

FREEDIVING IN ANTIQUITY

Some notes on the interdisciplinary workshop 'The Ocean Below'
held at the University of Warsaw (December 7th 2023)

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The relationship between humans and the depths of the sea has always been a complex one. Indeed, for most people the submarine space is an alien world of difficult access and even more difficult understanding. This idea of the underwater spaces as virtually inaccessible has conditioned in large measure the attitude towards the research on past human underwater engagement: for a long time, the depths beneath the surface were neglected as places of human action, conceptualisation and imagination. In recent years, a newfound interest in the relationship of humans with their environment(s) has also sparked the curiosity to investigate liminal spaces such as deserts, mountaintops and, of course, the sea. However, research on ancient freediving practices remains sparse, with few individual studies tackling the problem from a variety of different perspectives (Rodríguez-Álvarez, 2020, 2023). With the workshop 'The Ocean Below: Human Experiences and Material Culture of Freediving across Time and Space', held at the Polish Centre of Mediterranean Archaeology, University of Warsaw, the organisers (the authors of this report) aimed precisely at bringing together a group of scholars with their own individual background and expertise towards the common goal of communicating where freediving studies are at, and of establishing a baseline for future research in this field.

One of the main critiques when embarking in a study of freediving in antiquity is the scarcity of evidence for this kind of activity. While it is true that the remains of these practices are of no easy or immediate detection, they have left more traces than generally acknowledged. The work of underwater archaeologists Hakan Öviz (Öviz & Denker, 2022) and Ceyda Otozsun along the southern coast of Türkiye, as well as further research by Maria Michael (2020) in Cyprus, have shown the existence of a small but significant corpus of stone and lead diving weights that can be easily traced back, at least, to the Hellenistic period. In particular, to verify that the large stone rings could be used as weights for underwater activities, Öviz and his team tested them in actual dives, effectively demonstrating their functionality. Another interesting aspect of the finds along the southern Anatolian coast is that some of them were discovered in close proximity to shipwrecks, an association that seems to confirm the involvement of freedivers in ancient wreck salvage operations as presented by the Classical sources (Ashburner, 1909; Frost, 1968). With regard to the ancient Greek sources, Eirini Kapogianni (2023) collected a rich and specialised lexicon not only connected to diving and swimming, but also to the practice of sponge and murex harvesting.

The philological analysis of this textual evidence reveals a highly specialised activity performed by ancient sailors and fishers that resonates with an analogous scenario presented by Rodríguez-Alvarez in his theoretical approach to the topic.

Evidence from Cyprus ranging from the Neolithic to the Roman period likewise shows that the procurement strategies of fish and molluscs must have included apnoea diving (Michael, 2020). Archaeozoological studies by Canan Çakırlar further demonstrated how a diverse marine ecosystem in antiquity may have favoured fishing strategies that included freediving (Çakırlar et al., 2014, 2018; Genz et al., 2016).

The frequent exposure to cold water, as in the case of fishermen, surfers or professional divers, leaves its trace on the human body, and some of these traces can be detected also on the skeleton. In particular, a number of individuals from burials in the Paphos district were diagnosed with external auditory osteosis, a bone growth in the ear canal that is directly connected to the frequent exposure to cold water (Lorentz, 2020; Lorentz & Casa, 2021). Also related to the professional dangers of apnoea diving is the obvious risks of death by drowning. While this may be easy to detect on recently deceased individuals, it is more complicated to observe on skeletal remains. Camilla Tettamanti presented a compelling case for the presence of diatoms, unicellular marine algae, inside the bones in association with drowning in marine water. The possibility of applying this type of analysis on archaeological material was first demonstrated in a case study from the Atacama Desert in coastal Chile (Andrade et al., 2022), and shows much potential in being employed in the study of ancient fishers and freedivers. In addition to diatoms in the bone tissue, evidence for barotrauma in the skull and the presence of the so-called 'pink teeth' are further indicators of death occurring while diving.

The material remains and the textual sources are not the only places we can look for clues of an engagement between humans and the underwater spaces. Representations of aquatic activities as well as of marine fauna may be just as revealing if approached from the right perspective. Andrew Shapland (2022, p. 158) demonstrated in previous occasions how the marine animal representations in Minoan art derived from direct experience of interacting with these creatures in their natural environment. Focusing on the context of these representations, he further showed how aquatic-related activities, such as octopus hunting or deep-sea fishing, may have paralleled other initiatory practices among aristocratic youths in Minoan Crete. The symbolic importance of diving among the elites is in itself proof that freediving was not only practiced as an economic activity (i.e., fishing for sponges and murex), but occupied a relevant social role in the construction of the aristocratic identity. On a similar note, Mari Yamasaki adopted a cognitive-sensory approach to show how the submarine landscapes depicted on the inside of Minoan funerary larnakes were intended to reproduce the perspective of apnoea (free) divers. Specifically, Yamasaki maintained that the full import of the immersive perspective could be best detected by observers who had themselves experienced immersion.

The cognitive aspect of perception was further investigated by Tomasz Michalik. His ongoing study focuses on the differences in image perception through eye tracking analysis. An earlier study showed differences between expert and non-expert observers (Michalik, 2014). A similar approach was applied to the observation of ancient marine imagery by subjects with diving experience and without, and by the subsequent evaluation of eye movement patterns, fixations and verbal interpretation of the scenes. Although in the earliest stages, this research suggests the existence of discrepancies between the two groups. If proven correct, the understanding of human visual perception may become fundamental for the training of

experts (archaeologists) in the recognition of underwater imagery and underwater settings in visual representations.

The misidentification and/or misinterpretation of the evidence for underwater activities is still a major problem when attempting a study of ancient freediving. As Emilio Rodríguez-Álvarez (2020, 2023) pointed out, while many interesting pieces of evidence are starting to emerge, it is necessary to frame the research questions within a solid theoretical and methodological framework. Rodríguez-Álvarez proposes to tackle the issue by developing a model of interpretation of the archaeological record designed specifically for the study of underwater agents, taskscapes and cognitive experiences.

The concept of 'freediving ecology' is based on Arnold's revolutionary ceramic ecology model (Arnold, 1988), an approach to pottery analysis based on the premise that, as a technology needs resources to be produced, we need first to analyse the relationship between this technology and the environment before getting in other cultural subsystems such as the social or the belief. In a similar manner, freediving ecology is based on two basic prepositions: first, for freediving to flourish, a specific set of conditions needs to be achieved and, since we know those conditions, we can search for them in the archaeological, paleoenvironmental, social and economic record. Secondly, because freediving is a common human activity conditioned by the limitations imposed by the sea and human physiology, when studying this topic in different cultures and time periods of human history we are in fact studying different adaptive strategies (physical, social, cultural) of very different human communities to literally the same ecological niche.

While not negating the usefulness of a taskscape approach, Yamasaki and Çakırlar raised the question on whether a post-humanist perspective would add to our understanding of the worldview of ancient coastal inhabitants. Particularly relevant would be the attempt to surpass the western human-nature divide. Given the deeper entanglement of humans and nature in the past, a less anthropocentric way of framing the research questions revolving around underwater spaces may allow a more complete view of how ancient people thought of the non-human actors beneath the surface and of their interactions with them and with each other (Yamasaki, 2023, forthcoming).

The importance in bringing together studies such as the ones presented in this workshop could be compared assembling the pieces of a puzzle. Taken individually, the evidence for human engagement with the underwater space may appear limited and circumstantial, even anecdotal. Thus, for the organisers (and we believe the rest of the attendants as well) the most important lesson of this workshop has been that thanks to a holistic approach based on interdisciplinary cooperation and certain degree of out-of-the-box thinking in the scholars interested in this topic, the various 'pieces' started revealing a fascinating picture just waiting to be studied.

Workshop participants and paper titles

Canan Çakırlar. *Bioarchaeological and biomolecular evidence for the historical exploitation of different marine habitats in the Mediterranean.*

Eirini Kapogianni. *Emerging from lethe. Divers in ancient literature and their role in our understanding.*

Maria Michael. *Freediving as a fishing method in the archaeological context of Cyprus.*

- Tomasz Michalik. *Vision[s] of the past. Short introduction to eye-tracking as a tool for research on perception of underwater heritage.*
- Hakan Oniz. *Ancient divers and divers' weights in the Eastern Mediterranean.*
- Ceyda Öztosun. *Ancient lead weights from the Turkish Mediterranean Coastline.*
- Emilio Rodríguez-Álvarez. *Thinking as a freediver. The mindset, taskscape, and operational chain of apneists in preindustrial societies.*
- Andrew Shapland. *Underwater encounters in Bronze Age Crete.*
- Camilla Tettamanti. *Physiology and forensic considerations in freediving.*
- Mari Yamasaki. *The imagined dive. Aquariums, ponds, and bathtubs as keys to the conceptualization of underwater spaces.*

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