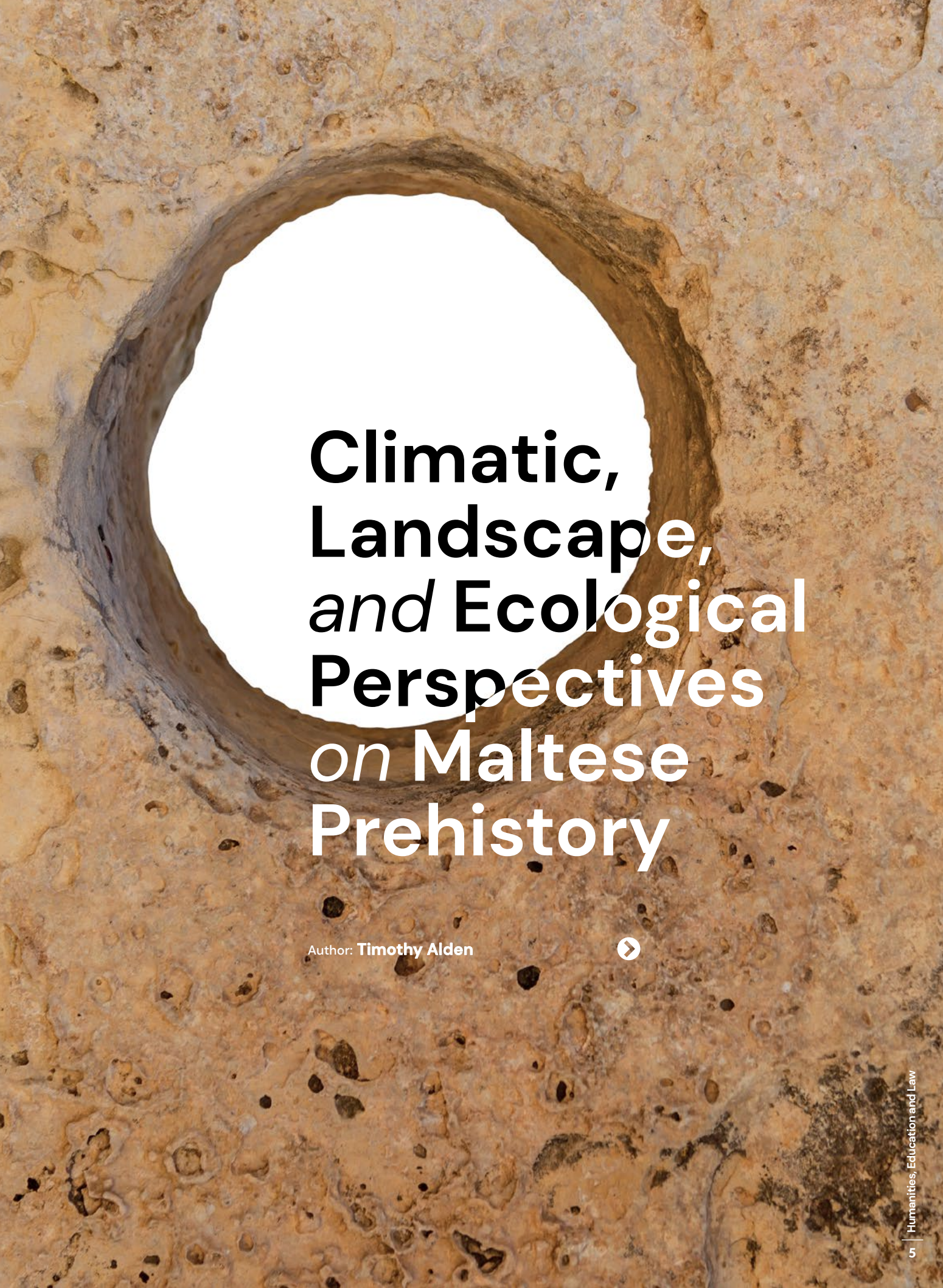
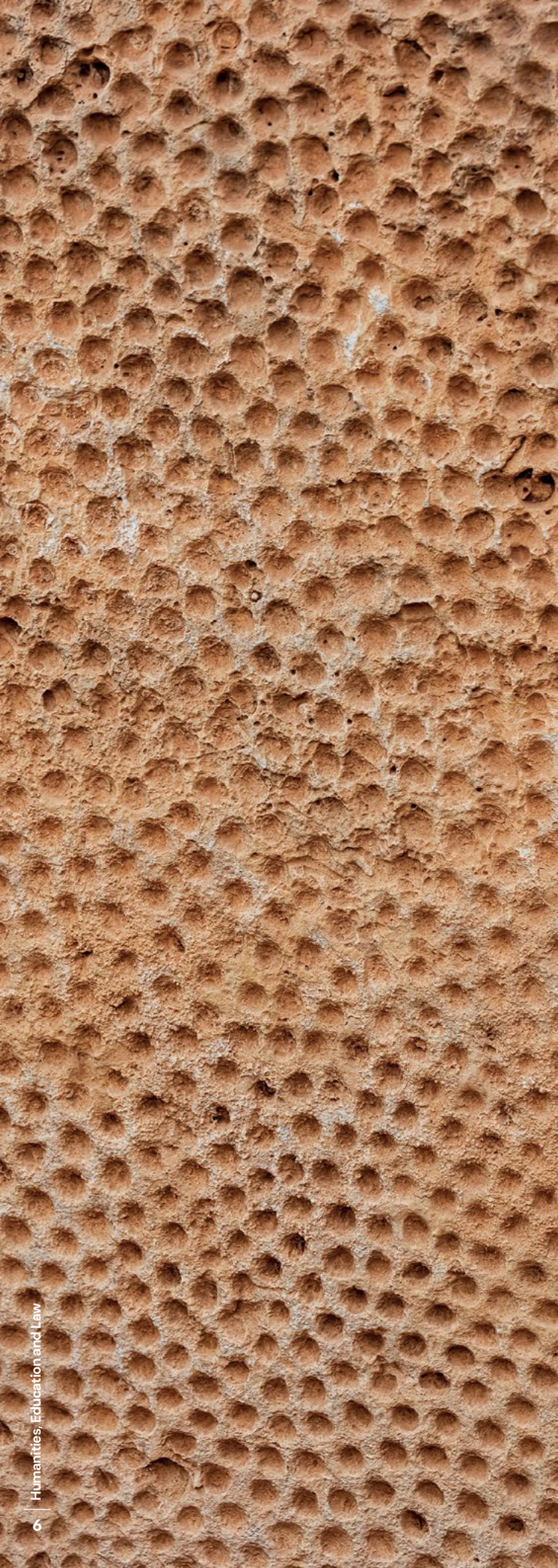




Climatic, Landscape, *and* Ecological Perspectives on Maltese Prehistory

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*It took the work of pioneering archaeologists like Temi Zammit to deduce that the Maltese megalithic temples were some of the oldest free-standing buildings in the world. Since then, generations of archaeologists have celebrated Malta's remarkable archaeological record, yet the exact timing, character, and environmental context of the changes in Maltese prehistory have remained unclear. A new generation of archaeologists, such as **Dr Huw Groucutt**, are re-examining Malta's prehistoric heritage and bringing modern scientific methods and technology to the table.*

Picture the ancient Maltese landscape, shimmering golden under the sun, with majestic stone structures unique to the islands peering over the horizon. The land, though beautiful, has its challenges – a place where rainfall is a luxury and the semi-arid climate poses survival challenges. While Malta's temples continue to hold mysteries that have captivated and puzzled people for generations, archaeologists such as Dr Huw Groucutt (Department of Classics and Archaeology) are now asking questions seldom asked before. How did early settlers survive in Malta through the various periods of prehistory?

CLIMATE AND THE COLLAPSE OF CIVILISATIONS

While we know that early Maltese settlers faced a semi-arid climate, detailed information about the historical climate and the ancient environment of the Maltese Islands is limited. We don't really know the exact conditions in which people lived from one year to another. However, we do know that 4200 years ago (around 2200 BC), both Malta and the world were struck by what is known as the 4.2 ka event. Often labelled a 'global megadrought,' the event caused significant climatic variations for over a century. It is often attributed with contributing to the collapse of civilisations such as Ancient Egypt and Mesopotamia.

In the Mediterranean, the 4.2 ka event resulted in drought in some areas but increased precipitation in others. While some areas experienced societal collapses, others like

Phoenician city-states Tyre, Sidon, and Byblos were able to adapt and fill the vacuum. The varying reactions of these civilisations emphasise that societal response to environmental changes is not deterministic. Resilience and vulnerability play crucial roles. Some civilisations were able to successfully practise climate adaptation and prosper. In looking to Malta and Gozo during this period, modern scientific methods offer hope of increased insights into how people adapted to the 4.2 ka event and other climatic upheavals over the millennia.

THE END OF MALTA'S TEMPLE PERIOD

Among Malta's most captivating chapters, the Temple Period spanned from approximately 5.8 to 4.2 thousand years ago. This epoch, hallmarked by its impressive megalithic temples, set Malta apart, with some structures like Tarxien, Ħaġar Qim, and Mnajdra standing as timeless testaments to the era.

However, as one draws closer to the 4.2 ka event, a discernible decrease is observed in both precipitation levels and Malta's archaeological footprint. The subsequent era presents a palpable void in archaeological evidence, hinting at the possibility of Malta mostly being deserted during this phase.

'Recent research has delved into the period bridging the Temple Period and the Bronze Age. What emerged was a narrative of persistent dryness, with little evidence for a significant human presence. The late Temple Period, spanning at least 200–300 years, showed a society under duress. There was evidence of 🔗



**Excavation of local sites
in collaboration with
IslandLab.
Image courtesy of
Dr Huw Groucutt**

increasing enamel hypoplasia in human remains, for example. These are distinctive lines in teeth, stemming from malnutrition experienced in infancy,' Groucutt explains.

He goes on to state that sites like the Xagħra Circle began to show mounting indications of this nutritional strain. By collating and interpreting all the available data from various researchers, he managed to piece together a story of decline, with fewer burials alongside escalating health issues. It suggests that during these dry spells, Malta was becoming an increasingly challenging place to inhabit.

EARLY AGRICULTURE

When early settlers first arrived in Malta, the islands presented a mix of vegetation types and would have contained abundant animals such as deer. Deer bones have been found at various sites, suggesting that hunting supplemented people's diet long after a farming lifestyle developed. By also looking at evidence such as pollen samples, we are able to get a clearer idea of what kind of crops people were able to grow in Malta, as well as changes over time in natural vegetation. These include the staples of wheat, barley, lentils, and peas. Farming efforts were also accompanied by animal husbandry, as early settlers managed herds of sheep, goats, cattle,

and pigs. One element Groucutt is working on is trying to determine whether there were people in Malta before farmers arrived around 7500 years ago.

One of the characteristic challenges faced in Malta and Gozo even today is soil erosion. Groucutt hopes that modern science will shed further light on how people adapted to it, building on existing evidence that material such as charcoal may have been used in some sites in Malta to enrich the soil. Indeed, evidence from Ġgantija indicates that soil manuring might have been practised there. Groucutt points out, 'There are hints of people deliberately improving soil with charcoal in Malta. Today, people sometimes use seaweed as a fertiliser, and perhaps locally, people were also doing it in prehistory. Did early settlers modify the landscape too and carry out terracing works as we do today with rubble walls? Some of the oldest walls we know about go back to the Punic period. There probably was a lot of terracing at that time. But we do not yet know if it stretches farther back.'

He also refers to evidence of water storage as another key strategy for early settler adaptation. Numerous archaeological sites reveal the ingenious ways ancient settlers harnessed and stored water, highlighting their foresight and adaptability in the face of water scarcity. The Misqa Tanks, situated near the Mnajdra and Ғaġar Qim temples, are hewn out of a relatively impermeable rock and stand distinctively apart from Bronze Age and Roman



Dr Huw Groucutt (left) and Prof. Eleanor Scerri (right) after a hard day of digging. Image courtesy of Dr Huw Groucutt

cisterns in both size and design, hinting at their possible Neolithic age. Another water storage site is to be found at the Hal Saflieni hypogeum, which features a vast cistern. Basins were strategically positioned to collect water seeping from natural fissures. Temples like Tas-Silġ and Tarxien further attest to the prevalence of water storage facilities. The location of temples such as Ġgantija also seems to be linked to the previous presence of natural springs, now largely vanished.

STONE TOOLS AND TRADE

A fascinating aspect of Groucutt's research revolves around stone tools, an area previously little explored in Malta. He is now doing surveys to try and understand what kind of rocks are available in Malta that can be used for toolmaking, as we know people used to import obsidian and other rocks from areas such as Sicily. However, without knowing what is really available locally, it is hard to know what was imported and what was not. Flint, for example, only occurs naturally in small parts of the Maltese Islands, and it is of quite poor quality. However, this poor quality is perhaps a reason that more stone tools have not been identified, as they may have been harder to recognise. As well as flint, limestone was used to make stone tools, and these can be a particular challenge to distinguish as human-made. Groucutt

explains how, 'there is an ongoing debate about how isolated the Maltese Islands really were. My impression is that they were pretty isolated. The fact that the temples only exist in Malta suggests it was a unique and distinctive society without much connection to other areas. In cases where we do have materials that did not originate locally, because they are in small quantities, they could have ended up here practically by accident, rather than recognise a pattern of trade. It's an incredible story, how people survived and thrived in this isolated place.'

LOOKING AHEAD AT THE PAST

Groucutt states that he and his colleagues are collaborating extensively with the Superintendence of Cultural Heritage and Heritage Malta to try and ensure that archaeology keeps up with the pace of construction in Malta, as many sites are identified during building projects. While this presents a challenge, he is also optimistic that modern scientific methods, such as isotope analysis and radiocarbon dating, along with further excavations, will shed new light on Malta's past and help to answer the questions surrounding how people adapted to survive.

Furthermore, he states that as people have been so focused on the temples, there is a lot of scope to try and understand Malta during other periods and in the ➤



Dr Huw Groucutt excavating a Maltese prehistoric site.
Image courtesy of IslandLab

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landscape more widely, away from the famous temples. Periods such as the Bronze Age are currently poorly understood. This period would see the first boats with sails in Malta, as before that, early settlers were probably using simple paddled canoes. It is for this reason that further excavations are being carried out, especially as many of the well-known major archaeological sites in Malta have already been disturbed and cleared. There are also major questions about what Malta was like before the Neolithic and whether people might have been here before they were farmers.

'We are currently excavating some fantastic sites in collaboration with a European Research Council Funded project called IslandLab, led by Prof. Eleanor Scerri. This project looks at ecology over very long time scales, including studying things like the bones of mini-hippos in Għar Dalam, and tries to understand the impacts people had on landscapes and ecosystems over time.

In spite of so much archaeology already being done, there is still so much to do. For every time period, there is so much more which modern scientific methods and international practices can bring to light,' says Groucutt.

Early settlers in Malta and Gozo present a unique narrative on how ancient societies responded to climatic shifts, especially challenging phenomena such as droughts. It is not yet clear if there was an unbroken line between early settlers and the Bronze Age populations which came after, but in understanding the challenges and sacrifices made then, we can better comprehend the profound effects of a changing climate which we are facing today. Perhaps we can draw a parallel to the difficulties of the 4.2 ka event and recognise the need to truly rise to the challenge of climate change. Archaeology allows us to learn from the Maltese Islands the best way to survive challenges. **T**