 29th) and October (6th), Scapecon 2020 Online: *Breaking Boundaries: Negotiating change in the Aegean Bronze Age* took place (see pp. ix-x for the complete programme). Its success was much bigger than we could have imagined: over a hundred people from all over the world signed up and enjoyed interesting papers and lively discussions. Going online proved easily accessible, and while we definitely missed the network aspects of an in-person event, we were happy and grateful so many people signed in and decided to join us.

We did not want our initiative to stop with the online conference. After discussing ways in which we could further support the early career scholars of our event, we decided to get a selection of papers ready for publication. Reaching out to the TMA-team to combine our efforts seemed a very natural step. The Groningen-based *Tijdschrift voor Mediterrane Archeologie* (TMA) was founded in 1988 with the goal to offer early career researchers of Mediterranean archaeology a podium next to senior academics. TMA is the only Dutch-language scientific journal on mediterranean archaeology and as such, it is primarily aimed at scholars affiliated to Belgian or Dutch universities and at Dutch-speaking scholars abroad. Over the years, however, TMA has organised several English-language conferences following its themed issues. Due to the covid restrictions, such a conference was not an option for 2020. Working together with the organisers of Scapecon 2020 on a supplement offered a beautiful alternative to those conferences.

With the combined efforts of the TMA's editorial team, the enthusiastic Scapecon participants, the Dutch Aegean Prehistory academic community and the generous input from our financial supporters we are proud to now present you this volume with nine selected papers from the congress and twelve research profiles from Dutch researchers. Because TMA Supplements are not part of a subscription on the journal and because the supplement is in English, rather than primarily in Dutch, we decided to make the supplement freely accessible online.

About the theme: connecting the Aegean Bronze Age

The overarching theme of the Scapecon conferences has traditionally been 'relational archaeology of the Aegean Bronze Age'. This decidedly wide topic allows approaches from many different angles, including (but not limited to) people's relationships with each other, with the landscape, objects or architecture.

In 2020, the focus of the conference was on the flexibility of these relationships. Relationships of people and their material and immaterial worlds are not static; they are subject to continuous adaptation, renegotiation and manipulation, depending on the changing wants and needs of the agents shaping these relationships. This becomes visible in many aspects of the archaeological record, from object-oriented studies on subtle changes in iconography (Binnberg, Wolf) to more visible changes in shape and function of objects (such as pottery and metal) and the spread of these objects over the Mediterranean world (Mercogliano, Frank, Pendlebury). Then there is the impact of the environment (Borowka & Angeli, Emra & Cveček), and the use and (re)-structuring of the landscape (Katevaini, Rousioti). The articles in the volume are roughly ordered according to these different perspectives on relational archaeology.

As the articles cover not only a broad span of topics, but also a vast area and period, with different chronologies and terms for different regions, we created two figures to aid the reader. Figure 1 provides an overview of the most commonly encountered chronologies of the Bronze Age in this volume, i.e. those of Crete and the mainland. Figure 2 provides an overview of most sites and regions discussed in the various contributions.

Years BC		Crete (Minoan)		Mainland (Helladic)		
		Pottery Phase	*Calendar dates*	*Pottery Phase*	*Calendar dates*	
3100	*Prepalatial*	EM I	3100 – 2700 BC	EH I	3100 – 2700 BC	
3000						
2900						
2800						
2700		EM II	2700 – 2200 BC	EH II	2700 – 2200 BC	
2600						
2500						
2400						
2300						
2200		EM III	2200 – 2100 BC	EH III	2200 – 2000 BC	
2100		MM IA	2100 – 1900 BC			
2000				MH I	2000 – 1850 BC	
1900	*Protopalatial*	MM IB	1900 – 1800 BC			
				MH II	1850 – 1700 BC	
1800		MM II	1800 – 1700 BC			
1700	*Neopalatial*	MM III	1700 – 1600 BC	MH III	1700 – 1600 BC	*Shaft-Grave era*
1600		LM IA	1600 – 1480 BC	LH I	1600 – 1500 BC	
1500				LH IIA	1500 – 1440 BC	
		LM IB	1480 – 1425 BC			
	Final Palatial	LM II	1425 – 1390 BC	LH IIB	1440 – 1390 BC	
1400		LM IIIA1	1390 – 1370 BC	LH IIIA1	1390 – 1370 BC	
		LM IIIA2	1370 – 1300 BC	LH IIIA2	1370 – 1300 BC	
1300		LM IIIB	1300 – 1190 BC	LH IIIB	1300 – 1190 BC	*Mycenaean period*
1200	Postpalatial					
		LM IIIC	1190 – 1070 BC	LH IIIC	1190 – 1070 BC	
1100						
1070		Subminoan		Submycenaean		

Figure 1. An overview of the most commonly encountered chronologies of the Bronze Age in this volume, i.e. those of Crete and the mainland (figure Iris Rom).

About the contributions

The volume opens with a contribution by *Julia Binnberg*, who discusses the Late Minoan equivalent of the rabbit-duck-illusion, which is found on a clay sarcophagus (*larnax*) from Crete. She shows that readers of the image can recognise both waterbirds and argonauts in the decoration on the larnax, and she offers an answer to the question why such an ambiguous design was chosen for a sarcophagus.

For the article of *Diana Wolf* we remain in Crete, in the Late Minoan II-III period. She discusses four iconographic objects (figure-of-eight shields, impaled triangles, plant devices, and double axes) found on hard-stone seals. These objects were held by or engaging with figures in designs from the Neopalatial period, but seem to be 'floating' in seals from the Final Palatial period. Wolf proposes that this subtle change may have been adopted as a social strategy to negotiate a claim to power.

Moving from iconography to networks of trade, we continue with two studies on pottery assemblages in the northeastern Peloponnese. *Assunta Mercogliano* presents preliminary insights on a recently discovered MIddle Helladic settlement near Trapeza Hill (see figure 2, no. 19). Mercogliano argues that the continuous use of certain pottery shapes in the settlement can be understood as a consequence of the settlement's location. Innovation may have presented itself in more peripheral sites differently.

From the Middle Helladic period we move to the Late Helladic period, with a paper by *Daniel Frank*. Using Neutron Activation Analysis (NAA), Frank shows that scientific analysis can go beyond certain limitations of macroscopic analyses. With this, Frank presents a fascinating case of potters from Kolonna (see figure 2, no. 12) continuing to supply a site very close to the rising Mycenaean centres in the Argolid for far longer than would be expected.

Next is a contribution by *Abby Pendlebury* (previously *Durick*), who discusses the (limited) evidence of Mycenaean objects from modern Bulgaria (see figure 2, nos. 31-34). She presents an exciting example of how absence of evidence (largely due to events in recent Bulgarian history, including the destruction of archaeological sites) should not be interpreted as evidence of absence.

For the next two papers we move from objects to seasonal changes, and their influence on the development of trade networks and ways of living. First, *Dawid Borowka & Effimia Angeli* draw their readers' attention to the importance of maritime knowledge and navigational techniques. They do so in the context of the Minoan Thalassocracy (ca. 2000-1400 BC). The approximate starting date of the thal-

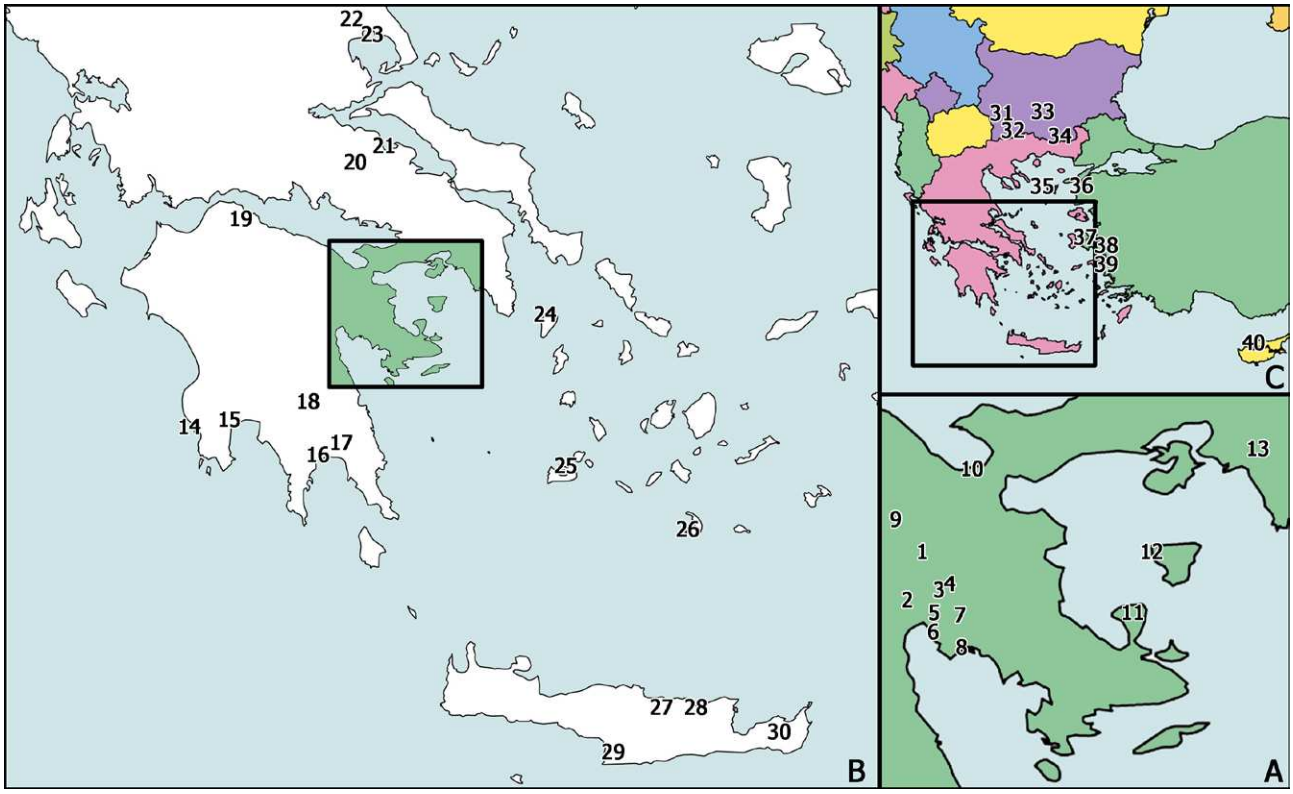

Figure 2. Map with important sites mentioned in the papers of this volume (figure Iris Rom and free vector maps by Vemaps.com).

A: Greece – Argolid and Saronic Gulf	B: Greece – southern mainland, Cyclades and Crete	C: Wider Aegean
1. Mycenae	14. Pylos	31. Bresto
2. Argos	15. Nichoria	32. Koprivlen
3. Dendra	16. Ayios Stephanos	33. Dragoyna
4. Midea	17. Geraki	34. Ada Tepe
5. Tiryns	18. Ayios Vasileios	35. Poliochni (on Lemnos)
6. Lerna	19. Trapeza	36. Troy
7. Katsingri	20. Agia Triada	37. Liman Tepe
8. Asine	21. Mitrou	38. Bakla Tepe
9. Tsoungiza	22. Dimini	39. Çukuriçi Höyük
10. Korakou	23. Pefkakia	40. Agia Triada (on Cyprus)
11. Methana peninsula	24. Agia Irini (on Keos)	
12. Kolonna (on Aegina)	25. Phylakopi (on Melos)	
13. Athens	26. Akrotiri (on Thera/Santorini)	
	27. Knossos (on Crete)	
	28. Malia (on Crete)	
	29. Phaistos (on Crete)	
	30. Praisos (on Crete)	

assocracy corresponds to the first depictions of sails on Crete – something they may have learned from trading with Egypt, where the earliest depictions of sails are at least a millennium older.

The study by *Sabina Cveček & Stephanie Emra* also discusses seasonal changes, but in a very different context. Late Bronze Age zooarchaeological evidence from Çukuriçi Höyük (see figure 2, no. 39) suggests, as the authors argue, that most domestic young animals were slaughtered before the beginning of the winter, rather than being kept until older age to increase wealth. Combining this with anthropological studies on the Baruya (a tribe in Papua New Guinea), Cveček & Emra propose inferences about the social structure of the settlement's inhabitants.

The final two papers discuss examples of inhabitants actively giving meaning to and shaping the landscape around them. *Alexandra Katevaini* combines modern elevation data with old maps and excavation reports (over a century old) to test the possibility of using these data in contextual analyses. Late Minoan tombs on Praisos (see figure 2, no. 30) constitute the case study for her test.

Finally, *Dimitra Rousioti* presents an overview of results from her recently published PhD thesis on the formation of the religious landscape in the Late Bronze Age Greek mainland and on Cycladic islands. Evidence for Mycenaean sanctuaries is scarce, but by bringing together what evidence there is for a larger region, Rousioti is able to provide a comparative analysis, showing regional differentiation in Mycenaean cultic practices.

The volume is complemented with introductions to research projects of both junior scholars and senior staff working on the Aegean Bronze Age in The Netherlands.

The final pages of this supplement offer Dutch translations of the abstracts of all nine articles.

Thanks

We wish to thank several people in aiding us in getting this publication ready for print, especially our keynote speakers at the conference, Prof. Dr. Ann Brysbaert (University of Leiden) and Prof. Dr. Sofia Voutsaki (University of Groningen). We would also like to thank our sponsors, National Research School for archaeology ARCHON, the Netherlands Institute in Athens (NIA), the Society for the Promotion of Hellenic Studies (SPHS), and the Groninger Universiteitsfonds (GUF), for their generous support in publishing this volume in an open access format, as well as in print. You can find their logos on p. ii. We thank our Scapecon colleagues for reviewing all papers in this volume, and our TMA colleagues for aiding them and for dotting the i's. Our thanks also go to Adam Wiznura, Daniel Turner and Ineke de Vries for their corrections of the English papers. Finally, we would like to thank Hannie Steegstra, for the amazing job of getting this volume ready for print.

We hope you enjoy this supplement!

On behalf of the Scapecon organisers and on behalf of the TMA editorial board,
Iris Rom & Caroline van Toor

Breaking boundaries: negotiating change in the Aegean Bronze Age

Conference programme

Tuesday 22 September 2020: Session I
Moderator: Daniel Turner, PhD

Session I: Human relations with their lived space

Keynote lecture 1: Prof. Ann Brysbaert (Leiden University)
A 'moving' story about labour. The taskscape of the Late Bronze Age Argive Plain

Stephanie Emra (University of Veterinary Medicine, Vienna) & Sabina Cveček (University of Vienna)
Negotiation and interaction in EBA Çukuriçi Höyük: differing solutions to competing 'scapes' with the beginning of rising inequality

Başak Ongar (University of Ege)
Household archaeology in West Anatolia during the Late Bronze Age

Piotr Zeman (Adam Mickiewicz University)
Entangled Mycenae: case study of a Late Bronze Age palatial town

Sarah Hilker (University of North Carolina at Chapel Hill)
Beyond the palace: case studies in Mycenaean townscapes

Francesca Nani (University of Pisa), Salvatore Vitale (University of Pisa), Calla McNamee (Wiener Laboratory for Archaeological Sciences)
Building identities: breaks and continuity in construction practices at the prehistoric settlement of the 'Serraglio' on Kos

Dawid Borowka (University of Gdańsk) & Effimia Angeli (Democritus University of Thrace)
Environmental aspects of the the so-called 'Minoisation' process in the Middle and Late Bronze Age Aegean

POSTER: Dimitra Spiliopoulou
Life with the help of artificial light sources in the prehistoric settlement of Akrotiri, Thira

Tuesday 29th September 2020: Session II
Moderator: Iris Rom, MA

Session II: Human relations with sacred and mortuary space

Keynote lecture 2: Prof. Sofia Voutsaki (University of Groningen)
Towards an archaeology of kinship

Alexandra Katevaini (University of Groningen)
Contextualizing Late Minoan tombs

Yannick de Raaff (university of Groningen)
Experimenting with change: the built tomb of the North Cemetery at Ayios Vasileios, Lakonia

Dimitra Rousioti (Aristotle University of Thessaloniki)
Investigating the sacred landscape in the Late Bronze Age Greek mainland

Iris Rom (University of Groningen)
Negotiating death in the Bronze Age: a view from western Greece

Katarzyna Dudlik (Adam Mickiewicz University)
Mortuary practices in context. Local idiosyncrasies in search of the Koan identity

POSTER: Youp van den Beld
Understanding socio-political processes through the study of labour investment: the case study of the North Cemetery at Ayios Vasilios

Tuesday 6th October 2020: Session III, IV, V
Moderators: Francesca Slim, Youp van den Beld, Dimitris Filioglou

Session III: Human relations through material culture and art

Thomas Mumelter (University College London)
Affective fields in Akrotiri's miniature frieze, Thera

Diana Wolf (Université Catholique de Louvain)
Symbols as social strategy? Late Palatial hard-stone glyptic as Identity markers

POSTER: Anna Filipek
One but many. The concept of the great mother goddess in the study of the Minoan religious system in the Bronze Age

Session IV: Human relations viewed from material culture

Evgenia Tsafou (Université Catholique de Louvain)
Identifying the changing function and use of cooking vessels in Minoan societies

Assunta Mercogliano (Ca' Foscari University of Venice)
Breaking ceramic boundaries: formation and change in pottery assemblages during the Middle Helladic period with a special look at the Trapeza settlement (eastern Achaea)

Daniel Frank (Ruprecht Karl University of Heidelberg)
Tracing Early Mycenaean ceramic traditions in the north-east Peloponnese

POSTER: Kilian Regnier
Building interactions beyond boundaries during the Bronze Age: the case of the Aegean tripod stone mortar

POSTER: Todor Valchev
The marble pendant from the prehistoric settlement mound Maleva Mogila near the village of Veselinovo, Yambol municipality, Bulgaria

Session V: Human relations with the economic landscape

Giulia Paglione (Sapienza University Rome)
Reconstructing the landscape through the Linear B texts: the case of coriander cultivation in Phaistos

Anastasia Vergaki (National and Kapodistrian University of Athens)
Lonesome are hee yes: The depiction of the animals on the Ayia Triadha sarcophagus

Abby Durick (Fulbright Student Researcher, Bulgaria)
Origin to deposition: the socio-cultural significance of gold provenance studies in the North Aegean and Ancient Thrace

POSTER: Jakub Witowski
Relation between the form of Aegean swords and modes of use in the light of use-wear analysis – the case of two bronze swords from the Athenian Agora

Rhythms of seasonal taskscapes at Early Bronze Age Çukuriçi Höyük

Sabina Cveček & Stephanie Emra

Abstract. *This contribution addresses taskscapes as related to household activities that made up the mixed regional economy of Çukuriçi Höyük, an Early Bronze Age 1 site in western Anatolia. We contextualise the intersection of different taskscapes such as butchering, craft activities, and regional exchange as related seasonal activities at Çukuriçi Höyük. We argue that by slaughtering young caprines, dwellers at Çukuriçi Höyük avoided the accumulation of household wealth on the hoof and followed seasonal rhythms of complementary and seasonal taskscapes. Dwellers at this site culled young individuals at the end of summer, to release time and labour for metalworking and other tasks over the winter, and to not reinforce an elite status that cannot be inferred from the archaeological context at Çukuriçi Höyük. The young cull ages at Çukuriçi Höyük, therefore, allow us to infer a repetitive, rhythmic, and seasonal pattern of related taskscapes, as documented elsewhere ethnographically, rather than a signature of social inequality.*

Due to the rising importance of metallurgy and long-distance trade, the interpretations of the Early Bronze Age period in Anatolia, as well as the Near East, commonly conform to evolutionary trajectories of increasing complexity and social inequality. This trend can also be found in archaeozoological interpretations. For example, Type A meat, consisting of young individuals slaughtered for tender meat, has been interpreted as 'prestige meat' that was reserved for an elite and linked to practices of sacrifice at an Early Bronze Age Near Eastern urban contexts.[1] The argument presented in this contribution shows the contrary for a contemporaneous setting, in the periphery of large urban centres. In non-elite, non-urban, non-state contexts, it was seasons rather than social class which dictated slaughtering young caprines that produced the signature of what archaeozoologists would call Type A meat. As we show through the example of the Early Bronze Age site of Çukuriçi Höyük (see figure 1 for its location), dwellers at this site resisted or avoided the accumulation of household wealth on the hoof[2] by slaughtering young individuals and followed seasonal rhythms of complementary and seasonal taskscapes simultaneously. As animal herding, metalworking, and regional exchange were tasks embedded in the "domestic mode of production" [3] dwellers at this site culled young individuals at the end of summer, perhaps to retain time and labour for metalworking and other tasks during the winter. The young culling ages at Çukuriçi Höyük, therefore, allow us to infer a repetitive, rhythmic, and seasonal pattern of related taskscapes rather than a signature of social inequality.

Taskscapes and 'restscapes' in their socio-political aspects

In 1993 Tim Ingold published *Temporality of the Landscape*, an article written for an archaeological audience, in which he coined the term *taskscape*, to denote a temporality of dwelling activities. He defines taskscape as "temporality of the landscape" and indicates it is central to archaeological studies.[4] To picture the meaning behind taskscapes, he used homologies between terms in general, versus terms with a temporal perspective. More generally speaking, we can approach land, value and labour, which have quantifiable properties, and pose the question of how much there are. But if we are to understand these general terms through their temporal settings, homologies such as landscape, use value, and taskscapes emerge. In this latter category of temporal homologies, we cannot pose quantifiable questions like how much there are, but we have to ask questions on how they were experienced by people. Therefore, taskscapes are temporal and specific to different dwelling perspectives of being in, and shaping, the world. As Ingold argues, "whereas labour is measured out in units of astronomical time, or in clock-time calibrated to an astronomical standard, the temporality of the taskscape is essentially social".[5] According to Ingold, taskscapes are not only non-quantifiable but also concern related activities such as interactivity between human and non-human entities.[6] Through studying dwelling perspectives and taskscapes we gain insight in "rhythms of human activities [that] resonate not only with those of other living things but also... the cycles of day and night and of the seasons, the winds, the tides, and so on".[7]

Figure 1. Location of Çukuriçi Höyük and other EBA 1 sites mentioned in the paper (figure: OeAI/M. Börner, Ch. Schwall).

Since his 1993 publication, Ingold himself has not cared much for the taskscape as a concept. Presently, he regards it as "no more and no less than landscape brought back to life".[8] Within the wider field of socio-cultural anthropology, the main critique on Ingold's taskscape has been the lack of clear political reflection on concurring tensions and conflicts that the intertwining of different tasks, or temporalities, entail. Within archaeology, however, the concept of taskscape has been seen as a breakthrough.[9] Recently, the critical perspective on taskscapes in socio-cultural anthropology has also taken a turn for the better. In a recent contribution to the special issue in the journal *Social Anthropology*, Gruppuso and Whitehouse have acknowledged that Ingold's concept of taskscapes "provides a powerful heuristic tool to understand the world in its own doing, consolation, and politics" and demonstrate its use through several ethnographic studies in the journal's special section on *Exploring Taskscapes*.[10] They conclude that the concept of taskscape proves useful in overcoming the distinctions between "natural and built, form and process, human and non-human", with which we can address deep entanglement of historical temporalities that are also political.[11] This more recent socio-cultural anthropological view of taskscapes as both social and political,[12] rather than exclusively social,[13] may be fruitfully explored within archaeology and socio-cultural anthropology alike. In such inquiries of taskscapes, both tasks and rest should deserve our attention, as Ingold argued,[14] in understanding how people through their "production and consumption, labour and pastimes, movement and rest... are sustaining themselves".[15] For archaeologists, that would mean inferring temporalities of activities – taskscapes – as well as temporalities of rest – 'restscapes' – from the archaeological record while simultaneously aiming to understand their socio-political context.

Figure 2. Reconstructed settlement pattern and EBA 1 architecture at Çukuriçi Höyük with a marked location of Room 53 (figure: OeAI/M. Börner; after Horejs 2016: p. 258, fig. 6).

This contribution utilises the heuristic tool of taskscapes in now revised form to understand the dwelling perspective at the Early Bronze Age (EBA) 1 western Anatolian site of Çukuriçi Höyük in four steps. First, it summarises the socio-political organisation and evidence for social inequality at EBA 1 sites in western Anatolia, followed by a short summary of the archaeological context at Çukuriçi Höyük in part two. In part three, some results from the zooarchaeological analysis are presented, which are contextualised through ethnographic evidence. Taskscapes are then discussed in part four. The questions addressed in this paper are: what are the taskscapes at Çukuriçi Höyük at the dawn of the Bronze Age like, and how can zooarchaeological data help us understand possible taskscapes and 'restscapes'? The concept of taskscapes is here understood following Tim Ingold's conception as "an array of related activities" that move through landscapes, in our case, at Çukuriçi Höyük.[16]

The beginning of rising inequality in western Anatolia during EBA 1

The EBA in western Anatolia dates from 3000 to 2000 BC and is divided into the EBA 1, 2 and 3 periods.[17] The EBA 2 period is characterised by the increasing size of settlements, the increasing prevalence and size of enclosed citadels, the appearance of elite buildings, and the rising importance of metallurgy and long-distance trade. The long-distance trade routes are known as the Anatolian Trade Network, which linked western Anatolian sites with the Near East.[18] During EBA 2, the notable material inequality of the so-called special buildings in which metals and other goods were hoarded, has been interpreted as evidence of the rise of the earliest chiefdoms in the region. These buildings can be considered material markers of social inequality between households, if we follow Price and Feinman's definition. They state that social inequality is "manifested in unequal access to goods, information, decision making, and power" as "the organizing principle of hierarchical structure in human society".[19] However, during EBA 1, social organisation remains enigmatic. Households of the emerging metalworker-traders – possibly chiefs – have been recorded at the contemporary site of Poliochni Green,[20] whereas a rather egalitarian social organisation has been proposed for Troy I.[21] It is evident that some sites already show features of social inequality during EBA 1 through the unequal access to goods such as metals, yet this does not seem to be a common feature at all sites.

Çukuriçi Höyük: site context

Located within the changing socio-political landscape was also the coastal site of Çukuriçi Höyük (abbreviated to ÇuHö; for its location see figure 1). The EBA 1 contexts from the settlement are carbon-dated to ca. 3000-2750 cal. BC and consist of an initial settlement (ÇuHö Va) and two subsequent phases (ÇuHö IV and III). Evidence of EBA 1 architecture at Çukuriçi Höyük (see figure 2 for the reconstructed settlement pattern at Çukuriçi Höyük), discovered in phases ÇuHö IV and III, show an agglutinated outline, consisting of row-houses, comparable to architectural remains identified at Troy 1[22] and elsewhere. Unlike other sites in the region, such as Liman Tepe and Bakla Tepe, the excavation at Çukuriçi Höyük has not provided any evidence for an enclosure wall, although this may be an issue of preservation. The site provided many finds of arsenical copper objects, tin bronzes, and a small quantity of silver, lead, and gold objects. In addition, numerous metalworking tools, ores, crucibles, and ovens associated with metalworking, were recovered across the site, in multiple houses. Based on archaeometallurgical analysis, it has become clear that Çukuriçi Höyük was an important EBA 1 metallurgical centre

Figure 3. The zooarchaeological assemblage of Horizon B in Room 53, objects 1-6 (figure: C. Schwall, OeAI).

in the region.[23] Yet, no central building has been identified at Çukuriçi Höyük either through archaeometallurgical analysis, pottery, textile finds, or by architectural analysis.

The lack of a special building or any evidence of the hoarding of elite goods, such as arsenical copper or tin bronzes, does not suggest unequal access to these goods indicative of social inequality or a hierarchical social organisation. Instead, the assemblage from Çukuriçi Höyük suggests a decentralised or more egalitarian social organisation, resembling Troy I.

The zooarchaeological assemblage at Çukuriçi Höyük

The possibility remains that dwellers at Çukuriçi Höyük did not display wealth through material objects such as metals, but rather through a difference in diet between households. This hypothesis is here explored through zooarchaeological methods. As we will argue in the following, social differentiation is not indicated by differences in diet at the site.

For the zooarchaeological context the EBA material, including the total basic statistics, has been preliminarily published elsewhere.[24] A total number of identified specimens (NISP) of 24,107 animal bones and molluscs with a weight of nearly 120 kg was recorded from EBA phases III and IV, in which both phases closely resemble each other in composition. Among mammals, caprines are the most numerous, with goats outnumbering sheep in a ratio 1.5:1. The higher number of goats likely reflects the dry, hilly terrain surrounding the site, which is more suitable for this species than for sheep. Caprines are followed by cattle and fallow deer, and to a lesser degree pigs. To test whether social inequality on site was visible in diet, the variability of diet across the site was compared. One room, Room 53, particularly stood out from the others, and provided an ostensibly special archaeological deposit consisting of a number of piles of young sheep and goats (largely being under one year in age). This room was split into two horizons, with the lower horizon (Horizon B) having numerous bones found in articulation, often found in small, discreet piles. In figure 3, these piles, hereafter called objects, are labelled 1-6. In addition, there was an upper horizon (Horizon A) to the room which yielded further young sheep and goat remains, but without articulations.

The assemblage contained a minimum number of individuals (MNI) of seven. Marks on the bones suggest these animals were skinned, disarticulated and sometimes filleted for their meat. The individuals represented from these objects varied from almost complete skeletons to just a couple of bones. Three individuals were only represented by the presence of the skull, or the skull and mandibles, along with a selection of lower-limb bones. The objects as well as additional faunal material from the floor surface, show a clear overrepresentation of skulls and mandibles, and non-meaty lower-limb bones generally (see table 1 for percentage weight of skeletal elements of caprines in EBA contexts and Room 53). The ages of the individuals from the faunal assemblage range from neonate in one case, to around 1-2 years old, with most being under 12 months of age. This is consistent with what was found in the rest of the room's assemblage and the rest of the site. This assemblage corresponds to the 'Meat Type A' herd management system, which is a culling strategy optimised for the acquisition of tender meat and potentially non-intensive milk production.[25] Also, marks on the bones in Room 53 closely resemble butchery marks, also found on bones from the rest of the site. If we presume a winter lambing,[26] the range of ages suggests that a large proportion of the culling took place before the proceeding winter.

As has been more fully argued in Emra et al. (2020), the lack of the meat-bearing limb-bones is due to the remains of Room 53 representing butchery discard. The young ages, as well as butchery technique seen through cutmarks is generally consistent with the remains found across the rest of the

Table 1. Percentage weight of skeletal elements of caprines, with EBA contexts from Çukuriçi Höyük without Room 53 compared to the two horizons of Room 53. Modern standard from Universität Basel, Das Departement Umweltwissenschaften, https://ipna.duw.unibas.ch/de/forschung/archaeobiologie/archaeozoologie/methodik/ [accessed 16.03.2021].

	Modern Standard	ÇuHö without Room 53 (n = 2784)	Horizon A (NISP = 286, 1.4kg)	Horizon B (NISP = 603, 2.5kg)
Skull and mandible	25,6	23,3	30,5	40,7
Ribs and sternum	11,4	9,5	8,7	6,3
Vertebrae	20,5	12	8,4	7,6
Scapula	4	5,7	2,3	3,1
Humerus	5,4	8,9	2,3	3,4
Antebrachium	5	7,4	2,4	5
Coxa	4,8	5,4	4,1	2,7
Femur and patella	6,5	6	4,2	4,6
Tibia	6,2	10,3	4,8	4,3
Autopodium	7,8	9,8	27,1	15,3
Phalanges	2,8	1,8	5,2	7

site (all contexts, with the majority of the remains coming from inside other rooms). Despite the apparently 'special' nature of the articulated remains, it is suggested that the discarded elements were left undisturbed until Horizon B was levelled, covering and preserving the remains.

The range of ages in the room represents repeated use of at least six months of activity. The overabundance of skulls and lower-limb bones in both horizons shows that the upper Horizon A was also used for the same purpose as the lower Horizon B. This indicates that the assemblage was not made by a single, special event, but repeated activity over a relatively short period of time. Whilst an argument could be made that repeated depositions of particular elements (skulls and lower-limb bones) could indicate some kind of ritual, we instead suggest that the assemblage can be sufficiently explained as being from butchery waste. The Room 53 assemblage in general shows many similarities (such as age and butchery method) with evidence found across the site, and no artefactual finds or architectural features were recovered from Room 53 that would suggest the room being in any way special. The small size of the young sheep and goat carcasses suggests that they could only be shared on a household level.[27]

The consumption of young individuals at archaeological sites is often interpreted as a signature of the elite. But if we follow Price and Feinman's definition, in which social inequality is "manifested in unequal access to goods", the zooarchaeological data from Çukuriçi Höyük does not point towards inequality based on diet, but rather to equal access to young meaty pieces and a lack of social inequality between households.[28] But the assemblage of butchery waste at Çukuriçi Höyük can be further contextualised through ethnographic studies and the heuristic tool of taskscape. What kind of taskscapes and temporal patterns can be reconstructed from the zooarchaeological assemblage at Çukuriçi Höyük?

Ethnographic case of slaughtering young domestic animals

As outlined elsewhere, an illuminating insight into social organisation can be drawn from Melanesian ethnographic evidence of groups who relied on Stone Age technology for subsistence.[29] A 'simple' analogy[30] to the Baruya great man society in the Papua New Guinea (PNG) highland fringe, documented ethnographically in the previous century, is helpful in thinking about potential scenarios in which the culling pattern at Çukuriçi Höyük may have operated.[31] The Baruya distinguished two types of slaughter: household slaughtering and the communal slaughtering of pigs.[32] They frequently slaughtered young pigs for household consumption, whereas they seldomly slaughtered pigs communally in ceremonial settings or festivities, such as the initiation of Baruya men. The consumption pattern of pigs among the Baruya is similar to Meat Type A, which was also documented for sheep and goat at Çukuriçi Höyük.[33] The Baruya did not intentionally accumulate and age their pigs to increase household wealth, as documented among big man societies in the PNG lowlands. Instead, Baruya villages gained communal, regional reputation through production of salt bars from local salt plants. The Baruya were involved and dependent on regional economies. Through regional trade, the Baruya exchanged locally produced salt bars for stone tools, feathers, shells, and other necessary items that were not available in the Baruya territory. The Baruya were not ruled by local elites or local leaders but were an example of a decentralised, non-state, great-man society.

There are a few important structural similarities between dwellers at Çukuriçi Höyük and the Baruya. First, like the Baruya, dwellers at Çukuriçi Höyük seemingly lacked local elites and local leaders. Second, like the Baruya, dwellers at Çukuriçi Höyük were craftspeople producing objects important for regional exchange. Third, both groups were dependent on a full-blown regional economy. For example, as

few sheep made it to an 'old age' at Çukuriçi Höyük, wool or woollen products (of which production is attested at the site) may have had to be acquired from elsewhere. The potential lack of locally bred sheep for wool at Çukuriçi Höyük therefore could have established an incentive for regional exchange, enabling households to trade off locally produced metals. Apart from wool, dwellers at Çukuriçi Höyük were also dependent on obsidian, which had to be procured from the Aegean island of Melos because it was not locally available.

Taskscapes in context: EBA 1 Çukuriçi Höyük

Dwellers at Çukuriçi Höyük, like the Baruya, certainly needed to balance their domestic activities between different taskscapes of subsistence. They practiced animal herding, the cultivation of plants, crafts such as metallurgical production, as well as trade, through exchange of locally produced goods for acquiring necessary or desirable non-local goods. Different taskscapes were therefore interlinked in a regional, mixed, and circular economy that was embedded in local households. As different taskscapes were co-dependent and overlapped within Çukuriçi Höyük households, an emphasis on one taskscape would simultaneously de-emphasise another taskscape necessary for household or village reproduction. Moreover, as documented ethnographically, when the river dwellers in Finnish Lapland did not perform an appropriate activity at the suitable moment, they felt that they had wasted a precious opportunity.[34] Likewise, dwellers at Çukuriçi Höyük navigated their labour and tasks through related taskscapes, which needed to be performed at the appropriate moment or season in the year. One of these integrated, temporal, and co-dependent activities can be seen by the staggered slaughter of many of that year's lambs in autumn, before the next winter, perhaps to free up labour and keep only enough animals to maintain the herd. Dwellers at Çukuriçi Höyük did not appear to have accumulated household wealth either on the hoof by allowing animals to mature, or through the accumulation of precious goods such as metals. Therefore, it remains likely that they did not gain an individual or household-based reputation, but a regional and communal one, shared by members of the metalworking community.

If we follow the approach to the seasons as rhythms that emerges in the articulation of human and non-human processes, then the culling strategy at Çukuriçi Höyük represents metronomic repetition. The slaughtering of caprines below one year of age before winter, was continually repeated over at least two horizons of the room. This metronomic repetition or unwritten rule of slaughtering caprines, with the various ages of caprines suggesting slaughter was staggered before onset of winter, fits Ingold's claim that "a task is not something you do completely of your own free will… it is rather what *falls* to you to do, an act to which you submit as indeed you must submit to the world in whose form-giving process you partake, and from which you draw your very being".[35] Therefore, we can learn from culling profiles at Çukuriçi Höyük that dwellers at this site followed the rhythm of the seasons. Seasons emerge as major, if likely not the only rhythm that organised daily lives at Çukuriçi Höyük during the EBA 1 period. If "practising one seasonal activity includes preparing for the next season"[36] then reducing the number of animals before winter could be perceived as a practice by which dwellers at this site created more rest time, or time for other activities such as for crafts in the winter. This practice of slaughtering caprines at the same time was not only temporal but also political. It prevented the accumulation of wealth on the hoof and preserved the wealth and energy needed for feeding the remaining animals over winter. It seems to prevent a scarcity in foodstuffs as well as the accumulation or unnecessary expenditure of material wealth for keeping more material wealth.[37] Therefore, culling profiles could be not only understood as proxies for temporal and economical tasks, but also as proxies for political taskscapes.

Conclusion

In this contribution, we highlighted the temporal co-dependence of taskscapes, which include related domestic activities through temporally, economically, and politically co-dependent subsistence, craft, and exchange tasks. Both among the Baruya and the dwellers at Çukuriçi Höyük, there is no evidence of intentional aging of domestic animals, either pigs or caprines. Instead, a large majority of domestic animals were slaughtered young and consumed on a household-level before winter, to create more time for rest or other seasonal tasks. This is an important indicator of decentralised social organisation, without intentional aging of animals and accumulation of household wealth on the hoof, or in other kind, as observed among the Baruya. Simultaneously, it can be seen from Çukuriçi Höyük that by understanding culling profiles as patterns and metronomic rhythms, seasons emerge as a major, but not the only one rhythm important for social reproduction. Although Baruya and Çukuriçi Höyük differ immensely in their historical, linguistic, and political situatedness, they share some typical structural traits of decentralised, great man social organisation, as presented above.

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Literature

Alram-Stern, E. & Horejs, B. 2018, "Pottery technologies in the Aegean and Anatolia during the 3rd millennium BC" in *Pottery technologies and sociocultural connections between the Aegean and Anatolia during the 3rd millennium BC*, (eds.) E. Alram-Stern & B. Horejs, pp. 3-24.

Cveček, S. in press, Çukuriçi Höyük 4: *household economics in the Early Bronze Age Aegean*, Oriental and European Archaeology Series, Austrian Academy of Sciences Press, Vienna.

Emra, S., Galik, A. & Forstenpointner, G. 2020, "On the culling room floor: butchery waste from the Early Bronze Age site of Çukuriçi Höyük", *Journal of Archaeological Science: Reports* 30. doi: 10.1016/j.jasrep.2020.102253.

Gingrich, A. 2012, "Comparative methods in socio-cultural anthropology today" in *Handbook of social anthropology*, (eds.) R. Fardon, O. Harris, T.H.J. Marchand, M. Nutall, C. Shore, V. Strang & R.A. Wilson (eds.), pp. 201-214.

Godelier, M. 1986, *The making of great men: male domination and power among the New Guinea Baruya,* Cambridge University Press, Cambridge.

Grossman, K. & Paulette, T. 2020, "Wealth-on-the-hoof and the low-power state: Caprines as capital in early Mesopotamia", *Journal of Anthropological Archaeology*, vol. 60. doi: 10.1016/j.jaa.2020.101207.

Gruppuso, P. & Whitehouse, A. 2020, "Exploring taskscapes: an introduction" *Social Anthropology*, vol. 28, pp. 588-597. doi: 10.1111/1469-8676.12789.

Halstead, P. 1998, "Mortality models and milking: problems of uniformitarianism, optimality and equifinality reconsidered", *Anthropozoologica*, vol. 27, pp. 3-20.

Halstead, P. 2007, "Carcasses and commensality: investigating the social context of meat consumption in Neolithic and Early Bronze Age Greece." in *Cooking up the past: food and culinary practices in the Neolithic and Bronze Age Aegean*, (eds.) C. Mee & J. Renard, pp. 25-48.

Helmer, D., Gourichon, L., & Vila, E. 2007, "The development of the exploitation of products from *Capra* and *Ovis* (meat, milk and fleece) from the PPNB to the Early Bronze in the northern Near East (8700 to 2000 cal.)", *Anthropozoologica*, vol. 42, pp. 41-69.

Horejs, B. 2016, "Neue Gewichtssysteme und metallurgischer Aufschwung im frühen 3. Jahrtausend–ein Zufall?" in *Von Baden bis Troia. Ressourcennutzung, Metallurgie und Wissenstransfer. Eine Jubiläumsschrift für Ernst Pernicka,* (eds.) M. Bartelheim, B. Horejs & R. Krauss, pp. 251-272.

Horejs, B. & Mehofer, M. 2015, "Early Bronze Age metal workshops at Çukuriçi Höyük: production of arsenical copper at the beginning of the 3rd millennium BC" in *Archaeometallurgy in Europe III: Proceedings of the 3rd international conference Deutsches Bergbau-Museum Bochum,* (eds.) A. Hauptmann & D. Modarressi-Tehrani, pp. 165-176.

Ingold, T. 1993, "The temporality of the landscape", *World Archaeology*, vol. 25, pp. 152-174.

Ingold, T. 2017, "Taking taskscape to task", in: *Forms of dwelling: 20 years of taskscapes in archaeology,* (eds.) U. Rajala & P. Mills, pp. 16-27.

Ivanova, M. 2013, "Domestic architecture in the Early Bronze Age of western Anatolia: the row-houses of Troy I", *Anatolian Studies*, vol. 63, pp. 17-33.

Kouka, O. 2002, *Siedlungsorganisation in der Nord- und Ostägäis während der Frühbronzezeit (3. Jt. v.Chr),* Verlag Marie Leidorf GmbH, Rahden.

Krause, F. 2013, "Seasons as rhythms on the Kemi River in Finnish Lapland", *Ethnos*, vol. 78, pp. 23-46. doi: 10.1080/00141844.2011.623303.

Price, T.D. & Feinman G.M. 2010, "Social inequality and the evolution of human social organization" in *Pathways to power. Fundamental issues in archaeology* (eds.) T.D. Price & G.M. Feinman, pp. 1-14. doi: 10.1007/978-1-4419-6300-0_1.

Rappaport, R.A. 2000 [1968], *Pigs for the ancestors: ritual in the ecology of a New Guinea people*, Waveland Press, Long Grove.

Sahlins, M. 1972, *Stone Age economics*, Aldine, New York.

Şahoğlu, V. 2005, "The Anatolian Trade Network and the Izmir region during the Early Bronze Age", *Oxford Journal of Archaeology*, vol. 24, pp. 339-361.

Thomas, J. 2017, "Concluding remarks: landscape, taskscape, life" in *Forms of dwelling: 20 years of taskscapes in archaeology*, (eds.) U. Rajala & P. Mills, pp. 268-79.

Wylie, A. 1988, ""Simple" analogy and the role of relevance assumptions: implications of archaeological practice", *International Studies in the Philosophy of Science*, vol. 2, pp. 134-50.

Endnotes

1 Helmer et al. 2007: p. 60.

2 In a socio-cultural anthropological and archaeological context, wealth on the hoof refers to caprines being used for booty, tax, and tribute to the centres. For a recent discussion of wealth on the hoof playing an important role in early Mesopotamia, see Grossman & Paulette 2020.

3 Sahlins 1972: p. 41. Domestic mode of production refers to a subsistence economy in which production and consumption are organised at the level of households, aimed at serving a household's needs.

4 Ingold 1993: p. 172.

5 Ingold 1993: pp. 158-159.

6 Ingold 1993: p. 163, italics in original.

7 Ingold 1993: p. 163.

8 Ingold 2017: p. 26.

9 Thomas 2017.

10 Gruppuso & Whitehouse 2020: p. 592.

11 Gruppuso & Whitehouse 2020: p. 595.

12 Gruppuso & Whitehouse 2020.

13 Ingold 1993, 2017.

14 Ingold 2017: p. 24.

15 Ingold 2017: p. 23.

16 Ingold 1993: p. 158.

17 Alram-Stern & Horejs 2018: p. 18, fig. 2.

18 Şahoğlu 2005.

19 Price & Feinman 2010: p. 2.

20 Kouka 2002.

21 Ivanova 2013.

22 Ivanova 2013.

23 Horejs & Mehofer 2015.

24 Emra et al. 2020.

25 Helmer et al. 2007.

26 Halstead 1998: p. 8.

27 Halstead 2007: p. 28.

28 Price & Feinman 2010: p. 2.

29 Cveček in press.

30 Wylie 1988.

31 It may appear confusing to the reader to compare the Baruya pig slaughtering practices with caprine slaughtering practices at Çukuriçi Höyük, since pigs may not be utilised for secondary products such as milk and wool, whereas caprines can be. Within socio-cultural anthropological literature on Melanesian non-state, sedentary societies, the Baruya pig slaughtering practices starkly differ from those documented among the Tsembaga (Rappaport 2000 [1968]) and others. Whereas Tsembaga (Rappaport 2000 [1968]) intentionally aged their pigs for regional competition between households and between big men, the Baruya did not, as their social organisation did not depend on the accumulation of pigs or display of wealth (Godelier 1986). Moreover, comparing different units (e.g. caprine and pig slaughtering practices) remains valid as the central question of this contribution addresses seasonal, annual cycles, and rhythms (see Gingrich 2012: p. 210). It has been previously argued that "the question of comparability... cannot be solved *a priori*, but depends on the empirical side of a problem, and how the research question is formulated" (Gingrich 2012: p. 211).

32 Godelier 1986.

33 Helmer et al. 2007.

34 Krause 2013.

35 Ingold 1993: p. 23.

36 Krause 2013, p. 36.

37 Krause 2013: p. 36.