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REVIEW

The lower Yangtze River and Aegean Sea in the third millennium BC: parallel cradles of civilizations

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Abstract
A critical assessment of the heterogeneous prehistoric societies of Liangzhu in China and Cyclades in Greece, forged by differing geographical, ecological, topographical, demographic, and historical conditions, is proposed. Through juxtaposition, the obtained contrasting image reveals the textures of cultures and leads to-mutual understanding. For the farmers of the Yangtze River delta and the islanders of the central Aegean Sea waterborne travel encouraged a culture of exchange, long-distance relationships, and maritime or riverine navigation. Despite structural similarities, both communities would have been perplexed at the alienness of the populous settlement of Liangzhu within the lush evergreen surroundings, the masterful jade craftsmanship, the network of Cycladic villages surrounded by meagre land from which a living was eked out and hard rocks mined for rare minerals, and the intrepid sailing of dangerous Aegean waters for trade, community, marriage, and war. Activities and mentalities of distant cultures are classified as parallel items. The prehistoric inhabitants of the Yangtze delta's habitat and the deep blue of the Aegean Sea left us with unique a cultural heritage that promotes its investigation, interpretation, and dissemination using modern technology. Cultural tourism and ecological protection with interpretation and integration in the context of tangible and intangible cultural heritage are linked to sustainable development goals Yangtze River delta and the Cycladic islands act as heritage regions. When properly valued, they are assets for societal cohesion, education, development, and understanding of the past, give reason to the present, and aid for the future.

Keywords Cycladic culture · Liangzhu Culture · Neolithic · Early Bronze Age · Comparative archaeology · Sino-Hellenic studies · Islands · Yangtze · Prehistoric · Minoan · River Delta · Jade

1 Introduction

How is a riverine and lacustrine society living in the lush and hilly wetlands of the humid subtropic climate of the Lower Yangtze River Delta and the surroundings of Lake Tai 太湖, comparable to the mountain-and-sea society in the windy and warm, semi-arid Mediterranean climate of the islands and coastlines of the Aegean Sea? We cannot draw a meaningful evolutionary and diffusionist line between the Neolithic and Early Bronze Age Aegean Sea and the Neolithic Yangtze River. However, in a reaffirmation of the marvel at how human ingenuity copes with and builds for itself a world full of relations, productions, and meanings in diverse ecological contexts, we can examine the details behind the building, manufacture, and conceptualization of private, public, and community spaces, productions, and ideas.

The Liangzhu 良渚 Culture (3300–2300 BC) represented the Yangtze Delta ‘s height of prehistoric cultural and social development. The Liangzhu City (31° 14′ 120.8’’ N) is

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considered one of the earliest urban centres of prehistoric China and had a large sphere of influence near present-day Hangzhou 杭州 City in Zhejiang 浙江 province (Chen 2022) (Figs. 1 and 2). Predominantly rice farmers, the Liangzhu is an example of a lacustrine subtropical culture with a south-east Asian river-delta material culture (Shu et al. 2010; Zhang et al. 2020, 2021; Li et al. 2010). Liangzhu people inhabited tenon-and-piles or stilts wooden houses surrounded by a well-managed and engineered landscape with a biodiverse ecology, where fish, birds, crocodiles, and much more could be hunted (Ji et al. 2021; Wang et al. 2010; Zhang et al. 2021; Liu et al. 2017). Whereas the Aegean culture of the Cyclades

Fig. 1 Satellite View of the landscape: Liangzhu museum and archaeological site, and Lake Tai lake in northern part, between the Yangtze (north) and Qiantang (south) 钱塘江 rivers. Image from Google Earth

Fig. 2 Aerial view of the Liangzhu site exhibits its magnificent achievements in agricultural civilization in the Yangtze River basin (Source: UNESCO World Heritage Site, copyright: © Hangzhou Liangzhu Archaeological—Site Administrative District Management Committee)

sits on a scattering of islands in the middle of the Aegean Sea (35–40° N), Greece. The islanders of the Cyclades lived on craggy outcrops with thin soils and low water tables. Nevertheless, they formed a society of dispersed homesteads, hamlets, and stone fortified villages marked by strong seafaring traditions, inter-community relations, and an apparent lack of a dominating decision-making centre, as is indicated by the absence of large urban settlements, palaces, or ultra-rich burials (Fig. 3) (Renfrew 1972; Broodbank 2002; Cline 2010; Koehl 2016).

In the current trend of Sino-Hellenic and archaeological comparisons, academic interest remains low while public interest has consistently grown. Beyond needing to mend this discrepancy between scientific output and preoccupations and public interests, most Sino-Hellenic comparisons focus on classical-era texts and arts of Imperial Dynastic China and Antiquity (e.g., Lloyd and Sivin 2002; Tanner 2009). As far as archaeological comparisons between the body of work involving prehistoric societies of China and Greece, there are virtually no substantial published works available beyond the general methods and approaches proposed by Trigger (2003) and Smith (2011). Thus, while Sino-Hellenic comparisons enjoy a degree of interest through studies of philosophical and scientific treatises, archaeological interest in comparison has remained narrowly focused on panhumanist attempts to find normative laws of human behaviour. As such, the Liangzhu-Cyclades cultural and archaeological comparison is a small but vital step towards providing Sino-Hellenic studies much-needed material and environmental contexts and approaches, as well as toward reigniting the cause of archaeological comparisons by demonstrating the important hermeneutical, analytical, and interpretational value of distant cultural comparisons. The Liangzhu, dating to the third millennium BC, is firmly a society of the Late Neolithic Age in China (3000 – 2000 BC) and is contemporaneous with the Early Bronze Age Mycenaean or Helladic civilizations on the Greek mainland (3200/3100–2050/2001 BC), the Cycladic on the islands (2700–2160 BC), and the Minoan Civilization in Crete (3300–2000 BC).

Although contemporaneous, the natural environments of the Liangzhu and Cycladic cultures share few practical similarities. Yet, through a comparison of the archaeological data regarding settlement patterns, technological and engineering achievements, social and religious behaviours, and more, several observations emerge that highlight their particular relationships to their environments. These highly contrasting societies and environments demonstrate through their particular material articulation of their nature and habitat relationship striking realizations about presumed truths regarding human–environment adaptations. Therefore, a curated selection of archaeological facts and environmental features will allow for revision of low to high-level interpretations, middle-range theorems, and accepted paradigms. In both cultures, the archaeology of ritual and religion is a vast subject encompassing material of certain configurations from diverse contexts, materiality, periods, and areas (Insoll 2012). Archaeology is after all the study of human behaviour through material culture, and behavioural change was likely a driving factor in the evolution of our species. Environmental impact on ingenuity, inventions, and development in everyday practices and skills is evident in past cultures (Tryon et al. 2010). Attempts at interpretations of both cultures' aspects have been presented from tangible and intangible culture remains and ritual remains (Hendrix 2003; Liveri 2008; Li 2022).

The research on the changes in materials and technology still raises important theoretical questions for cross-cultural studies of cultural interaction, technological transmission, and sociopolitical change, subject to discoveries, and it is ongoing in both cultural eras in the Aegean and China.

2 The Liangzhu Culture

The Liangzhu site is a Late Neolithic site in East Asia that could be considered an early state society, famous not only for its highly developed material culture but also for the level of landscape transformation. The Liangzhu culture, characterized by its richly ornate jade craftsmanship with human-and-animal-face motifs, large palace structures, and hydraulic infrastructure (Zhuang et al. 2014), is hailed as one of the last, most important, and memorable Neolithic cultures of China (Liu et al. 2019a). Urban centres such as the Liangzhu City emerge during the late Chinese Neolithic (Huang 1992; Zhang and Hung 2008). Their jades, ceramics and stone tools were highly sophisticated (Renfrew and Liu 2018). The jades are accompanied by a variety of small jades and beads and are found buried, often in great numbers, in graves of the elite, and there is some indication they were used in the symbolic ranking of individuals (Loewe and Shaughnessy 1999).

The Liangzhu City archaeological site is thought to have served as a political, economic, cultural, and religious centre of China's last Neolithic jade culture. While for many in the West it remains a mystery, Liangzhu is well known in China for its fine jade-crafting industry (Rawson 2002). With its massive, well-structured earthen palatial compound and recently discovered hydraulic system (Liu et al. 2017; Zhang et al. 2021) this culture possessed advanced agriculture, including irrigation, paddy rice cultivation and aquaculture (Renfrew and Liu 2018). Houses were often constructed on stilts, on rivers or on shorelines (Fuller et al. 2007; Zhuang and Du 2021; Sit 2021). Linked up through an extensive crisscrossing system of rivers and canals, the ancient urban centre of Liangzhu is essentially a lakeside settlement (Fig. 2).

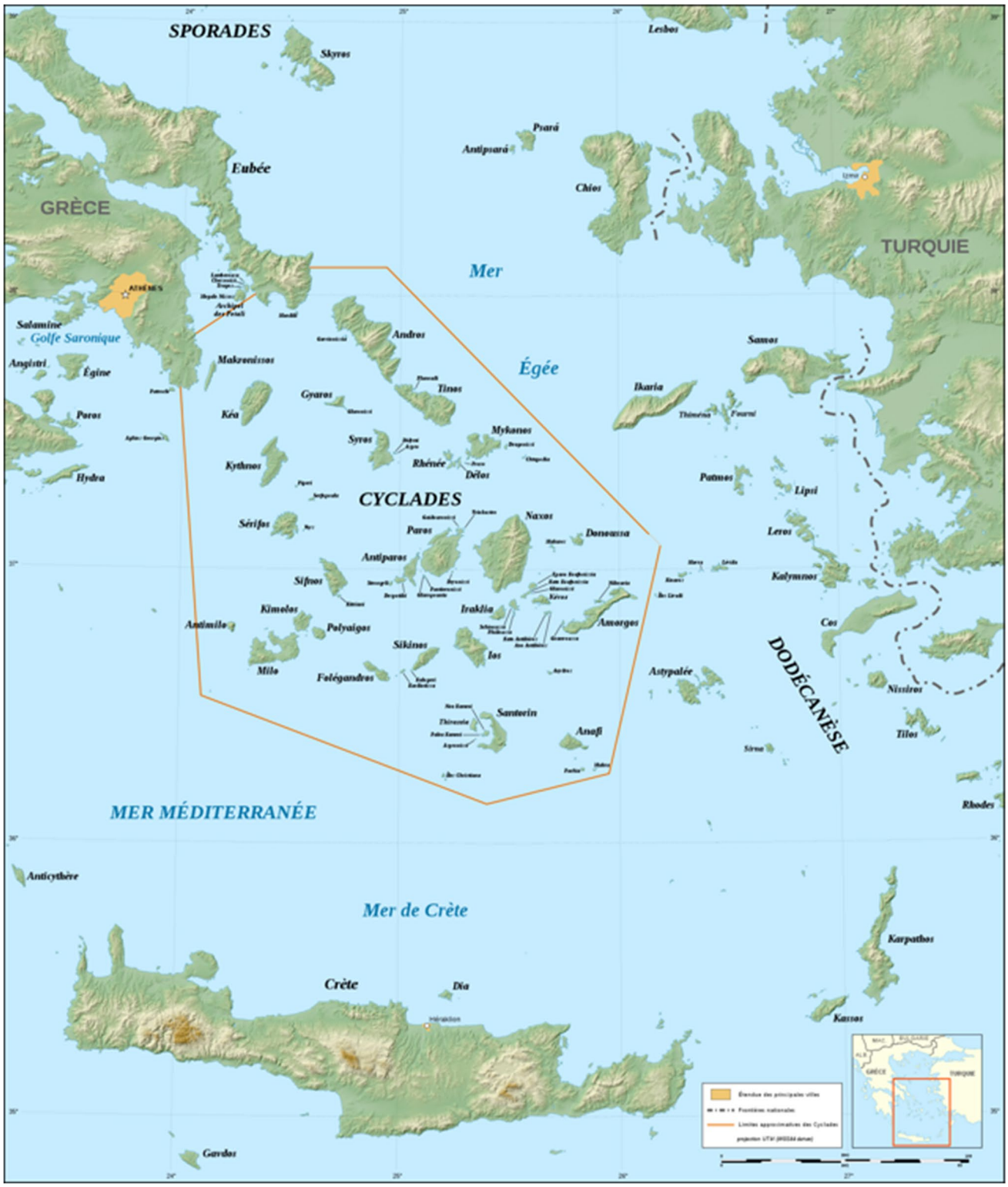

Fig. 3 Map of the Aegean Sea with the Aegean islands in Greece and their part of Cyclades (source: Gaba, E / CC BY-SA 3.0) https://commons.wikimedia.org/wiki/File:Cyclades_map-fr.svg

The Liangzhu Culture spreads across the Lower Yangtze River delta, around modern Liangzhu Town and Hangzhou. The Liangzhu Ancient City is located in a wetland environment on the plain of river networks flanked by the Daxiong 大雄山 Mountain and Dazhe 大遮山 Mountain of the Tianmu 天目山Mountain Range (Liu et al. 1992) (not unlike the Aegean cultures which were located on the coasts of mountainous islands and had developed skilful navigation and trade) (Fig. 3). It is surrounded by a buffer zone covering nearly 100 sq. km comprising five heritage sites – Yaoshan 瑶山, Tangshan 塘山, Xunshan 荀山, Huiguanshan 汇观山 and Yaojiadun 姚家墩. In fact, the Liangzhu people navigated 600 sites spanning northern Zhejiang province and southern Jiangsu 江苏 province, with half of them in the vicinity of Liangzhu City and mostly located near rivers. The city is a large walled town of canals, rivers, and lagoons, linked to a wider regional network of settlements, production areas, and large hydraulic works in the north. Liangzhu is a seemingly populous, developed, and stratified society. Cemeteries at Yaoshan and Fanshan 反山 show that certain individuals buried with locally-produced, richly ornate jade burial goods must have had important and powerful positions in Liangzhu's elite.

The information about the daily activities of the Neolithic settlers along the banks of the Yangtze River and its tributaries is derived from archaeological remains (Fig. 4). In both Zhejiang and Jiangsu provinces, the Neolithic cultures are typical of lacustrine, wet, and woodland agriculture which include rice farming (developed after 5600 BC) (Zhong et al. 2007), water chestnut and melon cultivation, cattle and buffalo raising, hunting of game, and fishing (Qiu et al. 2016; Guo et al. 2017). At Maoshan 茅山, the well-structured

Fig. 4 Modern reconstruction of daily activities at a Liangzhu Culture settlement on a tributary of the Yangtze river at the Liangzhu National Archaeological Site Park, Zhejiang province (children at the lake bank, woman with spinning loom, wheel-made pottery and pottery kiln, ploughing, hut made of straw, etc.) (I. Liritzis © 2013 at the Park with permission by local Park authorities to Ioannis Liritzis during his official visit as nominator to the Shanghai Archaeological Forum)

paddy fields grew exponentially in size over the centuries and, by the late Liangzhu phases, reach between 1,000–2,000 m2 and included *japonica* and *indica* types (Tanaka et al. 2020; Ma et al. 2018). Furthermore, after the introduction of the potter's wheel the Liangzhu craftsmen produced a fine black slipware of various shapes, such as *ding* 鼎 tripods, *gui* 簋 jars, occasionally painted red or with bird or fish motifs. A wide array of other activities such as bamboo, silk, and hemp, small utensils for daily and ritual use were also present craft industries whose apex is represented by the jade production. Lastly, proficient navigation on various crafts is evident through discovered boats and oars on embankments as well as wooden piers (Li et al. 2010).

During this late Neolithic period, ca. 3000 BC, several major social changes take place. Among the most important changes is that social stratification becomes increasingly visible. The Liangzhu City displays a degree of social complexity with power and wealth concentrated in small elite groups (Liu and Chen 2012; Shelach and Jaffe 2014; Kidder and Zhuang 2015). Furthermore, this city was likely settled and developed with a specific purpose in mind, as very few earlier remains have been found (Underhill 2013: 579). The major distribution of elite tombs from the third to the early first millennium BC in China suggests that this ritual assemblage and the specialized religious knowledge associated with it help to define elite exchange networks and ritual traditions. We see significant evidence for portraying aristocratic position with a graded set of libation assemblage in the Late Shang period (Renfrew and Liu 2018).

The large Liangzhu city and city wall, its six gates, foundations of large architecture, tombs, altars, residences, docks, workshops, earthen platforms of rammed earth, and large postholes in the central area suggest that this was the core palatial context of the Liangzhu Culture in the area. The wall implies either defense from conflicts, display of power, or flood control. Some constructions are anti-flood measures, such as dam-like sites to the north. Liangzhu presided over a large network of satellite, secondary centres in the region (Liu et al. 2019a).

Liangzhu sites tend to occur in clusters around a central place, which can be identified through either a large palace or public structure or an elaborate burial (Liu and Chen 2012). In small tombs, no offerings are found, but, in large tombs, up to 100 jade or ceramic objects are found (Childs-Johnson 2019). Numerous jade objects are found in elite burial sites throughout the area (Jiang 1999). Jade shows geometrical forms, carved with human and animal shapes. Most are *cong* 琮 tubes and *bi* 璧 discs (Jiang 1999; Liu 2003). Amongst the jade artefacts are two distinct types of ritual jades: a flat perforated disc known as *bi* 璧 (Fig. 5) and square tubes with round bores (*cong* 琮) (Fig. 6), as well as flat axe shapes (钺 *yue*) (Sullivan and Vainker 2018). Liangzhu *cong* was imitated or repurposed in other Neolithic cultures for centuries thereafter (see Chen 2002: cat. no. II-07; Lally 1994: cat. no. 19, 2018: cat. no. 24). Some ceramic vessel types resemble those of the Aegean Early Bronze Age (Figs. 7 and 9).

Fig. 5 Jade disc, or bi (Fanshan M23:23), Liangzhu culture, c. 2500 B.C.E., source: UNESCO World Heritage whc.unesco.org/en/documents/166316, copyright: © Zhejiang Provincial Institute of Cultural Relics and Archaeology

Fig. 6 Jade Cong (Fanshan M12:98), Liangzhu culture, Neolithic period c. 2500 B.C.E. Source: UNESCO World Heritage: whc.unesco.org/en/documents/166314, copyright: © Zhejiang Provincial Institute of Cultural Relics and Archaeology

The Liangzhu Culture and the Taosi 陶寺 Culture in the Yellow River region, as well as several other Neolithic cultures, declined after the third millennium BC (Zhang et al. 2015). The disappearance of Liangzhu in ca. 2250 BC may be due to several reasons: internal crisis due to excess spending on jade production and monumental

Fig. 7 **a**) Pottery unearthed at Bianiashan site, source: UNESCO World Heritage whc.unesco.org/en/documents/166318, copyright: © Zhejiang Provincial Institute of Cultural Relics and Archaeology, **b**) Pottery Jar of the Liangzhu Culture, Shanghai Museum Pottery Gallery, photo by: Gary Lee Todd Ph.D

structures, Longshan influence (, environmental disaster, flood, or marine transgression (Li 2018; Wang et al. 2018; Yang et al. 2006; Liritzis et al. 2019). However, the flood control constructions and silt layer over the Liangzhu cultural phases at the Mojioashan cluster support the flood hypothesis.

The impact of the late Neolithic culture of Liangzhu continued to be felt centuries later and visible in the early Bronze Age centers such as Zhengzhou (Liu et al. 2019b) and late Bronze Age centers, such as Anyang, the capital of the late Shang 商 dynasty (Barnes 2018). The ceramics, formed from reddish brown clay, share common characteristics with previous cultures in China and, at a glance have some resemblance with Western Asian and Mediterranean ceramics. Diffusion of styles and technology in prehistoric periods across Eurasia is likely an important field of inquiry in the forthcoming. The banal use of ceramics, drinking, cooking, storage, or burial, cover a large array of regular human activities and interest and therefore consist of an important element of archaeological inquiry and comparison. Furthermore, ceramics from China, Greece and anywhere in the world often possess a pleasing aesthetic that appeals to people everywhere as they speak of a emotive connection of the object with clay, hands, and imagination of individuals.

2.1 The early Cycladic culture

European, Asian, and African bio-geographical history and evolution intersect in the Eastern Mediterranean, and the Aegean Cyclades is a unique insular cultural system that emerged from these physical and historical conditions. The study of settlements and cemeteries spanning the 3rd millennium BC forms the core of the research into the Early Bronze Age Cycladic culture (ca. 3200 to 2500 BC) which is broadly contemporaneous with the Late Neolithic Liangzhu culture (Coleman 1992; Cadogan 1983). The Cycladic settlements are scattered across the Aegean and never exceed a few hundred inhabitants. Spread over a large area, it is estimated that somewhere between 10,000 to 30,000 islanders occupied various islands at various times. It is much unlike the Liangzhu culture which is characterized by a large density of population and concentration into centres and sub-centres. In this uninviting landscape of craggy islands, occupied by these Cycladic islanders whose culture stems far into the Neolithic, craftsmen produced delicate and harmonious artforms that left a deep impression on the heritage of Greece. The Aegean was also the birthplace of Bronze Age societies of the Mycenaeans and the Minoans, both on the mainland and the island, and is sometimes referred to as an "Aegean Civilization" (Cullen 2001).

The Cycladic civilization is one of three Bronze Age cultures that are broadly contemporaneous with the equally famous Mycenaean and Minoan Civilizations of the mainland of Greece and Crete, respectively. Traces of the origins of classical and modern Greeks are often believed to stem from this cultural triad (Lazaridis et al. 2017).

In the Early Cycladic phases, the islanders occupy the cluster of approximately 30 islands in the southern Aegean Sea in Greece. The islands are on average 75 square km and in total consist ca. 2580 square km. Its cultural influence is felt in Crete, the Greek mainland, and in the north Aegean islands of Lesbos, Lemnos, and Chios. The Cycladic islands have been an enduring link between the Eastern and Western Mediterranean worlds, Crete, Anatolia, and the Greek mainland. Albeit poor in farming, the islands' complex geology is born out of seismic and volcanic activity. They are rich in valuable minerals such as gold, silver, and copper from the islands of Siphnos, Seriphos, Kythnos, and Keos, as well as lithics such as flint and obsidian from Melos, and marble from Paros (Bintliff 2012; Pullen 2008) (Fig. 8).

Surrounded by the scintillating Aegean waters, the Cycladic islanders lived in modest settlements and divided their time between farming, animal-raising, fishing, and sea voyages (Figs. 3 and 8). Domestic animals included sheep,

Fig. 8 The regions of major development of the early Cycladic and Minoan cultures ca.3,200 to 2,200 BC, and surrounding areas. (I.Liritzis © 2020)

goats, pigs, and cattle. A network of small hamlets stretched far afield and was linked together through risky, but vital, sea voyages. The Cycladic people practised polyculture, with a focus on olive, grapes, and grain farming, supplemented with fishing and with pastoral activities and secondary products. It was a typical farming life of the Mediterranean world. Farming and raising domesticated animals were the main activities, supplemented by fishing, thanks to boats. Carvings on fortification walls and rock carving of longboats suggest marine mobility (and so shipwrights). Inhabiting stone-built or mudbrick houses (unlike the houses on stilts of the Liangzhu culture), the people were surrounded by a carefully maintained and delicate agricultural world and rich marine and mountain ecosystems. Likely descended from the Neolithic and Early Bronze Age, the Aegean civilization was born as the islands were occupied by Neolithic colonizers during the period ca. 5200–3200 BC (Cline 2010). The craftsmen from the Aegean islands worked a variety of materials such as copper, silver, and lead, as well as obsidian, and manufactured a variety of tools and weapons.

The Early Bronze Age site of Strofilas on Andros, a large settlement on a cliff, is one of the earliest fortified settlements (Liritzis 2010). Engraved images depict the trappings of the islanders' lives, with people, animals, fishing, birds, boats, and other symbols. These are the earliest depictions of seagoing boats and would not be found again until the famous depictions of longboats from the ceramic vessels ("frying pans") from the Chalandriani cemetery on Syros (Marthari et al. 2017). These vessels could sail up to 20 km a day and carry a modest cargo of grains, cattle, goods, and so on. These mariners should also be understood as pioneers in nautical technology, whose culture would have strongly figured maritime themes, beliefs, and ideology.

This rather unstratified society with no clear indicators of kingship or state complexity, scattered and dispersed throughout the Aegean Sea, nevertheless formed a strong cultural cohesion through family links and produced unique pottery and designs. Since the Neolithic, the Melian obsidian trade circuit tells us that the people of the Aegean were accomplished sailors (Laskaris et al. 2011; Liritzis et al. 2004). Ceramic production and a flourishing "international spirit" was created and spread outwards to Crete and the mainland in cultural influence and imitation (Renfrew 1972). The cultural assemblage includes "sauceboats" (pottery, sometimes metal), pedestal-based collared jars, "frying pans", metal weapons, jewelry, and the bulk of the famous marble figurines. Some Early Minoan pottery types are shown in Fig. 9. Of particular mention is the bird-like shape elongated neck of ceramic jars in both cultures.

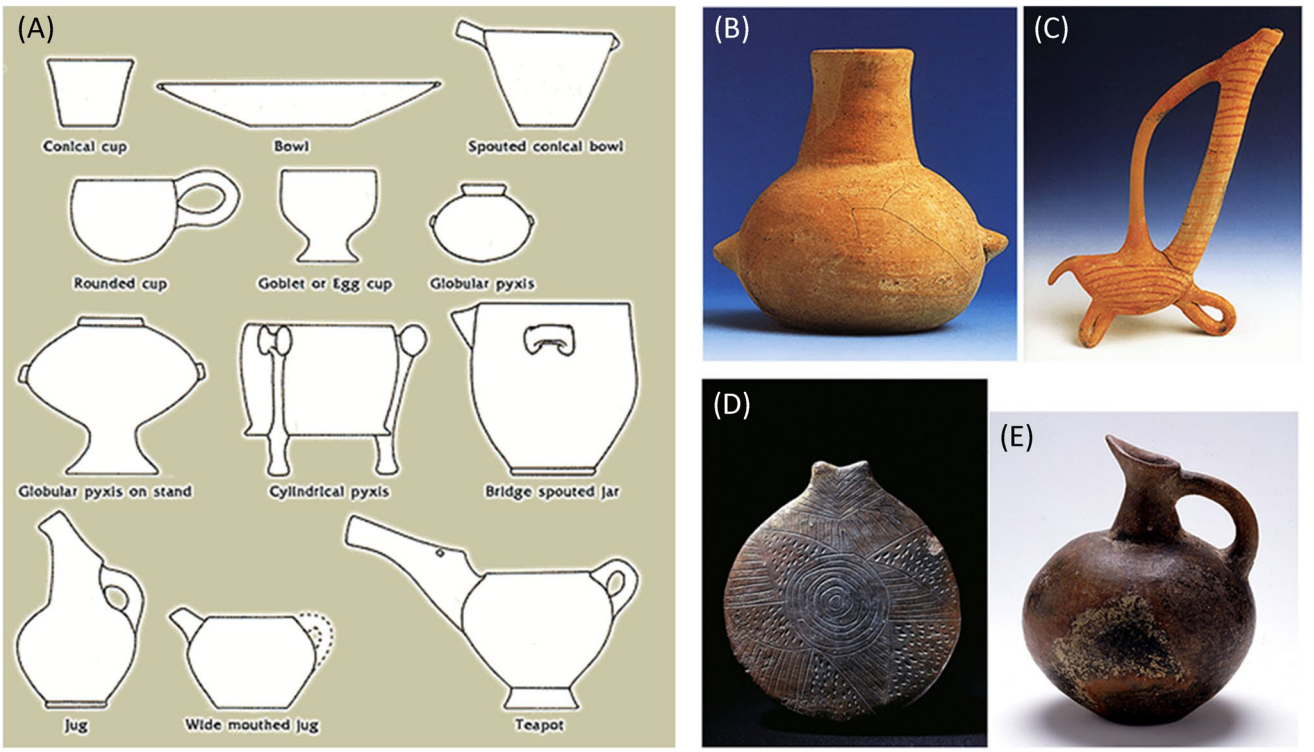

Fig. 9 **A**. Early Minoan vases (Betancourt 1985, Fig. 17); **B**. High-necked round vase. Final Neolithic—Early Minoan period (Mitsotakis Collection, Coll. No. 279, Ministry of Culture, Archaeological Receipts Fund (Marangou 1992: 68, no. 12); **C**. Bird-shaped vase with Koumasa style decoration, Early Minoan II period (C. Mitsotakis Collection, Coll. No. P 345 (Marangou 1992: 97, no. 69); **D**. Frying pan clay vessel has been interpreted as calendrical device by Tsikritsis et al. (2015). Early Cycladic I-II, Kampos phase, Museum of Cycladic Art; **E**. Nostrum type prohous clay Early Cycladic I-II—Kastri Group, Museum of Cycladic Art

In the Cyclades island complex, a unique island culture which attached deep meaning to the sea and its seafaring tradition emerged. Unsurprisingly, tales of overseas military and diplomatic expeditions, business ventures, and arduous return journeys are expressed in several epic cycles like the Argonauts and the Homeric epics. These are stories conjured up by seafarers who sailed the islands and coasts of the Aegean and far beyond and for whom performing such journeys was a core cultural trait. When compared with the exorbitant monumentalism of contemporaneous Bronze Age kingdoms, such as the Hittites, the Egyptians, the Mesopotamians, the chain of modestly-sized familial hamlets perched on small islands are comparatively unimpressive (Bietak and Czerny 2007). Yet, the allure of their modest lives is a poignant reminder of the enormous wealth and diversity in human society, which produced highly artisanal works and world-famous tales. How then did this fairly mysterious culture living in arid islands produce such refined art?

There is an abundance of marble in Greece and is a choice material for the manufacture of the iconic Cycladic marble figurines. The most common form is a signle, full-length female figures with her arms folded across the front and are referred as "FAF" figures (Folded-arm figure(ine)) by archaeologist. They display sharply-defined noses, smooth and blank faces that, at least in some case, were painted as the evidence suggests. Many of these priceless artefacts were sadly looted over the centuries and their archaeological contexts were not recorded, but were likely burials (Fig. 10).

Crucially, the Aegean Sea has been historically a hub between the eastern and western Mediterranean. The Aegean islands were a staging ground where people from the Aegean, the Mainland, Anatolia, and northern Greece, and largely between Europe and Asia, met and interacted (see Fig. 8). Yet, during a contemporaneity, attitudes, needs, observations, and imitations are common human aspects for all people in the world. It is noteworthy that certain shapes appear in distant cultures with no indication of exchange or diffusion. The shape of tripods constituted a specific group of pottery within the Bronze Age Aegean tradition. The shape was typically associated with ritual and cooking activities (Pareja 2013). The Early Minoan (EM) period was one of development in Crete: the population increased, and as a result, villages grew rapidly, as did the demand for goods (Branigan 1970: 1–15; Betancourt 2007: 30–31). Ceramic tripod vessels, which were mimicked later in bronze, are also found in the Liangzhu culture. The use of three feet on

Fig. 10 Cycladic figurines, of the FAF type. **A**) from the National Archaeological Museum of Athens photograph available under the Creative Commons, source: https://commons.wikimedia.org/wiki/File:Cycladic_idol_02.JPG, and, **B**) from Cycladic Museum, Athens. Cycladic figurines are certainly the most enigmatic, abstract, and evocative objects from Greek prehistory, that also inspired the art pioneers of abstraction and cubism of the early twentieth century, photograph AthensInsider **C**) Harp Player, found in Amorgos, ca.2500 BC, photograph available under Creative Commons, source: https://commons.wikimedia.org/wiki/File:Harp_player,_Cycladic_civilization_-_Greece.JPG

bulbous vessels likely used for cooking or warming liquids, or for pouring during social or ceremonial events, was a practical solution and a desirable product in many cultures in the world. Specific functions associated with tripod usage and meaning may be avenues for interesting comparative questions.

Crete, the southernmost island of Greece is also one of the southernmost regions of Europe and the Aegean archipelago. It was the home of the Minoans who constructed well-designed water supply and sewage systems in their many settlements. Several examples of ancient hydraulic works and related hydro-technologies are documented in Crete (Markonis et al. 2016) and present a society whose water management and technological knowledge goes far beyond what is typically associated with prehistoric societies.

According to archaeological evidence, during the Early Cycladic period the islanders were mostly settled on hills by the sea. They gradually move further inland and upland and their settlements became increasingly more defensive, indicating a certain loss of security against threats combing from the sea due to competing factions and emerging civilizations, ie: the Minoans. In later phases, heavily Minoanized settlements are found near the sea indicating their use as Minoan trade centres. During the Early Minoan (EM) I-IIA

(ca. 3000-2200BC), Crete and the Cyclades maintained a strong relationship, however from the EM IIB, there is an increasingly 'independent' Cycladic style resurfacing, which also coincides with the Cretans' ability to engage with more distant partners (Branigan 1970: 1–15; Fitton 2002: 37–65).

Finally, the dispersed settlement pattern is not however an indication of an inability to develop into complex states, nor is it a requirement for high-level ingenuity and craftsmanship, or an end in itself along a linear progressive model. For the Cycladic islanders, there are no wealthy tombs. Virtually all graves are simple cist graves. In Liangzhu, there are also only small tombs, but some contain large amounts of prestige burial goods in the form of ceramics and jades. In that respect, the Early Cyclades do not resemble the Liangzhu social elite structure. Both culture have experienced different long-term human-climate interactions, a mainstream phenomenon throughout the Anthropocene (Zhen 2021; Kidder and Zhuang 2015).

In fact, the complex social relations between people should be understood firstly as a successful risk-spreading response whereby a single settlement should not concentrate all powers. It disperses the unpredictable but known dangers of droughts, harvest failures, earthquakes, volcanoes, and other natural disasters or human aggressions which have been well-recorded in the history of the region, thus, ensuring cultural resilience through adaptiveness and innovation as cultural, political, and environmental changes metamorphose the ancient human cultural landscapes. The social networks formed a type of resistance to these challenges and could explain why prestige objects are spread throughout the region. A loosely "egalitarian" social structure seems to have dominated, in the sense that there were no institutional or centralized power and decision-making centres, nor a clear elite social class. Discrepancies in wealth, status, or power that exhibited themselves in all surrounding societies in the Mediterranean through monumental hierarchical structures or other large buildings (Megara) and Corridor Houses, or through wealthy tombs and unequal distribution of prestige goods, were not present in the Early Cyclades.

3 Epilogue

As in high contrast photography, we can offer insightful portraits of two cultures. By setting different ratios and tones, we can create an image with specific impacts on texture, shadows, highlights, clarity, and colours. That is, we can make contrasting views between the known and unknown areas of two societies, or highlight their important characteristics, or mute the differences and blend their similarities, or bring out their colourful vibrancy. Hence, two heterogeneous societies forged by hosts of different geographical, ecological, topographical, demographic, and historical conditions, when placed side-by-side, give us a high-contrast image where we may understand the varying textures of the cultures in different ways. Such a comparison can be a highly informative exercise and lead us to greater mutual understanding, particularly since both cultures enjoy an apex along the non-linear cultural evolution of past world cultures (Liritzis 2013).

The Liangzhu and Cycladic cultures show a strong connection with water. For both the islanders of the central Aegean Sea and the farmers of the Yangtze river delta, the means for travelling on water was an essential and necessary part of their culture which encouraged exchange, distant relations, and a maritime or riverine navigation culture. Yet the fishermen, farmers, craftsmen, and spiritual advocates of both these societies would have been baffled and astounded by each other's lives. The Cycladic islanders would likely have reveled at the sight of the large and, to their minds, populous Neolithic city of Liangzhu surrounded by teeming and generous greenery and an abundance of animals of all sizes and shapes, and would have been deeply impressed by the elegant craftsmanship of jade. Both the Liangzhu and Cyclades peoples would be astounded at each other's particular customs, lifestyles, artefacts, warfare craftsmanship of elegant works of stone, pottery, and bronze. It is an imagination—but a useful one— as the more we explore the lush evergreen world of the Yangtze delta in contrast with the deep blue of the Aegean Sea, we can discover more ideas and questions than what we can possibly demonstrate in this short chapter.

Both the Liangzhu and Cycladic cultures bequeathed us with marvels of human achievements. As a human heritage then, our recommendation is that with the use of new technologies, we can support the research, interpretation, and dissemination of this heritage. With their proper valuation, they may become greater assets for social cohesion, education, and the understanding of the past, giving reason to the present and aiding planning for the future.

Property, cultural tourism and ecological protection ought to be integrated appropriately to create a sustainable relationship between archaeological site development, protection and display with the economic development of a region. The case of the Yuhang District, Hangzhou City and the Cyclades are both cases where development and sustainability in the interface between energy, tourism and cultural management must be developed.

The protection and preservation of archaeological sites in the Liangzhu culture area and the Cyclades, their respective ancient monuments, vernacular architecture, industrial installations, cultural and historical landscapes, and many other forms of cultural property are the objects of study for many disciplines. The integration of cultural management services with archaeometry and information culture technologies has already shown the successful impact in many of

Fig. 11 The thoughtful museological approach in the Liangzhu Museum of a pool decorated with jade-like circles (photo © I.Liritzis 2013)

the processes of documenting and monitoring, interpreting, and communicating the data, enhancing many aspects of the research, building capacity, and achieving public involvement in the integration of the past into our lives (Liritzis et al. 2015; Liritzis and Korka 2019). Museum constructions must be thoughtfully made in designing the outdoor and indoor spaces (Fig. 11) and making use of cyber-archaeology and virtual reality (see, for example, for the Liangzhu Museum, the apps by Rokid company using AI, AR, VR, at https://www.rokid.com/en/partners/) or the Akrotiri Museum in Santorini, (https://www.lost-atlantis.com/) or the island-museum of Délos. (https://moptil.com/apps/delos/).

The authorities managing cultural heritage assets should focus on addressing the new challenges the heritage sector faces and secure its long-term sustainability and preservation. The process from the cultural heritage re-treatment to economic benefit makes this an essential element linked to the future prosperity of local, regional, and national economic development.

The Liangzhu and Cycladic cultures are each milestone in world cultural heritage, and the further analysis of their material culture as well as environmental data mining, are both knowledge-based methodologies for new discoveries. The obtained data of such applications to current material culture or in the revealing and documentation of new buried antiquities, with proper interpretation and integration in the wider context of tangible and intangible cultural heritage, are inextricably linked to sustainability.

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