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SEARCHING FOR THE SEA: THE EXPLOITATION OF
MARINE RESOURCES IN LATE BRONZE AGE AEGEAN

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The role of fishing in the Aegean LBA has until now been addressed with respect to its peripheral character within food-producing activities, as it is commonly accepted that affluent LBA societies were strictly oriented towards surplus strategies. A growing body of zooarchaeological data adds new evidence to the available poor record, hitherto based on Linear B texts and artistic representations. The potential and limitations of these research tools are presented in this paper, and an overview of old and new data is attempted, with the aim of re-addressing the role of fishing activities during this period. What stems from this study is the need to reassess the expected vs. contradictory evidence between different records, especially in the light of variable social contexts..

Introduction

If hunting in political economies has received relatively little attention in ancient economic studies and zooarchaeological analyses (Hamilakis 2003), the role of fishing is even more neglected. This volume thus offers a valuable opportunity to address the issue of fishing in Aegean Late Bronze Age (hereafter LBA) societies. In this essay the exploitation of marine resources in this period will be explored on a multi-scale level.

When addressing the issue of subsistence strategies, the role of the environmental potential plays a major role. At the same time, one cannot overlook the socio-economic parameters involved in the choice and development of these strategies. In this respect, the issue of fishing activities has to be viewed within both the environmental conditions and the conceptual grounds of the complex LBA economies. As stressed by Vavouranakis (2011, 13), “although a maritime way of life may be an obvious option, it is neither the only nor an inevitable one in the Aegean”. The existing record for this period will thus be explored toward these research directions. Information on animals from this period may derive from three lines of evidence: Linear B textual information, artistic representations, and faunal remains. The potential, as well as biases and limitations of the available research tools, will be presented and evaluated. With respect to zooarchaeological remains, their contribution as relatively objective markers of subsistence

activities has been acknowledged in the last decades and will be put into the service of this study, aiming at demonstrating how faunal evidence can illustrate the ‘invisible’ fishing activities. Finally, since fishing, like hunting, does not fit easily into the narrative of LBA societal economic strategies, the ideological perception of marine animals and their world beyond zooarchaeological patterns of past marine animal exploitation will be sought.

Fishing activities in context and the missing sea

One of the hallmarks of complex societies is the optimisation of the management of production systems, chiefly characterised by a centralised control. The Aegean LBA societies offer a well-studied case of this model with respect to the uses of domestic animals and their role in the mechanisms of centralised power and redistribution of goods (Galaty *et alii* 2011; Halstead 2002; 2003). Within this well-defined system of production and consumption of both staple and high-value goods, the question arises: what was the role of marine resources within organized economies? Before examining the recently introduced record offered by faunal analyses, it is interesting to examine the theoretical trends and research questions that embrace the exploitation of marine resources at various levels of socio-economic organisation and geographic settings, in the light of available textual and pictorial evidence. A first approach to this issue seems to point to the observation that the role of the sea and its products is far from being highlighted by these records. Although much of the LBA narrative seems to be closely connected to the sea as a medium of travels and cosmopolitan spirit that developed in this period, as a means of establishment of the Mycenaean power in the second half of the LBA¹ certain parts of the human-sea equation seem to be completely missing from the frame. The following thoughts attempt to define the possible reasons of the limits of this activity in the light of the apparent absence of marine resources and related activities from the Mycenaean world.

From an ecological point of view, despite the validity of the argument by Bailey and Parkington, that “aquatic resources cover the whole range of possibilities from large, mobile food parcels such as marine mammals, whose capture may be dangerous and uncertain, and require elaborate skills, technology, transportation, social organisation, to small sessile organisms on the shore edge, such as mussels, which can be collected and eaten by a solitary individual without the need for any special skill or equipment”², the natural potential of the Aegean Sea only covers a small part of the above described spectrum. Within this comparatively poor Aegean ecological profile, specific geographical settings, such as closed bays or lagoons may offer a broader niche to exploit (Theodoropoulou 2011b, 52). One of the principal research records used for the end of the LBA is provided by the Linear B texts. There are no references to fish or shells in the tablets, with the

¹ Vavouranakis 2008, 13-14, commenting on some thoughts of Corvisier 2008.

² Bailey/Parkington 1988, 2; see also Palsson 1990.

exception of the marine product of purple-dye (*pu-pu-re-ja*). On the other hand, it should be remembered that the Mycenaean world is chiefly under-represented through Linear B evidence, as data are severely biased both chronologically and geographically³. In this regard, it could be argued that geographical variability, i.e. inland vs. coastal settlements, must have generated different responses to the marine environment on the Mycenaean mainland, in Crete, and the islands⁴. Prehistoric coastal communities settled at the fringe of the Aegean sea are expected to have engaged a constant visual connection to the sea (Theodoropoulou 2011b). This connection is ubiquitously reflected in the pictorial art of the Bronze Age (Bradfer 2000). The presence of marine animals increases in LBA depictions, either as independent motifs or with the aim of defining the natural environment⁵.

However, geographic landscapes go hand in hand with the social and economic parameters of specific cultural spheres (Wright 2010, 284; Vavouranakis 2011, 13). Following Vavouranakis, “there is always room for choice in the relation between people and the sea and this relation may acquire various forms and different degrees of intimacy”⁶. Bearing the latter in mind, addressed from a social perspective, fish has generally constituted a secondary resource within farming communities. Although from a nutritional point of view the basic composition and caloric content of fish and seafood make them a useful foodstuff for humans (Theodoropoulou/Papathanasiou in press), considerable quantities are needed to cover the needs of a family meal, thus reducing marine products to a supplementary dietary source. The latter is even more true for large agglomerations of population (Halstead/O’Shea 1982). As stated by Orton with respect to hunting, “hunting in farming societies is often seen as an anomaly requiring special explanation” (Orton in press). Applying this observation to fishing, the role of the latter within a farming economy is generally a priori considered as a peripheral activity. When dealing with centralised economies a major issue arises, namely who was fishing, and for what purpose.

To begin with, if we address the issue with respect to central settlements, the provisioning with fish, and related questions, such as control of scheduling and division of labour, as well as the redistribution of catches, are to be sought after. Linear B inscriptions offer a fairly good documentation on the principles of organisation of important branches of the Mycenaean economies, especially those requiring systematic and centralised control, including animal exploitation

³ Underlined by Pullen (2010, 5) and various contributors in the same volume.

⁴ On an example of local variability versus the Mycenaean world: see Tartaron 2010.

⁵ Karali 1996; Vanschoonwinkel 1996; Bradfer 2000; Petrakis 2011. This tradition may be followed down to the Mycenaean pottery style and further later. The Early Iron Age art offers some examples of marine motifs, generally restricted to a more decorative rather than naturalistic level, Buchholz *et alii* 1973, 136ff.; for a brief account on EIA depictions, Theodoropoulou 2011.

⁶ Vavouranakis 2011, 13. Petrakis (2011, 185-186) comments on the sporadic, frequent, or constant interaction with the sea.

(Palaima 1991; Halstead 2002, 2003). On the other hand, some important activities, such as bronzeworking or specialised trades and crafts, are only occasionally or indirectly referred to (Palaima 1991). The latter applies to fishing activities. Linear B texts do not mention any fishermen in connection to the central system⁷. Fishermen appear, on the other hand, in the earlier Minoan and LBA iconography, occasionally in the Early Iron Age⁸. This unequal record, though, is far from highlighting the logistics of fishing activities and their social parameters.

If fishing was performed on a more or less organised level – either from members within the central settlement, or from peripheral groups connected to the centre – it is not known how it was organised or whether fisherfolk occupied a unique niche because of their knowledge. A number of questions are related to the latter, yet they remain unanswered: the property of the boats and fishing gear; the family and/or social ties of people engaged in this activity, including the role of lineage, down-the-line transmission of knowledge, and family specialisation; the genders involved in fishing and circum-fishing activities. The fishing gear and fishing methods chosen, as indicated through pictorial evidence or material remains, may indicate the degree of engagement. They can vary from independent fishing (with line and hook, or specific types of nets) to a more organised effort, with more elaborate methods used to target fisheries more effectively⁹. However, in order to support the idea of organised fishing activities within a centralised control system, capable of providing fish on a regular basis, it would be logical to assume the presence of fishing crews in the form of either part-time or full-time labourers, such as the ones attested in Egyptian and Near Eastern contexts¹⁰. In Aegean LBA iconography, usually male, solitary figures are depicted, but models and depictions of fishing scenes suggest that sailing crews could vary from one to two or more persons¹¹. Female figures in connection to the sea present in the LBA iconography are rather attributed a ritual or divine role¹². The active or indirect role of women and possibly children could yet be addressed with respect to simple fishing techniques, to fishing-related activities (net-mending), or to the collection of invertebrates on the shore¹³. However, it is not likely to suggest that

⁷ Although the term *de-ku-tu-wo-ko* could designate a tradesman involved in the manufacture of nets for fishing or hunting, Palaima 1991. See also references to ship personnel in Petrakis 2011.

⁸ Rose 1994, 138, 160; Powell 1996, 89, 109, 134-137; Dakoronia 2006; Karageorghis 2006, fig. 86.

⁹ Gallant 1985, 58; Powell 1996, 77-78; Greenspan 1998, fig.1.

¹⁰ Near Eastern and Egyptian evidence, on the other hand, make reference to professional fishermen, but evidence on individuals involved in fishing activities is extremely poor (Rose 1994, 416-418). According to Nakassis (2010), many individuals at Pylos were engaged in multiple economic activities, some directly controlled by the palace, some indirectly, and some not at all.

¹¹ Rose 1994, 417. On a discussion of the Cycladic longboats and their use and a reconsideration of Broodbank's suggestions: see Rose 1994, 420-422 and Petrakis 2011.

¹² On the religious component of Minoan style and restrictions, see: Berg 2011.

¹³ Ethnographic examples, see: Meehan 1982.

such social groups could be actively engaged in the provisioning of the central palaces with marine resources.

Coming to the products of the fishing activity, as stressed by Halstead with respect to animal references in Linear B, texts demonstrably offer a selective, as well as incomplete record, namely biased towards the principal domestic i.e. live-stock animals, while wild game is only occasionally mentioned (Halstead 2003). Since Linear B texts only deal with those groups of animals administered by the central redistributive authority, it could be assumed that the missing fishing and fish products would not undergo the central administrative intervention, if this absence is not coincidental. As Halstead specifies with humour, administrative texts keep records of livestock and not 'deadstock' (Halstead 2002, 182). The latter comment has major implications in the formation of the animal lists of the tablets, excluding almost entirely wild species killed off-site. Among various reasons related to this selective pattern, the need for regular supply of specified animals for particular occasions may account for the under-representation of unpredictable wild resources in the administrative records¹⁴. Especially fishing activities are traditionally considered as a high-risk strategy with limited return, usually involving an uneven ratio of labour/time/result. One exception to the opportunistic nature of fishing has been suggested by several authors in the past, with respect to tuna fishing in the Bronze Age. Rose provides a summary of various scenarios based on the seasonal importance of this resource, but he concludes that "the existence of either tuna-based economies or a Mycenaean fishing fleet seem unlikely. (...) Tuna in the Bronze Age were probably a secondary resource that in some areas and years was seasonally important"¹⁵. On a secondary level of exploitation, centralised control and elite involvement with animal production is greater when animals provide secondary products. Marine foodstuffs generally spoil easily, which makes them inappropriate for long-term storage unless curated, especially when important catches are encountered. The latter comments may be particularly valid for affluent societies, such as the ones encountered in the LBA. Textual and pictorial evidence from this period fails to provide any record of secondary processing or storage of marine products in the Aegean¹⁶.

As a whole, based on the textual and iconographic record from this period, there is no evidence to suggest that marine resources featured among animals used for the accumulation of capital and elite wealth, for social control, to increase or augment other forms of economic specialisation, or for other political advantage

¹⁴ On the contrasting evidence offered by textual and archaeozoological data with respect to wild animals, see: Halstead 2002, 186.

¹⁵ Rose 1994, 429-448. According to Nakassis (2010, 139), many staples were not used to support specialised production, but were instead collected and distributed in large public feasts. However, even in the hypothetical scenario of a rare or seasonal landing of a fish-catch in the palace, it would be extremely fortunate to find them in the few surviving tablets that only keep reminiscence of administrative activities conducted over a period of a few months before the destruction of the palaces.

¹⁶ Cf. zooarchaeological record below.

(deFrance 2009, 106). On the other hand, as stressed by various authors, it is of paramount importance to bear in mind the selectivity and geographical biases of both textual and iconographic record (Halstead 2003; Petrakis 2011). Imagery depicts aspects of the world, not everything (Petrakis 2011). Linear B texts are biased towards the palatial economy of specific palaces. Thus, the real, everyday or ‘para-palatial’ (*sensu* Bennet 2007, 190) economy of LBA societies is far from being completely unveiled to modern research. While the palace would have played a major role in the economy of LBA states, the extent to which it reached its control to non-elite institutions and individual socio-economic units beyond the geographical territories assigned to them is under discussion (Pullen 2010, 1-5). For that matter, we dramatically lack information on rural settlements and everyday activities which are not related to the central sites¹⁷. It is likely that different types of animals were exploited at different types of sites, i.e. regions, and for different purposes.

When dealing with an issue related to both environmental and social parameters, such as fishing strategies, it is particularly crucial to “appreciate the scale of analysis as distinct from the scale of the observed phenomenon” (Pullen 2010, 5). Although Palaima is right to stress that it is difficult to know what exactly the absence of references to a subject in the Linear B tablets implies about its place and importance within the Mycenaean regional economic systems (Palaima 1991), however, to follow Halstead’s view (Halstead 2003, 259), the selectivity of the texts may present an opportunity rather than a problem. In order to understand how marine animals functioned in various realms and at different scales, following deFrance (2009), to provide food, to create commodities that denoted status, and to serve as ideological symbols of power, we need to turn our efforts to other lines of evidence. The following paragraphs will explore the two major expressions of marine resources within LBA contexts, with respect to the fishing of marine resources and the perception of marine animals by LBA communities, using zooarchaeological evidence from this period, and when possible, compared to the textual and artistic record.

Material evidence: towards the edible

Material culture and bioarchaeological remains may offer additional and/or contrasting information from the selective records of Linear B texts. Modern research provides a growing body of tangible evidence with respect to the exploitation of aquatic organisms during LBA through the recovery of their remains from excavations. The complementary strengths and weaknesses of textual and zooarchaeological evidence have been developed by various authors¹⁸. As deFrance points out, the nature of the zooarchaeological database has obligated researchers large-

¹⁷ For instance, as Cherry (1988) states, “it seems likely that it was only under the unusual and relatively short-lived circumstances of the palatial economies that there emerged large-scale, specialised pastoralism”.

¹⁸ deFrance 2009; on the Aegean LBA archaeozoological vs. textual evidence: Halstead 2002.

ly to remain grounded in empirical observation (deFrance 2009; Serjeantson 2000).

Evidence from the Neolithic and Bronze Age Aegean suggests that the communities that developed around the Aegean Sea have always engaged some kind of relationship to the marine environment (Theodoropoulou 2007; 2011). Aquatic remains are not missing from coastal and inland Neolithic and Bronze Age settlements (Rose 1994; Theodoropoulou 2007). A growing body of fishbones and shell remains is documented from LBA contexts¹⁹ (see map of the Aegean region, this volume, p. 8). Although little is known from palatial contexts, shells and fish are reported from Tiryns²⁰, Iklaina and Pylos²¹, Nichoria²², and Thebes²³. Further LBA contexts from Troy²⁴, Lefkandi²⁵, Kalapodi²⁶, Mitrou²⁷, as well as LM III levels from Palaikastro²⁸, Kommos²⁹, Knossos³⁰, Mochlos³¹, Kavousi-Vronda³², Chania³³, and Galatas³⁴, point to a more or less important exploitation of marine resources during this period. Late Cycladic contexts offer additional evidence of marine consumption³⁵. The marine element during this period is equally present in different cultural contexts from Northern Greece: Kastanas³⁶, Toumba Thessaloniki³⁷, and Assiros³⁸ in Central Macedonia, adding more evidence to the exploitation of the sea in the Aegean world. Occasional marine remains from Mycenaean insular sanctuaries suggest their use in cult: the upper levels of the Mycenaean sanctuary at Phylakopi³⁹ or Hagia Irini on Keos⁴⁰. The latter finds parallels in continental sanctuaries, such as Hagios Konstantinos at Methana⁴¹. Shells

¹⁹ Similarly, wild resources are much more present in faunal assemblages than they are in the texts. For an account of fish and shell remains from earlier periods in the Aegean, Theodoropoulou 2007.

²⁰ Rose 1994, 371-378; von der Driesch/Boessneck 1990.

²¹ D. Ruscillo, personal communication.

²² Reese 1992.

²³ Theodoropoulou, under study.

²⁴ Uerpmann/van Neer 2000.

²⁵ Reese 2006.

²⁶ Stanzel 1991.

²⁷ R. Veropoulidou, personal communication.

²⁸ Mylona 2007; Reese 2007.

²⁹ Reese 1995; Rose 1995.

³⁰ Rose 1994, 247-250.

³¹ Reese *et alii* 2011.

³² Day/Snyder 2004.

³³ Rose 1994, 220; Reese 2000, 2003.

³⁴ Theodoropoulou, under study.

³⁵ Karali 1990; Birtacha *et alii* 2008.

³⁶ Becker 1986, 223-236; Rose 1994, 244-247.

³⁷ Theodoropoulou 2007, 407-445; Veropoulidou 2012, 343-471.

³⁸ Halstead/Jones 1980; Reese unpublished report.

³⁹ Gamble 1985.

⁴⁰ Coy 1986. Cf. the hundreds of shells from the Temple Repositories at Knossos, Evans 1921, 517-519. Also, see triton shells in LBA contexts in Åström/Reese 1990.

⁴¹ Hamilakis/Konsolaki 2004; D. Mylona, T. Theodoropoulou, under study.

are deposited in the LBA tombs of Perati⁴² and Dendra⁴³. This tradition seems to continue down to Sub-Bronze Age/EIA periods, as evidenced by material from different sites: Nichoria in Laconia⁴⁴, Asine⁴⁵ and Lerna⁴⁶, Assiros⁴⁷, Berbati⁴⁸, Kalapodi⁴⁹, Kastanas⁵⁰, Knossos⁵¹, Mitrou⁵², Torone⁵³, and Xombourgo on Tenos⁵⁴. Although the limited space of this paper does not allow for a detailed presentation of the faunal records mentioned above, some general observations may be interesting. Marine remains are found in most of the LBA sites (see map of the Aegean region, this volume, p. 8), with an increasing presence in sites recently excavated or in sites where detailed sampling methods were employed. The latter comment underlines the difficulty in direct inter-site comparisons, involving standard quantitative zooarchaeological tools. Despite these drawbacks and the important quantitative discrepancies between different sites and regions – regardless or due to the biases inherent in partial preservation and partial recovery, some general trends may be valid. Marine remains are never found in numbers too significant to support the exploitation of marine resources as a staple food. However, variability within the Aegean becomes more apparent when these data are examined at different scales of analysis. It seems that the sea and its products worked differently in different regional contexts. A more significant exploitation is to be observed in Crete, as well as in sites from Northern Greece. Moreover, what seems to be a recurrent pattern is the exploitation of every locally available resource on a rather general and diversified scale. A more specialised strategy towards a limited number of resources can be observed in richer environments, next to rivers or estuaries. Engaging a spatio-temporal approach within regional contexts can probably further refine the level of information acquired within the limits of recovery processes employed. Moreover, in connection with fishing activities, the discovery of fishing tackle all over the Aegean may offer additional information with regard to the methods and aimed species. Although hooks from various materials are usually found in earlier periods, metal hooks have been discovered in LBA contexts⁵⁵. The scanty presence of such finds from this period can either mean a limited use of the hook-and-line method, or that different areas

⁴² Iacovidis 1969-70, 364-366, with references to other Mycenaean cemeteries.

⁴³ Gevjall 1983.

⁴⁴ Reese 1992.

⁴⁵ Reese 1982b.

⁴⁶ Reese 2008a.

⁴⁷ Halstead/Jones 1980; Reese unpublished report.

⁴⁸ Wells/Runnels 1996.

⁴⁹ Stanzel 1991.

⁵⁰ Becker 1986, 223-236.

⁵¹ Reese 1982a.

⁵² R. Veropoulidou, personal communication.

⁵³ Ruscillo 2005.

⁵⁴ T. Theodoropoulou, under study.

⁵⁵ Buchholz *et alii* 1973, 170-175, fig. 55; Powell 1996, 139-158; Theodoropoulou 2011a.

out of the settlement were reserved to storage of such equipment. It is interesting to note that most of the finds from the period come from graves⁵⁶. Occasional evidence of the hook-and-line method is provided by the pictorial record⁵⁷. It is more difficult to attribute a fishing-related use to weights found within settlements⁵⁸. Moreover, the identification of specific fishing equipment goes hand in hand with the various fishing methods chosen and social organisation required for the latter, as underlined in the previous section. It is not until recently that these two lines of evidence, that is faunal remains and material culture, have been viewed under a common anthropological approach in Aegean prehistory (Powell 1996). Moving to the actual consumption of marine foodstuffs within LBA settlements, detailed zooarchaeological analysis, including element representation, butchering methods, differences between marine exploitation, capture methods, coined with contextual information, may bring forward temporal and spatial differences in fish use among different contexts, the economic uses of fish, and whether fish were distributed directly or indirectly to consumers. The latter information may be particularly interesting with respect to organised societies and higher agglomerations of people. Although the study of anatomical representation and spatial distribution of fishbones and shells from prehistoric Aegean points to the consumption of fresh-caught fish and molluscs, there is some evidence of preservation of fish for later consumption in this period. Fish and, presumably, fish products were possibly processed and stored in the Bronze Age, as fish remains from the inside of pots suggest (Ayios Stephanos, Kommos, Knossos: Rose 1994, 214, 248, 266-268; Rose 2008; Reese 2008b). This observation may support the idea of a supplementary food resource, yet important for the variety in the diet of Aegean prehistoric communities (Theodoropoulou 2007). On the other hand, there is no evidence of an important activity related to fish processing, although some resources, namely tuna, could have been seasonally important in some areas and years (Rose 1994, 429-448). Trading of fresh or cured fish over some distance is also present (Rose 1994, 454). Additional evidence of salt gathering in the LBA suggests its use for preservation of different foodstuffs, possibly including fish (Haysom 2011, 142). The use of faunal remains in tracing the exchange of animals between producers and consumers and long-distance trade has been addressed in the past (Crabtree 1990). Although the bulk of relevant evidence from the LBA derives from Egyptian and Near Eastern sources (Rose 1994, 448-454), occasional finds from the Eastern Mediterranean (Cyprus, Levant, and LBA shipwrecks) shed light to a previously unidentified activity⁵⁹. However, attention

⁵⁶ For instance, Mycenae Grave Circle B (graves Y, K, N), Perati cemetery, Sellopoulo tomb (Crete), Powell 1996, 150-179. Cf. comments on professional fishermen in the previous section.

⁵⁷ For earlier examples, Powell 1996, 133 ff.

⁵⁸ Their significance is more straightforward in contexts, such as the Ulu Burun shipwreck, where 107 folded lead strip weights have been identified as fishing-net weights or sinkers, see: Pulak 1988. Similarly, the Cape Gelidonya shipwreck, see: Bass 1967, 111.

should be drawn to the fact that trading of fish and shells cannot be easily archaeologically identified. Association of marine remains with pottery vessels per se does not offer direct evidence of trading activities. Furthermore, faunal remains from the same geographical region, i.e. the Aegean Sea, cannot be attributed to different sub-regions. The sole presence of remains of marine animals not native to the area of study, i.e. exotic faunas, may be recognized as the products of a long-distance transport. On the contrary, the trade of such products at a local scale is extremely difficult to detect.

To sum up, the growing body of faunal data from the LBA Aegean seems to offer a new, independent corpus of evidence on the exploitation of marine resources, often contrasting or complementing textual or other lines of evidence. The potential and limitations of this record have to be balanced individually and the results of every study, including all steps of exploitation, from production to distribution and consumption, need to be merged into the specific social background of this period, ideally at different scales of perception, from the household unit to the macroregional level. The complementary information provided by textual, faunal, and artistic evidence needs to be compared and accordingly evaluated. The latter may be particularly valid when dealing with concepts that go beyond the consumption of the sea on an everyday basis to its social context and to the intangible ideas related to fish as foodstuff and more. The following paragraphs will explore some immaterial aspects of fish and the sea in the LBA Aegean.

The perception of the sea

The social perceptions and symbolic meanings associated with animals are recognised as significant (O'Day *et alii* 2004). As humans we have placed different animals into different categories, according to some notion of species, usefulness, domesticity, or wildness (Hamilakis 2003). As a result of these varying and often contested orderings, animals are assigned to particular places and spaces (Philo/Wilbert 2000, 1, 61). Ethnographic studies have emphasized the difficulty in the perception of the marine world as such and its primary association with its specific use for food within specific socio-cultural contexts (Wolch/Brownlow/Lassiter 2000). In the following, some of these notions will be explored in the specific context of LBA Aegean.

The role of fishing activities and their products in LBA communities is far from being completely unveiled to us. Neither textual nor archaeological evidence do not seem to support a sea-oriented food-producing strategy. On the other hand, faunal data also point to a diversified response to marine resources throughout the LBA Aegean. Although an argument against thriving fishing activities may be built on the observation that, at least a number of major LBA sites are settled at some distance from the sea, the latter cannot be valid for a number of coastal sites.

⁵⁹ Rose 1994, 456-459 (Apliki and Salamis in Cyprus, sites from Lebanon, Israel, and Iraq); Ulu Burun shipwreck (fish inside pithos and murex opercula associated with copper oxide ingots), Pulak 1988.

Thus, complementary documentation of both local environmental conditions and societal economic strategies is important. As stressed by deFrance, “there is significant variability in the politics of animal use depending on the scale, geographic setting, and strategies/goals of the political unit” (deFrance 2009, 108). Although it is true that – given the uneven effort/energy/time ratio of fishing/collecting fish and shellfish would have never been a staple food for higher agglomerations of people – fishing with line and hook or collecting would cover the needs of a family on a daily basis and at a household level (Rilley 1999, 68). Aegean populations from prehistoric times onwards have always engaged some familiarity with the sea. For instance, familiarity with fishing is even reflected in the much later Homeric poems that echo the palatial times, when similes drawn from oyster-fishing or other fishing episodes are addressed by heroes (Theodoropoulou 2011a; Homer, *Il.* 16.476ff). However, at a more macroscopic level of social structure, the different place of fishing and collecting within central palaces and peripheral agglomerations needs to be sought. Although marine resources do not seem to have been a staple for social storage in the central sites, and were indeed not registered as such in the tablets, activities related to the sea could be pursued individually, with minimal tackle and throughout the year in non-palatial settlements. The notion of seasonal complementarity of settlements as a strategy of economic diversification and risk-spreading has been explored, among others, by Bintliff (Bintliff 1977; see also Cherry 1988). It remains to be evaluated through zooarchaeological criteria whether fishing in LBA economies is to be reduced to a locally important, seasonal, or even opportunistic activity, and to what extent.

Turning to the social perception of marine foodstuffs, the quantitative discrepancies observed in the faunal record need to be addressed beyond environmental and socio-economic grounds. Although it is true that fish presence and variability may reflect local habitat more than human selection (Belcher 2003), it is important to look beyond the ratio of availability/time/result into the need of a community to vary its nutrition. Moreover, the quantitative nutritional input of seafood does not necessarily reflect the value attributed by a given human group to this foodstuff (Theodoropoulou/Papathanasiou in press). A variety of factors may affect the choice of the consumer to include them or not in his diet, ranging from socio-economic parameters to prohibition and tabou⁶⁰. Quality and scarcity can be emphasized over quantity or abundance, as luxury in a diet surpasses the

⁶⁰ Counihan 1991, 8-20; Vicente 1995; Wright 2000. For an overview of various expressions of the latter and detailed bibliography (abstinence among pregnant women and circumcised boys; abstinence among nomads; selective consumption linked to gender, i.e. men/women, age, e.g. gypsy children, or social class, such as Egyptian workmen or fishermen or different medieval classes; consumption linked to ideologies, e.g. fish eaten by ancient Greek philosophers or medieval monastic communities; rituals and magic related to fish-consumption; variability in the consumption of marine species or fish part such as head/body or different sizes by men/women), Theodoropoulou/Papathanasiou in press.

use of food to satisfy physiological needs, imagined needs, and perceptions of affluence (Ervynck *et alii* 2003; deFrance 2009). Fish can be luxury food or a low-value bulk food to feed many people in different social contexts (Van Neer/Ervynck 2004). In the LBA Aegean world, wild animals have an ambiguous status as edible resources, as reflected in the Linear B texts and compared to other lines of evidence (Halstead 2002, 186). The contrasting nature of different records regarding marine animals further hinders reconstruction of consumption patterns. For instance, isotopic analysis conducted on the skeletal material from Grave Circles A and B in Mycenae provides evidence of consumption of some marine animals by older men, in contrast to data from the Mycenaean chamber tombs (LH I-III) from the outskirts of the acropolis, that trace no consumption of marine products by the deceased⁶¹. Remote descriptions of affluent societies, such as the ones in the Homeric poems, on the other hand, do not seem to echo such ideologies. Seafood does not seem to be included in feasting activities described by Homer. Fish is completely absent from celebrations and banquets in Homeric households, where guests were offered “many relishes”, and “platters of all kinds of meat” (*Od.* 1.140-142), but no fish; fish is not even preferred by the poorest (*Od.* 4.80-81; Theodoropoulou 2011a).

However, diversity as a measure of status is socially and geographically relative (deFrance 2009). Imported fish remains found inside tombs in Apliki, Cyprus, as well as additional evidence of long-distance trade, described above, highlight what seems to be a distinct perception of imported foodstuffs over locally available ones⁶². Even within the spectrum of local resources, the different value of products deriving from a central vs. a marginal environment, i.e. domestic vs. wild, what Hamilakis compares with high/low, needs to be considered (Hamilakis 2003, 239). In this sense, an unpredictable, low-return resource coming from an environment at some distance from the settlement, such as the marine, may have been considered as a low-value product. However, it could adversely be argued that in the case of marine environments and their resources as perceived by LBA societies, in analogy to the wider sphere of the wild, the socially peripheral may be symbolically central⁶³, and thus destined for consumption at symbolically-loaded occasions⁶⁴. There is no textual or artistic evidence of marine foodstuffs consumed in a ritual context, although marine remains have been found in association with cult places⁶⁵. The role of these resources as part of LBA cult activi-

⁶¹ Martlew/Tzedakis 2000, 223, 227, 231. However, low trophic level fish and molluscs usually fall below the detection threshold of the isotopic methods used by modern analysis, Vika/Theodoropoulou 2012.

⁶² Cf. marine fauna representations in inland palatial contexts (Tiryns, Thebes, Gla): Petrakis 2011, 190, table 1.

⁶³ Stalybras/White 1986 in Hamilakis 2003.

⁶⁴ In the Near East and Egypt, fish were used by the palace and the temple to maintain ties with important individuals or institutions, to acquire goods, or to purchase the service or labor of others, and were also used as offerings, Rose 1994, 449-450, 477.

ties remains to be identified, although various lines of evidence seem to exclude wild animals from rituals. However, following Halstead's view, such products may lose some of their symbolic value to the palace if they are requisitioned for consumption by loyal subjects (Halstead 2002, 186). As a whole, the role of palatial vs. non-palatial consumption, and elite vs. non-elite ideologies related to food, need to be further elaborated in the light of different data sets.

The latter goes hand in hand with the meaning attributed to fishing as a social activity. As stated above, it is almost impossible to define the social identity of fishing through faunal, textual, or artistic evidence. No fishermen are portrayed in almost any of the Aegean LBA records. Moreover, the role of this activity either as part of the common social activities or as an extraordinary pursuit bearing some symbolic value is difficult to assess. With respect to another 'wild' sphere, Hamilakis has analysed the importance of hunting which derives from its very position outside both the routine and the geography of the domestic economy (Hamilakis 2003). Although fishing, like hunting, sometimes involves skill, courage, and organisation⁶⁶, there is almost no evidence upon which to base an increased importance attributed to it by LBA elites. It rather seems that in specific contexts, such as the Homeric epics, fishing was reduced to an activity practiced in the direst of straits by the heroes, who nevertheless seem to be familiar with this world, as they either had fishing tackle with them or knew how to improvise it (Theodoropoulou 2011a). On the other hand, the fishing activity seems to be recognised and worthy enough to accompany the deceased to the after-life, as relevant fishing equipment (hooks, net weights) deposited in tombs, including the Grave circles, suggest (Powell 1996, 139-179). As Rose states, "fishing [in the Bronze Age] was not a single type of activity, discrete from the rest of society, and its role extended beyond its contributions to diet and iconographic repertoire" (Rose 1994, 386). This view leads to our final comment on the perception of marine animals as such by LBA Aegean people.

The presence of marine animals in LBA art is generally associated with a decorative use or with the aim of defining the natural environment (Karali 1996; Vanschoonwinkel 1996; Bradfer 2000). However, depictions on LM IB Minoan Marine Style pottery have been associated with cult contexts and elite expressions beyond everyday fishing activities⁶⁷. Fish and cuttlefish feature among the com-

⁶⁵ On the control of fishing activities in the Near East and Egypt by a central political or religious authority, Rose 1994, 449-450.

⁶⁶ Depending on the fishing method involved and fish species aimed, e.g. tuna-fishing. Some ethnographic examples on the organisation of the fishing activity and skill involved in Theodoropoulou 2007, 389-395; on the skill suggested in the little fisherman fresco from Akrotiri, Mylona 2000.

⁶⁷ See, for example, the discussion about Cretan *larnax* and earlier Minoan funerary representations in Coldstream 1988. Also, Mountjoy 1985; Laffineur 1991; Bradfer 2000; Shapland 2010. Also on the symbolic link between early Cycladic populations, boats, and fish, Broodbank 1989. On the 'Fisherman Vase' from Phylakopi with male figures holding dolphins and its meaning, Powell 1992. On religious connotations of the Minoan Style, Berg 2011.

monest depictions of wild animals on talismanic seals (Shapland 2010). Later examples also seem to be related to votive or funerary objects⁶⁸. Faunal remains of marine organisms are occasionally associated with cult sites, as seen above. Shapland takes this observation a step further, suggesting that since “there are almost no depictions of farming activities in Neopalatial iconography, those who used talismanic and other seals displaying animals wanted to be identified with the animals encountered beyond the domestic sphere” (Shapland 2010, 118; Haysom 2011). In this way, some representations of marine animals may be viewed as more than simple depictions of the natural world, as “the material traces of human-animal relations” (Shapland 2010, 124). The latter has played a central role in interpretations of the animal world in Aegean Bronze Age iconography with respect to a more general ontological cosmic view. Similarly, Petrakis argues that “on the basis of Pylian and Tirynthian evidence, a link between the use of figural marine subjects (...) and the importance of the areas thus decorated can be plausibly suggested”⁶⁹. On a more abstract level, the ideological vs. economic view of the wild vs. the tame has been explored with respect to well-organised communities (Pluciennik 1998, 73-74). In this sense, it would be interesting to address the position of marine animals within this system of values in LBA societies⁷⁰. Local access to marine resources may be a restricting factor to this approach, following Hamilakis’ model; however, their marine origin, different from the natural environment of man, involving an effort and skill for their acquisition, would wrap them up with a remote identity, even within coastal Aegean communities⁷¹. In this sense, it may be assumed that marine animals, depending on or despite geographical availability, may have served a role of “speaking to a fascination with the distant” (Nikolaidou 2003). The latter remains to be confirmed or refuted with respect to the specific social and ideological contexts that flourished in the LBA Aegean.

Conclusion

Searching for the sea in the LBA record proves to be a voyage in the ocean rather than a coast-to-coast sailing. Earlier research on this period evolves around the concept of affluent LBA societies with strictly surplus-oriented strategies with the role of fishing activities within this complex production system being traditionally left out of the picture. Most of the hitherto studies pertaining to the place of wild animals within LBA societies are based on the records of Linear B tablets, which leave no trace of the presence of marine animals within palatial systems of production and distribution. Although this absence may be attributed to a number of social and economic factors that tend to reduce fishing to an unpredictable and

⁶⁸ See examples in Dakoronia 2006. Also Petrakis 2011.

⁶⁹ Petrakis 2011, 192. On a different view, namely on the multiplicity of functions, i.e. domestic, funerary and ritual: see Berg 2011, 132.

⁷⁰ According to Petrakis (2011, 195), expressing the political ideology of Cretan elites.

⁷¹ On a similar view on the attempt to control this powerful element, see Berg 2011, 132.

low-return activity, unsuitable for complex affluent economies, a growing body of zooarchaeological evidence from a variety of LBA contexts brings the sea and its products back into the picture. This paper attempts to offer a brief overview of textual, iconographic, and faunal data, as well as to set a series of questions related to the exploitation of marine resources in this period. What seems to stand out is the complementary as well as often contradictory character of various lines of evidence. Although thus far available data might look rather patchy at first, it is the task of modern research to open new ways into reassessing the expected vs. contradictory evidence between different records, especially with respect to the variable social contexts. The latter underlines the need to look into the entire spectrum of LBA economies, within and outside palatial systems, as current research is increasingly oriented to. Only within well-defined economic and social contexts, a cautionary analysis of all available data may conceptualise different responses to the sea and its products in various realms and at various scales.

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