

The seascape in Aegean Prehistory

Edited by *Giorgos Vavouranakis*



Monographs of the Danish Institute at Athens
Volume 14

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*To Matti Egon,
– a distinguished representative of Greek maritime culture*

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Towards a conceptualisation of the sea: artefacts, iconography and meaning^{*}

Ina Berg

Introduction

The sea has long captured the imagination of societies and has often been viewed as either a barrier to or a bridge for communication. Recent work has stressed that perceptions of the sea, not unlike peoples' understanding of earthly landscapes, are culturally determined.¹ While drawing on approaches to landscapes,² scholars working on seascapes have stressed that water, and thus the sea, is an inherently different substance with radically different qualities from soil and earth. Whereas both may be hard to cross and may require great endurance, the land (and indeed the air that allows us to inhabit the land) is a substance humans are intimately familiar with from childbirth on. We all have the ability to move on it by walking, running, climbing or jumping without having to draw on anything outside our own body – animals, carts, bicycles or cars will speed up our journey, but are not essential. True, our journey might be dangerous and lead us into unfamiliar territories, but the physical experience of placing our feet on the ground, one after another, is one we are thoroughly acquainted with.

In contrast thus stands the sea, which humans cannot walk on or indeed inhabit in any meaningful way. While we can swim through water, distances thus covered will be short. While we can submerge ourselves in water, the time we can spend in it is very limited. Water thus requires special knowledge (e.g. tides, winds, geography), skill (e.g. navigating, sailing) and equipment (e.g. boats, diving equipment, wetsuits) merely as a prerequisite for movement through and across it. Finally, we should not forget that water, as a substance, is very different from land: if land is firm, immovable and solid, then water is moving, constantly changing and liquid.

These differences, many scholars have argued, make the sea a substantially different kind of crossing than land-based journeys.³ Anthropological case studies also support this view: the Gawa Islanders of Papua New Guinea, for instance, view land (associated with stability and weight) and sea (associated with speed and lightness) as separated by a liminal threshold (beach). The Trobriands, on the other hand, perceive the sea itself to be the liminal zone between their homeland and distant shores.⁴ However, while archaeologists cannot but help to generalise, we must nevertheless acknowledge the likely existence of multiple attitudes of the sea within every society.⁵ Neither should we assume that a community's interaction with the surrounding sea remains unchanging throughout time. Recent case studies from the Pacific, east Africa and prehistoric Aegean demonstrate that interaction zones may expand (e.g. Grotta-Pelos culture) or contract (e.g. EC III period) over time depending on changes in political, religious, social and economic networks;⁶ and in line with these changes we must assume that people's attitudes also underwent change.

However, for those people who traversed it and lived on or near it, the sea took on an 'unforget-

^{*} I would like to thank Giorgos Vavouranakis and the anonymous reviewer for their helpful comments. The paper was written and submitted in September 2007.

¹ Broodbank 2000; Eriksen 1993, 135; Gosden & Pavlides 1994.

² E.g. Bender 1993; Cosgrove 1998; Ingold 1993; Tilley 1994a; Tilley 1999.

³ Cf. Broodbank 2000; Patton 1996.

⁴ Helms 1988, 24-5.

⁵ Hau'ofa 1993; Jolly 2001.

⁶ See Broodbank 2000.

table presence' and became an intimately familiar landscape which provided infinite clues about social history, historical and mythical events, seasons, navigation, fish migrations, etc. In fact, a fisherman's experience is not limited to the sea's surface; G. Pálsson⁷ in his work with Icelandic fisherman emphasises their ability to perceive the ocean as a three-dimensional experience (or even four-dimensional if we include time as a variable): they not only understand the surface features, but actually 'see' the fish, and the composition and layout of the sea bottom. Such knowledge was also evident among Shetland fishermen whose names for fishing grounds made reference to the type of seabed in the area.⁸ Therefore, what an inexperienced observer might perceive as an undifferentiated sea surface is in fact a landscape with known places, which encapsulates a myriad of histories, experiences, skills, and relationships.⁹ In fact, for many communities the sea is much more than merely a guide to fishing grounds – it also has become a guide to their social history. "Certain reefs, channels, passages, and seamarks are associated with particular spirit beings...Places on the ocean are often identified as sites of great historical events, both encoding and lending credibility to oral traditions."¹⁰ In some instances, defined areas of the sea may actually represent a family's or kin group's territorial holdings. As on land, such areas frequently serve as ancestral memorials and as markers of ownership and are thus an essential dimension of a group's social and mythical history.¹¹

Attitudes towards the sea

Most cultures have a distinctly ambiguous relationship with the sea. The frequently cited fragment 'On Women' by Simonides, a Greek poet of the seventh century BC, provides an illustration of the sea's 'two faces':

"She [the woman] has two characters...just so the sea often stands without a tremor, harmless, a great delight to sailors, in the summer season; but often it raves, tossed about by thundering waves. It is the sea that such a woman most resembles in her

temper; like the ocean, she has a changeful nature" (Fragment 7.27-42).¹²

When the sea is perceived as a positive substance, it is regarded as benevolent, calm, vitalizing, and cleansing. It provides a means of income through fishing or trading, encountered trials make men stronger and contact with far-away places makes men wiser. Saviour, Calm, Swiftwave, Wavecease are only a few examples of Nereids' names listed by Hesiod (Hes. *Theog.* 240-255), which mirror this positive view of the sea. On the other hand, however, the sea has its dangerous side, as it is unpredictable, changeable, treacherous, threatening, corrupting, unclean and exposes travellers to greater or lesser discomforts. The two 'moods' of the sea are reflected further by the characterisation of many of its mythical inhabitants as half human and half beast.¹³ This ambiguity was also evident in Byzantine literature where adjectives associated with water reveal the sea's multifaceted nature: on one hand it can be life-giving, nourishing, flowing with riches, healing, and pain killing, on the other it is death-dealing, barren, wild, pitiless, hostile, warlike, and man-slaying.¹⁴

Calamities in the world's oceans and the Mediterranean Sea have contributed to our perception of the sea as a truly dangerous place. Even nowadays, trawlermen have the highest death rate of any profession in Britain. In 1998 alone, there were 366 accidents, 26 vessels lost at sea and 26 fatalities.¹⁵ In addition to abundant shipwrecks, ancient literary sources bear witness to the dangers of sailing in the Mediterranean: for example, Byzantine maritime loans always incurred the maximum interest rate.¹⁶ In the *Odyssey* Homer relates how heavy storms battered Odysseus' ship again and again on his journey from Troy to Ithaka (e.g. Hom. *Od.* 9.69-76,

⁷ Pálsson 1994, 910; cf. Thompson 1995, 62.

⁸ Nicholson 1983, 105.

⁹ E.g. Hassan 1997.

¹⁰ Feinberg 1995, 7; cf. McNiven 2003; Rainbird 2004, 5.

¹¹ Barber 2003; Hviding 1995; McNiven 2003.

¹² Simon. 7.27-42, cited by Lloyd-Jones 1975.

¹³ Lindenlauf 2003, 417.

¹⁴ Vryonis 1993, 124-6.

¹⁵ O'Hanlon 2004.

¹⁶ Laiou 1993, 80.

79–86), ultimately leading to the loss of his entire crew when a storm ripped his boat apart (Hom. *Od.* 7.265–274; 12.417–468). Subsequently, our hero was shipwrecked again upon leaving Calypso’s island (Hom. *Od.* 5.292–445). As a consequence of the dangers encountered at sea, many cultures locate their cosmological place of death in it or require souls to traverse it to reach their final destination. Ships, by crossing this dangerous substance, may themselves become associated with death. Such is the case in Greek and south-east Asian mythology, where boats are employed to ferry souls to the land of the dead.¹⁷ A particularly close link is apparent in Austronesian-speaking communities, where “terms for ‘boat’ and ‘coffin’ can be interchangeable.”¹⁸

Due to the dangers and uncertainties encountered by those travelling the seas, it is not surprising to find that societies imagined the sea in general and dangerous locations within it (e.g. whirlpools, fringing reefs, channels) to be the domain of powerful supernatural beings who control wind, currents and waves; these creatures need to be placated with sacrifices, prayers and by upholding certain taboos to insure a safe journey. According to Greek mythology, the god Poseidon was believed to reside in the sea together with mythical sea creatures, such as the Nereids. *Tamudurere*, a spirit which controls the magic of sorcery and warfare in Papua New Guinea, lives in the deep sea, while *silava*, powerful place spirits in the shape of octopi, fish or floating logs, can be found in areas with treacherous currents and high waves.¹⁹ Actions by these beings can be influenced by following the appropriate ritualised behaviour resulting in the use of magic, taboos and rituals for virtually every aspect of a sea-going enterprise – including the building of the boat, the making of fishing tackle, the acquisition of sailing, fishing and navigating knowledge, fishing and trading activities, appropriate behaviour whilst on board, and, of course, the departure and return of the travellers.²⁰

The Minoans and the sea

Unlike the later Classical Greek or Roman period where literary sources provide a substantial amount

of information about how the literate classes viewed the sea, Minoan attitudes towards the sea have to be deduced from the surviving evidence of their physical engagement with it, such as iconography, ships, fishing equipment, and food remains. The remainder of this paper thus is a first tentative exploration of the potential of the evidence currently available to us.

Iconography

Minoan depictions of seascapes rarely represent the element of water iconographically; instead marine animals, marine vegetation and ships are utilised to give an indication of the intended setting.²¹ While isolated motifs of fish, cuttlefish and shell appeared in MM I–II, their use expanded into a large variety of media only in the Protopalatial period. Octopuses, crabs, triton, fish, dolphin and marine vegetation are, for example, engraved on MM II–III seals, fish are depicted on pottery, and flying fish, crabs, argonauts and shells are modelled in relief and there is evidence of use of seashell appliquéés too.²² Dolphin, octopus and argonaut are motifs on Kamares Ware vessels and appear to take their inspiration from wall paintings. In the Neopalatial period, marine imagery is present in abundance on clay reliefs, stone vases, metal work, seals, faience, wall painting as well as pottery. In addition, real shells and imitations thereof often occur – one might draw attention to the hundreds of shells from the Temple Repositories at Knossos. The miniature frescoes at Thera with their depiction of coastal scenes, the dolphin fresco from the Queen’s Megaron at Knossos and the LM IB Marine Style signal that Minoan engagement with marine life reached its greatest heights in the LM I period, although marine motifs are eagerly copied by mainland artists and continue

¹⁷ Ballard *et al.* 2003, 392.

¹⁸ Ballard *et al.* 2003, 392.

¹⁹ Lepowski 1995, 50–1; also Barber 2003, 435.

²⁰ E.g. Gladwin 1970; Grimble 1982; Nicholson 1983; Wachsmuth 1967.

²¹ Morgan 1988.

²² For some examples, see Poursat & Knappett 2005.



Fig. 1. Marine Style jug of the 'Marseilles type,' decorated with argonauts, from Kato Zakros (photo courtesy of L. Platon; for a description see Platon 2008).

to play an important part in Mycenaean iconography.²³

The LM IB Marine Style

Of all the depictions of marine life in Minoan art, the Marine Style, which became popular on clay vases of the Special Palatial Tradition during the LM IB period, has received perhaps the most attention (Fig. 1). The Special Palatial Tradition refers to four styles (Marine Style, Floral Style, Abstract/Geometric Style and the Alternating Style), which appear to form one single iconographic tradition. As motifs sometimes cross-over and the styles utilise a similar range of shapes, it has been suggested that they form the products of one specialist workshop.²⁴ A single workshop location is supported by (an admittedly rather limited) petrographic and chemical analysis of the clay, which showed that

most Cretan samples analysed could be linked to a central Cretan composition, most likely Knossos.²⁵ Over 300 Marine Style vessels²⁶ have been found at 19 sites in Crete, although their main concentrations are at Knossos, Palaikastro, Kommos and Zakros (Fig. 2).²⁷ Interestingly, Marine Style vases found on the islands and the Greek mainland were not exported from Crete but were manufactured in mainland production centres (most likely Mycenae, Korakou, Athens and Thebes, as well as Aigina). As it is uncertain whether they were produced by mainland or itinerant Cretan painters/potters and thus whether the images reflect mainland or Cretan traditions and attitudes, they have been excluded from this analysis.²⁸

The Marine Style is characterised by what Furumark²⁹ has termed 'unity syntax'; that is, a composition that treats the vase as a single decorative field united under a single theme. The centre of this syntax is the main motif (most commonly octopus, argonaut or starfish – normally depicted 'floating' in the centre of the vase with a preference for a radiating or revolving arrangement) and almost always repeated one or more times around the vase. Subsidiary motifs, such as triton, argonaut, sea urchin, rockwork and marine vegetation, serve as filling ornaments.³⁰ Scholars have drawn attention to the strong syntactic links between motifs, composition and vessel shape.³¹

²³ For summaries of motif development see Bradfer 2000; Furumark 1941; Hiller 1995; Krzyszkowska 2005; Morgan 1988; Niemeier 1985.

²⁴ Betancourt 1977a; Betancourt 1977b; Betancourt 1985.

²⁵ Jones 1986, 442–57; Mountjoy *et al.* 1978; Mountjoy & Ponting 2000; cf. Müller 1997.

²⁶ In her corpus, Mountjoy (1984) lists 288 Marine Style vases from Crete. Müller (1997), on the other hand, lists 584 vessels. However, he also includes vessels that, strictly speaking, do not belong to the Marine Style. Taking into account recent publications from Kommos and Archanes, the total number of vases can be estimated at around 315.

²⁷ Bradfer 2000; Mountjoy 1974a; Mountjoy 1974b; Mountjoy 1984; Müller 1997.

²⁸ Jones 1986; Mountjoy & Ponting 2000.

²⁹ Furumark 1941.

³⁰ Bradfer 2000; Betancourt 1985; Mountjoy *et al.* 1978; Niemeier 1985.

³¹ Furumark 1941, 162–3; Müller 1997; Popham 1967, 341; Sakellarakis & Sapouna-Sakellarakis 1997, 447.



Fig. 2. Map of the southern Aegean with main sites mentioned in the text (basic map after Daniel Dalet/ d-maps.com; modified by G. Vavouranakis).

For example, the octopus with its radiating arms is used for larger globular vessels and its arms grow upwards when shown on a narrow vessel, while whorl or triton shells on rhyta are depicted vertically with the thicker end facing upwards, thus carefully mirroring the shape of the rhyton. As regards the naturalism of the images, they do not depict a particular animal taxon, but rather capture the general look of a species, especially for those not found near the shore.³²

There is little doubt that the Marine Style is somehow linked to ritual activities and beliefs. However, the strength of this connection and the precise meaning are still under debate. Aside from a few very early general references,³³ a cultic meaning of marine imagery was originally suggested by P. Betancourt³⁴ and further elaborated on by P. Mountjoy.³⁵ In her article, the author demonstrated the close connection between marine motifs and cultic building contexts at ten Cretan sites – the

best-known example being the Temple Repositories at Knossos, where “faience reliefs of flying fish, rocks, shells and argonauts were found, as well as large numbers of painted sea-shells.”³⁶ While the vessels used for the Marine Style – with the exception of the rhyton, funnel and S-handled jug – were probably not exclusively made for ritual purposes, they too are frequently found in ritual contexts. Unfortunately, the precise religious meaning of marine imagery, beyond its evident connection with the sea, remained uncertain. Indeed, the author proposed that the particular choice of motifs might have been governed more strongly by the shape requirements of the vessel than by the sym-

³² Gill 1983; Morgan 1988 for dolphins.

³³ See Müller 1997 for a summary.

³⁴ Betancourt 1977a.

³⁵ Mountjoy 1983.

³⁶ Mountjoy 1983, 240.

bolism inherent in the motifs themselves.³⁷ At this point it is worth reminding readers that P. Mountjoy allocates only c. 35 (out of c. 300) Marine Style vases to ritual contexts, and that any contextual analysis is hampered by the many unprovenanced or unstratified pots.

Marine Style: exploring the potential of alternative approaches

Uncovering the precise meaning that resides in images is always a difficult task.³⁸ Clearly, marine imagery exists in the art of many societies. However, each will interpret the marine environment in a different way, depending on the kind of relationship and knowledge societies had of this particular sphere. “People are not so much representing a nature that is ‘out there’ as encoding it.”³⁹ Often, cultural significance might be attached to these depictions, but the precise meaning will be different from society to society and, having been made for past viewers, first needs to be decoded by us. A useful illustration of this point is provided by J. Crowley,⁴⁰ who contrasts Aegean water imagery with Near Eastern and Egyptian depictions. The author found that everyday experiences shaped the art in each society: Aegean artists portrayed the open sea, while Mesopotamian and Egyptian craftsmen only knew river environments. More importantly, the context in which water was alluded to was different in each culture: Near Eastern and Egyptian artistic traditions perceived the environment merely as a backdrop for depictions of deities and powerful rulers, while Aegean people experienced the sea as an important and integral part of their lives. In relation to the Aegean, research summarised above followed several strategies by investigating the relationship between images and find context, by looking for correlations between different motifs and by investigating the context of production. The results were very encouraging and demonstrate the potential of iconography in eliciting deeper cultural meaning. One dimension that was, however, ignored is that of the physicality of the marine creatures. This ap-

proach takes its inspiration from recent debates on materiality, material properties and qualities, and the social context within which they function,⁴¹ and hopes to elicit hitherto hidden facets of, attitudes to or perceptions of Minoan engagement with the sea by comparing known characteristics of the actual animals and the attributes that were emphasised in the Marine Style.

The octopus (order *Octopoda*), the most common Marine Style motif on Crete, is characterised by its globular fleshy and boneless body, which often possesses wart-like protuberances. Eight long arms with suction cups are united at the base underneath the head with its large and prominent eyes. Their blood contains copper-rich hemocyanin, which gives them their blue colour. Octopuses live in lairs in shallow waters near the shore; the lairs can be easily recognised by the food debris and stones accumulated around the entrance. The animal moves by crawling with its arms or by swimming head-first by expelling a jet of water or contracting its membrane. It catches its prey with its arms or by enveloping it with the membrane to which all its arms are connected. Its life-span is moderate and lies between six months and five years. Octopuses are intelligent animals that have good eye sight, a good sense of touch and possess good short-term and long-term memory. They have several unusual defence strategies, such as expelling a cloud of ‘ink’ to escape from predators, change colour to mask their presence, and to automise their limbs in order

³⁷ While most scholars agree that there is a religious component to the Marine Style, there is a real danger that we are confusing decoration with vessel shapes. Was it the decoration that infused shapes with ritual significance or was it the shapes that held the ritual meaning, while the decorative schemes were appropriate but not necessarily religious in themselves? Mountjoy (1983) has made a considered argument for the latter scenario. Even if it was the shapes that were of prime relevance in these religious contexts, the marine imagery chosen did not seem incompatible with such uses and thus require further analysis in their own right.

³⁸ Morphy 1989a; Ryan & Crabtree 1995; Tilley 1994b; Willis 1990.

³⁹ Morphy 1989b, 2.

⁴⁰ Crowley 1991.

⁴¹ Gell 1998; Graves-Brown 2000; Ingold 2007; Jorge & Thomas 2006/7; Miller 2005; Tilley 1999; Tilley 2004.

to distract predators or to release a caught arm.⁴² When touching octopuses, the qualities that are most noticeable are the wetness and slimy consistency of the body, the difficulty in controlling the animals, and its ability to move and slip away easily. Once an octopus has got hold of an object or human, it is the great strength of its suction cups that is noticeable. The dexterity of its arms is remarkable. Two typical behavioural gestures are associated with the octopus. The first one is the elegant jet-propelled swim when the animal glides head-first through the water with its arms neatly aligned floating behind. The second one is the defence position where the animal's head is raised above the seated body with the arms curled upwards.

Of the listed physical features only a few have caught the attention of Minoan painters (Fig. 3A). While the eight arms with their suction cups are shown to the side of the body, and the double head with its prominent eyes clearly identifies the painted animal as an octopus, not all features are recorded true to nature. For example, painters do not always seem to be aware that all eight arms extend from the web and they are sometimes shown as growing out from a body like branches from a tree trunk. As regards behavioural characteristics, octopuses are normally shown as belonging into the marine environment by association with sea vegetation and other sea animals. However, since rock and coral are combined with both littoral and pelagic species, their depiction is unlikely to be an allusion to the octopus's habitat but rather a standardised, thematic rendering of the sea. The animal's arms are normally displayed as radiating in all directions from the body with the ends often curled in. This arrangement of the arms is not a behavioural pattern that stands out in nature and appears to be more of an iconographic convention that allows coverage of the whole vessel. However, it might have taken inspiration from seeing octopuses crawling on the sea floor looking for or eating food, or from seeing the animal alive on the floor of a boat or clinging onto the arm of the fisherman after capture. The curled ends might make reference to the dexterity of the animal. Surprisingly, none of the features that intrigued later Greek writers, such as colour changes, ink clouds, automising limbs or its ability

to 'walk' on land, appear to have inspired painters of the Marine Style. Overall, these depictions do not show knowledge of the octopus's habitat or behaviour, and appear to be void of any emotions towards it: they are not depicted as dangerous (e.g. defensive gestures, ink expulsion), fierce, calm, or indeed as involved in any kind of activity (e.g. eating, hunting, swimming, lair building). Except for their associations with the sea in general, the paintings are thus void of any natural context.

The argonaut (*Argonauta argo*; also called the 'paper nautilus') is a pelagic octopus that lives and feeds close to the sea surface. It has a round body with two prominent eyes. From the body spring eight arms with suction cups. The first pair of arms extends into broad oval membranes whose skin glands secrete calcium carbonate to form the shell. Only the large females (up to 30 cm long) are able to secrete the ribbed white paper shell of up to 30 cm in size. The body of the female is mostly hidden inside a shell, but the shell's actual purpose is that of an egg-case. While the argonaut can leave its shell occasionally, it cannot form another one if separated permanently and will die. The existence of the smaller (2 cm) male was unknown to biologists until the 19th century. Despite their conspicuous eyes, their eye-sight does not seem to be good and they detect prey through touch. They feed during the day using their tentacles to grab the prey (e.g. crustaceans, molluscs, jellyfish) and drag it toward the mouth. The animal swims in a jerky motion by means of jet propulsion; air in the shell insures that the animal remains suspended in water. When threatened, it can change colour, eject ink or, most commonly, retreat into the shell whose entrance it covers with the membranes.⁴³ The life span seems to be longer than that of other octopods. Unfortunately, not much is known about argonauts as they are difficult to hold in captivity and most of our knowledge stems from specimens found floating on the sea or washed up on the beach. The qualities of an argonaut are those of a normal octopus (wetness, slimy consistency, flexibility, glid-

⁴² Boyle 1983; Lane 1957.

⁴³ Lane 1957; Wells 1962.

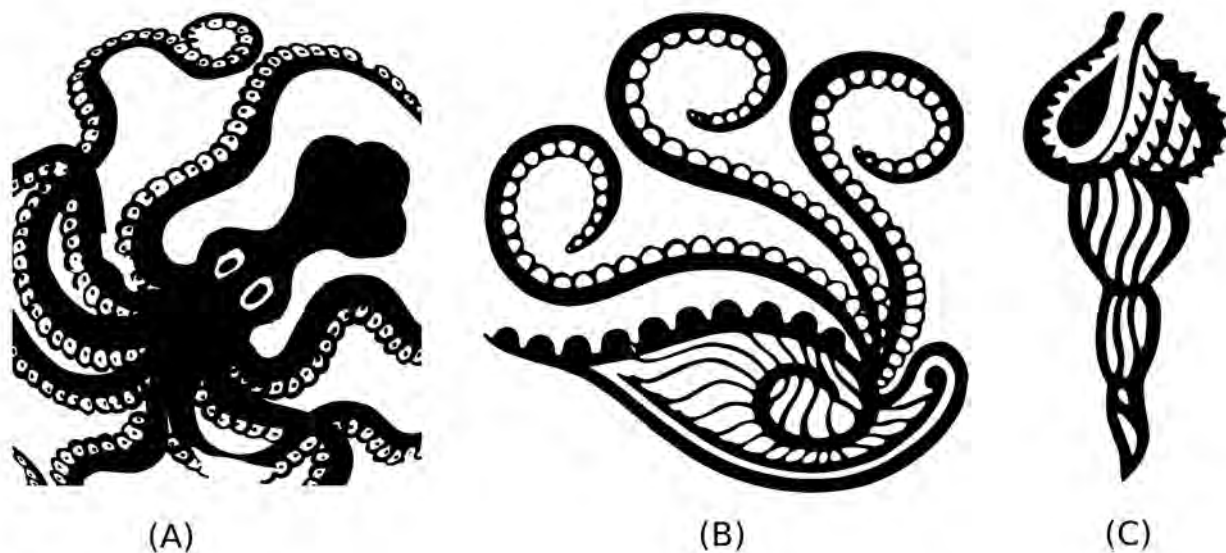


Fig. 3. Marine Style imagery: (A) octopus, (B) argonaut, (C) triton (after Betancourt 1985, pl.20G and Pendlebury 1939, 206, fig 37; modified and redrawn by the author and G. Vavouranakis).

ing movement, strength and dexterity), combined with the tactile sensation of the fragile shells whose lightness and ribbing would be particularly noticeable. The most typical posture is when the octopus is hidden inside the shell with the eyes still clearly visible, the arms barely hanging over the edge and the two membranes stretched over the shell. The second recognisable gesture is that of arms trailing behind the shell when using jet propulsion.

In the Marine Style, the argonaut is depicted as a greatly stylised and standardised motif which focuses on the three curled arms with suction cups that rise out of the broad end of a sizable striped shell (Fig. 3B). While the suction-clad arms identify the animal as an octopus, all paintings are characterised by a reduced number of arms, a lack of the body with the prominent eyes and a lack of webbing on the first pair of arms. The ribbing of the shell (indicated through stripes) is shown as vertical, diagonal or horizontal, rather than radiating out from a single point. The shape and entrance of the shell are unlike that of a real argonaut. Also, both the painted animal and shell are shown upside-down when compared with life specimens. The posture shown does not have an equivalent in nature, but most likely takes its inspiration from the animal exploring its surroundings with its tentacles. Being shown in conjunction with other marine motifs,

most commonly rockwork, it is clear that no depiction of its real habitat has been attempted. Unlike Classical times, there is no hint in the imagery of stories related to sailing, nor is there any evidence that typical behavioural characteristics, such as ink ejection, colour change, jet propulsion, covering the shell with its webbed membranes or retreating into its shell, captured the painters' imagination. Argonauts are displayed in an emotionless and highly stylised manner that makes it clear which creature is referred to, but does not attempt an accurate and naturalistic portrayal of it. It is hard to shake the impression that painters only had a hazy knowledge of argonauts – probably through casual reports by fishermen and sailors, and shell remains washed onto beaches.

The third main motif (also frequently used as a secondary motif or filler) to be touched upon here is the triton shell (genus *Charonia*). Tritons are large pelagic predatory snails whose shell can grow to 30 cm in size. The animal's body is yellowish with brown specks and it has two feelers. The shell is tall, elongated and spiral-shaped with markings on its smooth exterior. The snail can close the entrance to the shell using a 'lid'. They live on the sandy sea floor or rocky bottom, frequently near coral reefs, below tide levels. They are carnivores and feed on molluscs and starfish. The animal typically crawls

on the sea floor with the shell oriented horizontally on top or can be found sitting on top of a starfish whilst feeding off it.⁴⁴

In Minoan art, tritons are depicted as elongated, twisted shells that are subdivided into three to four sections with an opening always clearly indicated in the largest one (Fig. 3C). The exterior shell markings are clearly visible and can run in any direction, while the section with the opening often carries thorn-like protuberances. On most vessels, in particular rhyta, the shell is shown floating vertically with the larger section at the top, thus cleverly mirroring the shape of the vessel. Characteristic postures, such as the snail crawling along the sea floor or eating starfish, are not being referenced in Marine Style images. In fact, the motif only makes reference to the shell and never shows the snail that inhabits it. The marine context of triton shells is indicated through associated motifs, like the starfish, octopus, argonaut, rockwork and marine vegetation, though their relative size is determined by the needs of the composition. As the shell is always depicted floating, there is no reference to the snail's natural habitat. Except for the prickliness of the shell and the markings, no qualities of the triton shell have been emphasised. Being qualities that can be observed on the 'dead' shell, it seems most likely that the painters did not know these shells once housed an animal or were aware of their particular living environment. The motif thus gives the feeling of detachment and lack of knowledge of the subject.

A lack of knowledge?

Contrasting with the stylised and artificial Marine Style depictions is evidence of boats, fishing methods, fishing equipment and food remains which demonstrates that the Minoans had the capability to engage with both the deep sea as well as the littoral range, and were in principle able to gain an intimate knowledge of it and its inhabitants.

Ships

Rock art depictions of boats are already known from LN Strofilas on Andros.⁴⁵ Information about

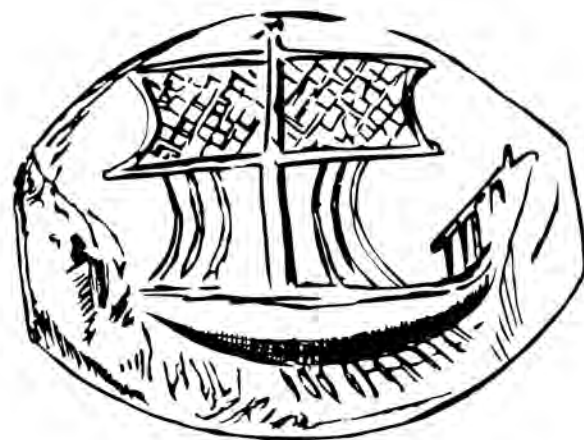


Fig. 4. Late Minoan seal depicting a vessel under sail. The hatches below the boat probably indicate oars (after Casson 1995, fig. 39; redrawn by the author).

Bronze Age boats comes from boat models, wall paintings, images on ceramics and seals, shipwrecks and experimental studies.⁴⁶ While paddled or rowed boats were the only means of transport prior to the introduction of sailing boats towards the end of the Early Bronze Age, iconographic evidence makes it clear that two categories of boats can be distinguished from the Middle Bronze Age onwards: smaller boats for coastal journeys and larger sailing merchant boats or galleys for long-distance sea voyages (Fig. 4). An Early Cycladic rock graffiti from Naxos and a terracotta model from EM I-II Palaiakastro on Crete most likely depict what we can assume to be the most common type: a compact and sturdy boat with a small carrying load which could be paddled by a single person making it most suitable for coastal journeys or short crossings.⁴⁷ Small to medium-sized vessels, interpreted as small fishing boats, are also shown on the Miniature Fresco at Akrotiri on Thera.⁴⁸ Sailing vessels with an estimated length of between 10 and 30 m and characterised by large cargo space, fast travelling speed

⁴⁴ Hayward & Ryland 1990; Wirtz & Debelius 2003.

⁴⁵ Televantou 2008.

⁴⁶ Bass 1987; Casson 1995; Christensen & Morrison 1976; Johnston 1985; McGrail 1987; Morgan 1988; Severin 1985; Severin 1987; Wachsmann 1998.

⁴⁷ Doumas 1965, fig. 4; Evans 1928, fig. 137.

⁴⁸ Morgan 1988, pl. 160.

and a large travelling range are frequently depicted on Minoan seals and sealings, on two sherds from Phylakopi as well as on Thera wall paintings.⁴⁹

A recent re-assessment of the capabilities and reach of sailing boats has established that sailors had great skills and were capable of long journeys across the open sea, which would have required night-time travel. With a sail capable of tacking and jibbing, sailors were able to sail at an angle to the wind at any time in the year.⁵⁰ While it is likely that the majority of movements were on the local scale and involved coastal travel with stop-overs, Minoan sailors had the skills and equipment to explore the open sea as well as coastal areas with ease and engage with the sea in a meaningful and lasting way.

Fishing

Despite the availability of both coastal and sea-worthy boats, knowledge of sea creatures could potentially have been limited by the capabilities of available fishing methods. This does not appear to have been the case. Based on excavated small finds, bone remains and iconographical depictions, J. Powell⁵¹ has been able to identify four fishing methods for which evidence exists that they had been employed by prehistoric fishers in the Aegean: 1) Collecting, diving and spearing; 2) Fishing with traps; 3) Fishing with nets, and 4) Fishing with hook and line. Collecting, diving and spearing relates to the exploitation of marine species found near the seashore, such as sea urchin, crab, shell and octopus. These methods required nothing more than a basket, fork and knife (collecting), stone, etc. as weight, a bag and knife (diving), or spears made of wood with bone, stone or metal points, possibly with an attached line for create a retrievable harpoon (spearing). Animals targeted with this technique are primarily littoral ones, such as octopus, eels and *murex* shells, but can stretch to pelagic fish. Fishing with traps requires in-depth knowledge of the species to be captured to set it in the right location, depth and season. Traps can be temporary (made of terracotta pots or baskets) or permanent, built-structures made of wood and netting. The latter variety is unlikely to have existed in the Aegean, while the presence of the former is indicated by *murex* shells and eels.

Fishing with nets is the most labour- and equipment-intensive method, but has the greatest potential for a large catch. Nets can be fixed or mobile, but their depth is rarely deeper than a few fathoms and they are therefore often restricted to areas near the shore. While nets can potentially be used on a ship on the open sea, their effectiveness is dependent on the travelling speed of the boat which must be greater than that of the species to be caught (i.e. 4–6 knots) – an unlikely scenario. Netting can be identified by remains of the net itself, needles, floats and weights. At the moment, evidence for netting in Minoan Crete is circumstantial due to the multi-functional nature of the equipment used; conclusive evidence is first available from the Mycenaean period. Fishing with hook and line can be undertaken from the shore and offshore and is the most widely practiced method. Lines can be stationary or movable, use one or multiple hooks or lines, and reach depths down to fifty fathoms. Successful use requires good knowledge of fish habitat and behaviour. Evidence suggestive of the use of fishing lines can be found in gorges, hooks, weights and sinkers, rods and the lines themselves. In the prehistoric Aegean, line fishing has existed since the Neolithic period. That lines were used to catch both littoral and demersal species using methods such as hand-lining and trolling can be deduced from the size of the hooks.⁵²

While fishing concentrated on littoral species, fishing equipment existed also to catch pelagic species. However, regardless of which technique is chosen, the labour-intensity and effectiveness of the fishing and trapping equipment was only suited to produce small catches.

Minoan diet

As demonstrated by the evidence of boats and fishing equipment, the Minoans undoubtedly possessed the skills and equipment both for coastal and

⁴⁹ Casson 1995; Morgan 1988; Wachsmann 1998.

⁵⁰ Berg 2007.

⁵¹ Powell 1992; Powell 1996, 77–166; also Guest-Papamanoli 1983.

⁵² Powell 1996.

open water fishing. However, the actual remains of fish bones show an intriguingly selective consumption pattern. Fish bones currently constitute only a small percentage of the total animal bone assemblage.⁵³ A comparison of fish remains from several sites shows that there was no unified picture regarding fish consumption: each site consumed different proportions of different species of fish from different types of habitats. However, multi-fishery is commonly observed and an overall predominance for fish from inshore or moderately deeper coastal water – caught with nets and hook and line – is apparent at most sites (Table 1). This preference for coastal fish from a reliable source is understandable given the annual and seasonal variability of catches of pelagic fish.⁵⁴

Unlike fish, the preservation of marine invertebrates is very good and consequently our picture of their exploitation is more complete.⁵⁵ Several sites, including Akrotiri, Palaikastro and Kommos, have produced large samples of molluscs. L. Karali,⁵⁶ for example, analysed mollusc remains from the 1967 to 1987 excavation seasons at Akrotiri and has identified 23 marine species. *Murex* and *patella* are the most common species adding up to around 85% of the total assemblage. Except for 31 triton shells, at home in the deep seas, all molluscs were collected from the shore. Most shells seem to have been eaten raw, used as fish bait or as ornaments. A similar procurement and consumption pattern can be observed at Palaikastro with the distinction that the most common species of shell is *murex* – discovery of several substantial *murex* deposits makes it likely that they were used for dye production.⁵⁷ *Patella* was by far the most common mollusc at Kommos and, together with *monodonta* and *murex trunculus*, was probably collected as food or fish bait.⁵⁸ In addition to species that leave traces we should also assume the consumption of sea urchins, crabs, cuttlefish, octopus, etc – all of which can be found near the coast.⁵⁹

Unlike the Neolithic site at Saliagos where evidence of tunny bones indicated that the inhabitants were comfortable and successful at traversing the deeper seas in order to catch pelagic fish and that seafood made up a considerable proportion of their overall diet,⁶⁰ Bronze Age fish and mollusc data

show a distinct preference by the Minoans for littoral food procurement. More importantly, if the limited available isotope data are an accurate portrayal of past dietary habits, then seafood formed only a very minor part of the normal Cretan Bronze Age diet.⁶¹ This pattern might easily be interpreted as relating to convenience in procurement, food preferences, or limitations in fishing equipment. However, the contrast with the marine-oriented Neolithic Saliagos people is so stark that such an interpretation appears unconvincing. While all these factors might have contributed, taken together with our iconographic analysis a more complex picture is emerging.

The Marine Style, Minoans and the sea

To access prehistoric mindsets and attitudes is a problematic undertaking even when iconographic depictions are available. And while no conclusive answer can be offered at this stage, the presence or absence of specific types of evidence hints at some intriguing interpretations of the symbolism associated with the sea.

Unlike other seafaring cultures, there is no evidence that the classification of animals is gendered.⁶² Likewise, a reference to foods consumed in the particular Marine Style vessels can surely also be excluded since the motifs are so clearly chosen for particular shapes and the shapes are predominantly (liquid) serving vessels. The images are void of any kind of activity – creatures are depicted (e)motionless and stylised. Neither are there any displays of human-animal interaction, such as fishing, collect-

⁵³ Trantalidou 1990, 402.

⁵⁴ For a more detailed summary see Berg 2007; a diachronic view of fish consumption is offered by Theodoropoulou 2007.

⁵⁵ Karali 1999.

⁵⁶ Karali-Yiannacopoulou 1990.

⁵⁷ Reese 1987.

⁵⁸ Reese 1995, 240–73.

⁵⁹ See also Berg 2007.

⁶⁰ Evans & Renfrew 1968.

⁶¹ Richards & Hedges 2008.

⁶² E.g. McGhee 1994.

Fish taxa	Palaikastro Building I	Kommos	Akrotiri	Lerna	Habitat
	MM II-LM IIIA	MM IB-LM II	LC I	MH	
<i>Apogonidae</i> (Cardinalfish)	★	★			Common in coastal lagoons or reefs where it lives near caves and crevices at depths of 1-50 m.
<i>Atherinidae</i> (Silverside)	★				Shoal fish, usually found in shallow, inshore waters.
<i>Blenniidae</i> (Blenny)	★				Demersal, inhabits reefs, reef crests, and coral rubble in shallow water areas of less than 1-6 m.
<i>Carangidae</i> (Mackerel, pilotfish)	★	★	★		Pelagic shoal fish, lives in deep water but may approach closer to the shore during migrations.
<i>Carcharhinidae</i> (Shark, ray)		★			Epipelagic, occurs in inshore and offshore waters from the beach to a depth of c. 200 m.
<i>Centracanthidae</i> (Picarel)	★★		★		Pelagic shoal fish.
<i>Dasyatidae</i> (Stingray)	★				Demersal, most commonly frequent shallow waters, but may lead a pelagic life-style.
<i>Gadidae</i> (Shore rockling)		★			Inhabit shore pools to sublittoral waters. Preference for rocky bottoms.
<i>Labridae</i> (Wrasse)		★			Demersal, lives on rocks and eel-grass beds in coastal waters down to a depth of 60 m.
<i>Mullidae</i> (Goatfish, Red mullet)	★				Demersal shoal fish, lives in coastal waters at depths of less than 15 m.
<i>Pomacentridae</i> (Damsel-fishes)	★				Demersal shoal fish, inhabits reef habitats, rocky areas or sea-grass beds at depths of 2-15 m.
<i>Scaridae</i> (Parrotfish)		★			Littoral, usually found on rocky and sandy shores down to 30 m.
<i>Sciaenidae</i> (Meagre)	★				Demersal species, solitary, prefers rocky coasts.
<i>Scombridae</i> (Tunny)		★	★		Pelagic shoal fish, lives in deep waters but may approach closer to shore at times.
<i>Serranidae</i> (Grouper, sea bass)	★★	★★			Demersal species, solitary, lives inshore near rocks down to 100 m depth.
<i>Sparidae</i> (Sea bream, porgy)	★★	★★	★	★	Demersal species, offshore at depths of 200-500 m in winter, inshore in summer.
<i>Sparidae/Labridae</i>	★				See above.

Table 1 (opposite). Fish remains from selected Middle and Late Bronze Age sites. * indicates presence of fish taxa in assemblage; ** indicates dominant species in assemblage. Akrotiri: Trantalidou 1990; Gamble 1979, Mylona 2000, Mylona 2008; Kommos: Rose 1995, 204–239; Lerna: Gejvall 1969; Palaikastro: Riley 1999, table 21. Habitat information is based on Froese & Pauly 2010; Whitehead *et al.* 1984; Whitehead *et al.* 1986.

ing or consuming, that might shed light on function. Instead, the motifs are exclusively used in a stylised and generic marine context without appreciation of the animals' real habitat. Thus, it could be argued that either the particular combination of this very restricted range of motifs, or indeed the mere presence of any one, is being used as a stylistic convention for the sea itself. As such, we have to entertain the possibility that it is the sea, rather than the creatures that is being referenced. Having said that, the virtual exclusion of fish from among the Marine Style images indicates that the selection is not a random one and that some kind of logical categorisation is at play, such as has been seen by J. Pálsson⁶³ in Iceland. In the Icelandic world view, sea creatures are subdivided into fish and nonfish whereby sea-women (a mythical creature that was fish in the sea and human at land), salmon, trout and other specific fish fall under the category 'fish', while seals, otters, sea-dogs, mermaids, sea-men, and whales were 'nonfish'. With regard to the Minoan scenario we can only speculate: since we assume that fish, molluscs and shellfish were all eaten, and since the images depict both littoral and pelagic species, the difference might lie in the proximity of octopuses, tritons and argonauts to the sea floor – a space further removed or, at least, different from the realm inhabited by fish.⁶⁴

This observation fits in well with interpretations of marine imagery proposed for other media and/or for the Postpalatial period. Preliminary interpretations of octopus imagery, for example, have been provided by S. Hiller⁶⁵ and N. Marinatos.⁶⁶ Starting from the pragmatic observation that octopuses are depicted on the *floor* frescoes at Knossos, Agia Triada and Pylos, Hiller sees the choice and location of the motif on the floor as mirror of the octopus's real-life marine habitat. On a metaphorical level, the octopus's proximity to land (and indeed its ability to survive on land for several hours) distinguishes it from other marine animals; it thus inhabits a

realm neither fully water-borne nor completely land-based. Combined with its unusual, 'demonic' shape, S. Hiller sees the octopus as the powerful marine equivalent to mythical land creatures, such as lions and griffins. The location of the octopus motif directly in front of the throne at Pylos makes a metaphorical connection between the power of the sea and the power of the Mycenaean king a possible scenario.⁶⁷

An alternative interpretation of the octopus motif is as a symbol of death or the journey into an afterlife. The starting point for this interpretation is the realisation that octopuses often appear painted on larnakes of the Postpalatial period (fish, squid, argonauts and boats also appear) and that gold foil in octopus-shape was found in one of the Mycenae Shaft Graves. N. Marinatos⁶⁸ speculates that it was the animal's ability to grow new arms when existing ones have been lost or cut off that made it such an appropriate symbol for a set of beliefs linked to life after death, regeneration, or cyclical transformations. Given the preponderance of marine motifs on Postpalatial larnakes, it is possible that the sea in general was considered the final resting place for the dead or the location of the Afterworld.⁶⁹ Whether this explicit funerary symbolism can be backdated to the Neopalatial period requires further investigation.

A further suggestion for the religious significance

⁶³ Pálsson 1990, 124–5.

⁶⁴ Strictly speaking, argonauts live near the sea surface, but since they are being depicted as octopuses, they are likely to have been perceived as bottom-dwellers.

⁶⁵ Hiller 1995.

⁶⁶ Marinatos 1993.

⁶⁷ Hiller 1995, 567–8.

⁶⁸ Marinatos 1993, 195, 230–1.

⁶⁹ Watrous 1991. V. Watrous also draws our attention to the use of marine motifs on a MM III burial pithos at Mochlos and two from Pachyammos cemetery (Watrous 1991, footnote 116).

of marine imagery was provided by M. Gill,⁷⁰ who argued that their meaning was based on the importance of fish, crustaceans and molluscs as a food source; and the images should be read as something akin to a 'harvest' prayer. On a more spiritual level, marine creatures might have acted as animal attendants or symbols of a supernatural being whose realm was the sea. Unfortunately, the lack of seafood in the Minoan diet makes the 'harvest' prayer proposition appear less likely for the Bronze Age, though it could still be a viable hypothesis for Neolithic or Mesolithic contexts. Acknowledging religious symbolism, J. Driessen and C. Macdonald⁷¹ view the creation of the Marine Style and its use on vases in the context of *elite* legitimisation strategies as a response to the Thera earthquake, volcanic eruption and subsequent tsunami in mature LM IA,⁷² which must have undermined the power of the palaces and their ability to control nature. Marine imagery is thus seen to reflect the awe with which Minoans came to view the power of the sea, or might even be a direct reference to where Minoans saw the cause of the earthquake residing in. If a palatial product, the Marine Style might have served as reminder of the need to trust in the palaces to contain the destructive powers of nature. This interpretation takes account of the sudden appearance of the Marine Style, but does not provide an adequate explanation for the long history of marine depictions in Minoan art before and after the Thera *hiatus*, nor for the stylised, but always non-menacing portrayal of sea creatures. While the distribution of the Marine Style vases and their association with the other Special Palatial Tradition pottery are convincing indicators of *elite* involvement, the iconography seems to make reference to symbolic meanings whose importance goes well beyond the question of power and elite involvement.

Conclusion

The sea was not a strange or unfamiliar place for the Minoans, most of whom lived by or near the sea. The evidence presented indicates that they possessed boats capable of exploring the coast as well as sailing ships or galleys that could safely travel

across the open sea. With other landmasses or islands almost constantly in view, navigation rarely was a problem, and the existence of goods and shipwrecks hint at regular contacts between different regions. Fishing equipment existed to catch or collect littoral and pelagic foodstuff, but fishbone and mollusc evidence firmly suggests that the exploitation of the sea was limited to animals that can be found on the inshore and deeper coastal waters but only exceptionally stretched to the open seas. The faunal evidence is supported by iconographic data, which highlights the lack of fundamental knowledge of some pelagic species, such as triton shells and argonauts. Indeed, isotope analysis suggests that marine food was only a minor component in the Minoan diet. The contrast between capability, availability and actual use represents, I would argue, a certain ambiguity towards the sea; encompassing both the familiar (shore and coastal waters) and unfamiliar (open sea). None of this ambiguity, however, comes to the fore in the marine motifs, which do not engage in any kind of activity and are utterly void of emotion.

As Minoans allocated animals to specific environments, we can infer a worldview that, at its most basic level, contrasts land and sea. The sea, for instance, is represented by octopuses, fish, dolphins and marine vegetation, while land is symbolised by mountains, humans, land animals and mythical creatures. The observation that fish are not depicted on Marine Style vases might indicate a further logical subdivision of the sea environment, namely into a realm inhabited by octopus, triton shells and argonauts and another occupied by fish. Whether this structuring is related to Postpalatial beliefs in the sea as a location for the dead or a liminal zone that needs to be crossed to reach the Afterworld, requires further research. The fact that marine imagery appears on a variety of media in domestic, funerary and ritual contexts increases the probability that we are dealing with motifs that had a multiplicity of functions. On the other hand, the com-

⁷⁰ Gill 1983, 81.

⁷¹ Driessen & Macdonald 1997; Driessen & Macdonald 2000.

⁷² Bruins *et al.* 2008.

parative lack of seafood in the Minoan diet – especially in contrast to the Neolithic – is striking and could be interpreted as deliberate avoidance; a food taboo. Given that the Minoans possessed the capability to exploit the sea, such a taboo takes on an even greater importance and is likely to be linked to symbolic meanings associated with the sea itself and/or its inhabitants. To gain deeper insight into Minoan perceptions of the sea and its creatures, our next step has to be a diachronic analysis of the artefactual and iconographic evidence of both land and sea imagery. It is hoped that, by comparing and contrasting expressions of environments over several centuries, patterns and transformations will stand out clearly.

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