CHAPTER THREE: INTRODUCTION TO MYCENAEAN EARLY CIVILISATION

3.1: Introduction

This chapter provides the introduction to the Mycenaean case. It is divided into three main parts. The first of these is section 3.2, which discusses the terminology and chronology of Mycenaean early civilisation, situating it within its spatial and temporal context. Close attention in this will also be given to the terms used to define different periods and their impact on the conceptualisation of the historical trajectories of the Bronze Age Aegean. The second part in section 3.3 treats the different sources available for the interpretation of the Mycenaean case, focusing on their strengths and limitations. The detailed attention to terminology and chronology together with the sources makes it possible not only to grasp the case itself but also to more robustly ascertain its comparability with the Maya case in chapter nine. This follows the argument that more consideration should be given to basic source-criticism in comparative studies, as noted in section 2.4. In that main section the approach to early civilisations was also provided, based on the interaction of ten distinct elements or traits in a *longue durée* framework. The application of this framework to Mycenaean early civilisation will be outlined in section 3.4.

3.2: The terminology and chronology of Mycenaean early civilisation

Before turning to the chronology of Mycenaean early civilisation proper, it is necessary to consider it as part of the broader terminology of the Aegean Bronze Age. The most important of these terms is that of the Bronze Age itself, which, as discussed earlier in section 2.2.4, had been modified from its typological use in the Three Age system by Gordon Childe to be considered in terms of societal structures. As we saw there, the Bronze Age as viewed primarily in metallurgical terms was ultimately rejected by Childe as a distinct sociological stage. Yet the idea that the Bronze Age in a more generic sense can be connected, if loosely, to different kinds of cultures than the Neolithic era, can still be seen in some works on the Bronze Age (e.g. Earle 2002). Work along these lines in the Aegean envisions a division between two very different clusters of socio-economic institutions of the Neolithic and the Bronze Age (Barrett & Damilati 2004, 150-153). The former can be seen to have been characterized by a predominance of household organisation and balanced reciprocity, in contrast to the Bronze Age political economy with institutionalised differences of status through wealth accumulation. However, more recent research has shown that the developments in the Neolithic were of such a nature that this distinction has become problematic, and that therefore the definition of the Bronze Age has to some extent to be rethought.

There are two aspects to this revisionism. The first of these is a recognition that the Neolithic communities in various parts of the Aegean were more complex. Elements of this are the connections between various household forms, communal organisation, and exchange, even if this complexity should not necessarily be interpreted in terms of hierarchical social relations (Halstead 2006; Perlès 2001; Souvatzi 2008). The second aspect concerns the recognition that some features of the succeeding Minoan and Mycenaean early civilisations can already be recognised in the Late and Final Neolithic. This concerns not only the long-known larger sites of Sesklo and Dhimini in Thessaly (Halstead 1994, 203-206), but also Knossos and other sites in Crete (Isaakidou & Tomkins 2008). In both regions there seems to have developed an elaboration of architecture, as well as feasting and new kinds of ceramics and other remains associated with this (Halstead & Isaakidou 2011a; Schoep & Tomkins 2012). Yet despite the significance of this, it would be stretching the point too much to see these developments as indicating that a true state had emerged in this period. In addition to this, important cognitive tools such as writing and complex weighing systems were

also still lacking in the Neolithic.

More interesting in this regard is the suggestion by Wright (2004a, 68-69) to conceptualise of the various communities in the Aegean from the Late Neolithic onwards as 'transegalitarian' communities. It is necessary, however, to 'unpack' Wright's general anthropological model, which is crucial for understanding the processes of how these transegalitarian formations gave rise to what may be termed the 'microstates' (cf. Wright 2010, 250) of the Minoan and Mycenaean early civilisations. This question will be addressed below in section 4.4.3 on the position of the Mycenaean case in the *longue durée* of Aegean prehistory. At the other end of the chronological scale, the end of the Bronze Age was signalled by the collapse of the different Mycenaean states around 1200 BC, even if a post-palatial material culture persisted to circa 1050 BC (Dickinson 2006, 72-76). When states eventually re-emerged in the 8th century BC, they had very different characteristics than the Minoan and Mycenaean ones (Bintliff 1997; Morris 2006).[106] Outlining these temporal boundaries allows for the Aegean Bronze Age to be understood in its own terms, while also bringing into focus the continuities and discontinuities with the Neolithic and Iron Age eras.

Of course, the broader geographical context of the Aegean Bronze Age is also part of its definition. In general terms the Aegean occupied a middle position between on the one side the early civilisations of the eastern Mediterranean and the Near East,[107] which had developed earlier, and on the other side the western Mediterranean. In the latter area no early civilisations developed in the Bronze Age, although cultures of considerable complexity can be seen in El Argar and related cultures of the southern Iberian peninsula (Chapman 2008). Considerations of the Aegean trajectory relative to its wider environment took a sharp turn towards emphasising indigenous development in the early 1970s (Renfrew 1972, 236-244). Since then, the development of world-systems theory has renewed attention to interconnections on a broader geographical scale (Sherratt 1993). The debates on this matter are far from settled and involve both evidence for long-distance exchange and the 'technology transfer' of domesticates, metallurgy, and the wheel, as treated in various papers in Wilkinson et al. (2011). There was also the system of ‘international relations’ between the different states and empires of the eastern Mediterranean (Liverani 1990). These political and economic aspects of macro-scale interaction were paralleled by a *koine*, involving the exchange and emulation of art objects and iconographic themes (Feldman 2006).[108]

Having demarcated the Aegean Bronze Age in time and space, it is necessary to consider its internal characteristics, starting with its chronology. The basis of Aegean chronology consists of three tripartite divisions, two temporal ones of Early, Middle, and Late with associated Roman numerals of I, II and III (sometimes elaborated by adding letters and Arabic numerals), and one geographical division of Cycladic, Minoan (Crete) and Helladic (mainland Greece). Northern mainland Greece followed a different trajectory, partly due to its different land-use potential, and only became part of the Minoan-Mycenaean world in the Late Bronze Age. Originally this proved a simple and elegant scheme, though a bit artificial and associated with outmoded ideas of growth and decline (McNeal 1973). But as more data has accumulated over the decades the system has been become very complicated and, according to one authority, *“has in fact become a bed of Procrustes, to which material must be fitted willy-nilly”* (Dickinson 1994, 11). Yet at the same time the scheme has

[106] Certainly not incomparably different (cf. Renfrew 2003b, 317-318), but the impact of factors such as iron-working technology, alphabetic writing, and the use of coined money created a very different set of l*ongue durée* parameters for the different kinds of states to emerge in.

[107] See figure 3 for a geographical outline of the eastern Mediterranean in the Late Bronze Age.

[108] The term *koine* of course derives from *koine* Greek, the form of Greek used as a *lingua franca* in the Mediterranean and Near East in the Hellenistic and later periods. In the Bronze Age, however, the concern is not so much with language but with artistic repertoires that are, to some degree, shared between different cultures, a phenomenon already recognised by Helene Kantor and others in the 1940s (Feldman 2006, 9-13).

proven indispensable, as it forms the backbone for organising the archaeological material. Therefore many archaeologists have found it useful to define broader phases, corresponding better to cultural and historical developments on an Aegean-wide scale, as a complimentary way of understanding the Aegean Bronze Age chronology.

Colin Renfrew (1972, 49-52) provided one such broad scheme for Aegean prehistory, starting with hunting and gathering and later village farming to four important Bronze Age phases: 1) the development of proto-urban communities, 2) the emergence of palace economies on Crete, 3) the expansion of Mycenaean civilisation, and 4) the collapse of Minoan-Mycenaean civilisation. The basic outline of these phases remain in use in most textbooks on the Aegean Bronze Age (Cullen 2001; Shelmerdine 2008a), even if modified to a more refined sequence of the Pre-Palatial,[109] First Palatial, Second Palatial, Third Palatial and finally Post-Palatial periods (Dickinson 1994, fig. 1.2, p. 13). It should be stressed, however, that these Aegean-wide phases are partly masking important regional divergences. Pre-Palatial proto-urban communities developed in Crete, the Cyclades and mainland Greece in the Early Bronze Age, yet the first palaces emerged only on Crete, while in the other parts of the Aegean state-like forms of social organization did not develop until the Second Palatial period. Therefore, we will here use both the regional outlines of trajectories and Renfrew's broad scheme of the main, pan-Aegean phases of development. Finally, the application of scientific dating techniques has allowed for more refined sequences, but methodological problems remain.[110]

[109] As noted earlier, there are some indications that some architectural features of the palaces already were present in this period at sites such as Knossos, Malia, and Phaistos (Schoep & Tomkins 2012). However, the shift to the First Palatial period was profound in terms of material culture and in the scale of urbanism, as can be seen in the expansion of the town of Phaistos (Watrous & Hadzi-Vallianou 2004, 253-256).

[110] Quite apart from the debates concerning the different dating techniques and their results, which are numerous and contentious, there exist many problems when trying to interpret developments historically. Although Manning (1998) has argued that technical developments would result in much more fine-grained chronologies to allow tracing historical developments in a more precise way, this has yet to occur. The stakes can be high, for example in the question whether the last palace at Knossos should either be dated to LM IIIA2 or LM IIIB, although LM IIIA2 remains the most likely date (Preston 2008, 316-318). Even more contentious and with far-ranging historical implications is the debate concerning the precise dating of the Thera eruption during the Neopalatial period (Tartaron 2008, 86-89). Except for the case of Knossos, for the period of the Mycenaean palaces proper there is much less controversy as regards the main outlines of the absolute chronology.

Crete	Cyclades	Mainland Greece	Dates
EM I	EC I	EH I	3100-2700
EM IIA	EC II	EH IIA	2700-2400
EM IIB		EH IIB	2400-2200
EM III	EC III	EH III	2200-2000
MM IA	MC I	MH I	2000-1900
MM IB	MC II	MH II	1900-1800
MM II			1800-1700
MM III	MC III	MH III	1750-1700 (high)
			1700-1600 (low)
LM IA	LC I	LH I	1700-1600 (high)
			1600-1500 (low)
LM IB	LC II	LH IIA	1600-1490 (high)
			1500-1430 (low)
LM II		LH IIB	1490-1430 (high)
			1430-1390 (low)
LM IIIA1	LC III	LH IIIA1	1430-1390 (high)
			1390-1370/60 (low)
LM IIIA2		LH IIIA2	1390-1300 (high)
			1370/60-1300 (low)
LM IIIB		LH IIIB	1300-1200
LM IIIC		LH IIIC	1200-1050

Table 3.1: Aegean Bronze Age chronology (based on Shelmerdine 2008a, figs. 1.1 & 1.2, pp. 4-5).

Mycenaean early civilisation is confined to the presence of palatial forms in the LH IIB through LH IIIB periods. But important elements of the culture associated with it can be found earlier, especially in the so-called Shaft Graves at Mycenae dated to MH III – LH I (Voutsaki 2010a). There are also important chronological subdivisions within the period of the Mycenaean palaces. The most important one is the distinction between the LM/LH II-IIIA and LH IIIB periods. In the former Crete retains an important position within the Aegean, even if there is now a heavy Mycenaean influence on the island. After the destruction of the palatial complex at Knossos in LM IIIA2, the mainland occupies the predominant position within the macro-region. Hence, Mycenaean culture can be seen to have followed a trajectory consisting of three important phases: a) emergence within a Minoan-dominated Aegean in MH III – LH IIA, b) the LM/LH II-IIIA period with the Knossos palace and the emergence of palaces on the mainland, and c) the ascendancy of the mainland palaces in LH IIIB. After the collapse of the palaces at the transition to LH IIIC there was a revival of some aspects of Mycenaean culture, which extends to Cyprus (Iacovou 2006) and possibly to the Levant (Yasur-Landau 2010). This phenomenon is more reminiscent of a *koine*, and there is no connection to clear socio-political units as with the Mycenaean palaces.

3.3: The main sources for interpreting Mycenaean early civilisation

The three main internal sources of Mycenaean early civilisation are the archaeological datasets derived from surface survey and excavation projects, as well as the textual source of the deciphered Linear B script. There are also important sources external to the Aegean Bronze Age, both from the contemporary eastern Mediterranean and Near East and from the later Archaic-Classical Aegean. To start with surface survey, it can be observed that, after pioneering work in the 1960s and 1970s, a 'new wave' of projects crescendoed in the 1980s with over 100 projects in progress or completed so far (Cherry 2004, fig. 1.2, p. 6). This has allowed for the reconstruction of settlement patterns and land-use patterns over long-term periods, though precise diagnostic material is often scarce and the bulk of the material can often only be classed in general MH or LH categories.[111] Most of these projects cover areas of 10-100 km², and this had led to criticism of study areas being too small to address questions of state formation that require areas of 100-1,000 km² at the very least (Blanton 2001). However, macro-regional studies incorporating data from multiple projects can work around this problem quite effectively (Alcock & Cherry 2004, 7-8; Bintliff 1997).

One of the more surprising finds of surface survey, in combination with a variety of other techniques, has been to confirm that urban sites of modest sizes did exist in the Aegean in the Bronze Age (Cherry 2004, 12-14). This is in clear contrast to earlier hypotheses of Aegean Bronze Age early civilisations as being without cities (Dickinson 1994, 51; Renfrew 1972, 236-244). This is most pronounced in Crete, where the largest site of Knossos has now been estimated to have had circa 25,000 – 30,000 inhabitants in the Neopalatial period (Whitelaw 2012, table 4.1, p. 150). But increasingly large settlements can be recognised for the mainland as well. Many of the larger palatial sites have been estimated to have had occupied areas of 20 to 30 hectares (Whitelaw 2001a, fig. 2.10, p. 29), which would generate estimated populations of about 4,000 – 6,000 inhabitants. Significantly, research on secondary sites has shown that they could be relatively large as well, such as the 14 hectare site of Iklaina in Messenia (Cosmopoulos 2006, 220) and the 10 ha site of Kalamianos in the Saronic Gulf (Tartaron 2010, 177). Not much is known about the layout of these urban sites (Cavanagh 2001), but on-going work at many of them, including Mycenae (Maggidis & Stamos 2006), should provide a much better picture of Mycenaean cities.

The excavation of the major palatial centres still forms the backbone of Mycenaean archaeology, and work at these sites continues at a fairly extensive scale. The main known ones are Knossos and possibly Chania on Crete, Mycenae and Tiryns in the Argolid, Pylos in Messenia, Thebes and Orchomenos in Boeotia, and Iolkos in Thessaly (see figure 4 for the major sites on the Greek mainland). For other regions, such as Laconia and Attica the evidence for a palatial center is less clear and remains to be determined, while for the Corinthia it has been proposed that there never existed a palatial complex as a geographical focus at all (Tartaron 2010, 166-172).[112] A set of large tholos tombs near Troezen may indicate the presence of an important centre here as well (Konsolaki-Yannopoulou 2004, 75-76). A variety of secondary, non-palatial sites have also been excavated or are in the process of being excavated, including funerary, religious, and settlement sites.[113] The more extensive work on secondary sites in many of the regions also allows for a better

[111] One controversial problem is that some of the surface ceramics may be impossible to classify beyond a 'generic prehistory' category, due to reasons of taphonomy (Bintliff et al. 1999; Bintliff 2005a). However, this problem may to some degree be regional (Mee & Cavanagh 1999), and does not seem to extend to Crete, even in the LM III period (e.g. Watrous & Hadzi-Vallianou 2004, 298-304).

[112] Another theory is that the location of Mycenae is very suitable for domination of both the Argive plain and the Corinthia as well (Bintliff 1977b, 346). Crucial to resolving the matter is more research on the Mycenaean road network in the Corinthia, and on possible Mycenaean fortifications there as well.

[113] Beyond the secondary centres there are also the tertiary sites and even smaller ones, which are gradually becoming better investigated as well. An example of this is the site of Geraki in Laconia.

reconstruction of the regional economic and political structures of Mycenaean society, not only in well-known regions like the Argolid (Sjöberg 2004), but also in regions previously seen as marginal such as Thessaly (Adrimi-Sismani 2007).

The introduction of new scientific techniques in the archaeology of the Aegean Bronze Age has been one of the major sources for increasing both the quality and quantity of the data available, as well as for facilitating entirely new kinds of analysis (Tartaron 2008, 121-122). Examples of these include bioarchaeology and archaeozoology, the analysis of human burial remains, as well as the study of more conventional artefacts, including, but not limited to, metal objects, lithics, and pottery (Tartaron 2008, 126-129). For some categories of artefacts, such as vitreous materials (e.g. Tite et al. 2008), it has also been possible to use various scientific techniques to trace exchange throughout the eastern Mediterranean. Another very important development is the introduction of new ways of analysing the material remains in terms of its descriptive properties. A good example of this are studies of pottery that investigate their contextual use and consumption, for example in drinking or feasting contexts (e.g. Haggis 2007), alongside more traditional typological analyses. Taken together, the modes of analysis from the physical sciences and those providing detailed quantitative and qualitative descriptions of the material, have allowed for a much greater interpretive potential of the Aegean Bronze Age archaeological record.

The indigenous syllabic script known as Linear B was deciphered in the 1950s as to have been written in Greek, and has proven immensely important for the interpretation of Mycenaean early civilisation. It was part of a broader tradition of syllabic scripts that originated in Crete around 2100 BC, and included Cretan Hieroglyphic and Linear A on Minoan Crete and Cypro-Minoan on Cyprus (Singer 2000), none of which have so far been convincingly deciphered. Linear B itself is directly derived from Linear A (Palaima & Sikkenga 1999). It is thought to have started on Crete at Knossos in LM IIIA1 and ended at the LH IIIB/C transition on the mainland (Driessen 2008, table 3.2, p. 76). But a recent discovery from the site of Iklaina in Messenia has been tentatively dated to LH IIB-IIIA and points to an early mainland presence of the script (Shelmerdine 2012). It may not be possible to pinpoint the exact origin of Linear B, but since the 'spelling rules' seem to derive from Linear A (Palaima 2010, 362-365), considerable Cretan influenced can be assumed. The bulk of the material with Linear B consists of some 5,000 inscribed clay records from sites on Crete and the mainland (Palaima 2010, 358), most of them accidentally preserved through being fired in destruction events, together with shorter texts on Inscribed Stirrup Jars (Van Alfen 2008).

Almost all Linear B tablets are from palatial sites, with the exception of the new find from Iklaina. The largest records are those from Knossos and Pylos, which are followed by lesser amounts of tablets from the sites of Mycenae and Thebes. These textual records are almost exclusively concerned with administrative matters as part of a running year, although they can occasionally look back or forward one year, thus gaining a maximal temporal span of three years (Palaima 2010, 358-9). The tablets have yielded important insights into palatial administration, in particular the political and economic hierarchy, as well as military matters, and also for technology, cult practices and the names of deities. No literary texts or other complex narratives have been found on the tablets. One very interesting characteristic of the records of the different palaces is the uniformity they show in terms of the terminology that is used (Palaima 2003b, 162). At the same time it should be emphasized that the Linear B record represents an incomplete and fragmented record, forged by calamitous contingencies, and cannot be seen as a true historical record.[114]

[114] There is a distinct possibility that the clay tablets represent a preliminary step in the formation of a true archive which would have been recorded on perishable materials (Driessen 1994-1995, 244). The material evidence for this is scant (Perna 2007, 226-228). The most important evidence comes from the use of clay nodules to seal parchment, used in conjunction with Linear A in Neopalatial period Crete. This practice has not been observed for the Mycenaean period, however, and the Linear B tablets contain much longer and elaborate recordings. Another piece of evidence comes from

Apart from the internal archaeological record of the Mycenaean Aegean, important external sources of information exist in the contemporary eastern Mediterranean and Near East, and in the later Archaic-Classical periods of the Aegean itself. The participation of the Aegean palatial states in the eastern Mediterranean system of 'international relations' is well attested by the presence of *orientalia* on Aegean sites and by Aegean artefacts found in other regions, as well as a number of references in Linear B (Cline 2007; Mee 2008). From Egypt there is also evidence for what are likely Mycenaean warriors on a painted papyrus from Amarna, along Aegean influences on tomb paintings, as well as textual references to the *Keftiu* and *Tanaja* (Cline 2007, 197). These names may respectively refer to Crete and the Greek mainland, while a number of specific Aegean sites are also listed. A number of different letters from Hittite Anatolia refer to a kingdom in the land called *Ahhiyawa*, which has been interpreted as most likely located in the Aegean (Beckman et al. 2011 ; Mee 2008, 374), which may be further substantiated by Syro-Palestine texts (Cline 2007, 198). Such texts and images need to be understood in a source-critical manner, as we shall discuss in more detail in section 4.3.2 for *Ahhiyawa*.

The connection between the early civilisations of the Aegean Bronze Age and the succeeding Archaic-Classical city-states is interesting but problematic. It is clear that the dramatic character of the destruction of the palaces (Dickinson 2006, 43-46), and the disappearance in the Aegean of writing, large urban centres, monumental art, a large-scale economy, and the state constitutes a major break (Morris 2006. Yet, on the other hand there are important indications of some degree of continuity. Many of the important deities of the Archaic-Classical period are listed in the Linear B tablets (Palaima 2008, 348-349), although some disappear and cult practices also change (Dickinson 2006, 223-228).[115] The question whether sources from the Archaic-Classical period can be used for the Bronze Age then becomes one of weighing continuity versus discontinuity, and nowhere is this more poignant than for Homer. While it is clear that the society depicted in Homer has important elements from the Archaic period when it was written down (e.g. Crielaard 1995; Morris 1997), it should not be seen as simply a sociological reflection of the era. Rather, the epics reflect an ontology, a worldview rather than a society, that is expressed in living communities of performance. The question is how far such communities can be traced back, and what kind of changes occurred in what continued to be performed and what not.

Oral tradition has been proposed as a possibility through which poetry would be transmitted through the generations (Foley 2005). There is some evidence of linguistic features in Homer that predate the language-use of the Linear B tablets, and hence such formulations would have been preserved in the traditional *Kunstsprache* of oral tradition (Bennet 1997, 523-527). The existence of oral poetry in Mycenaean early civilisation is therefore likely, especially if one considers that such poetry was of central importance in many similar Indo-European cultures (West 2007, 7-11). Furthermore, the contemporary Near East also had important poetic traditions, especially those of Sumer and Akkad in Mesopotamia, but also in Egypt (Sasson 2006). The problem is, of course, that without Mycenaean-period texts the only way to investigate continuity and discontinuity is to connect the later texts to the archaeological sources. Sherratt (1990, 2005) sought to correlate specific features of material culture in Homer with archaeological reconstructions of material culture, yielding an 'evolutionary model'. This model creates an layered temporal structure in which different features

the Uluburun shipwreck off the Anatolian coast, dated to the 13th century BC, where a wooden diptych was found that likely was used to document the accompanying goods. Some possible indications for the use of such a script carrier comes from Pylos and Knossos in the form of small bronze hinges. They are also known in Homer (*Iliad*, Book VI, 198-200) and from several Near Eastern contexts from both the Late Bronze Age and the Iron Age. According to Perna (2007, 229) their most likely function was to accompany and document travelling goods.

[115] A somewhat different phenomenon is the ritual activity that took place at palatial sites after their collapse, as can be seen at Knossos (Prent 2003) and on different sites on the mainland (Antonaccio 1994).

of Homeric material culture can be related to different periods (Sherratt 1990, fig. 4, p. 817). The linguistic evidence makes it more likely that these features were not mere antiquarian references, but rather derived from oral tradition, and therefore can be used as comparative reference points for selected features of Mycenaean material culture.

Finally, there is also the question of even longer-term continuity, stimulated by ethnographic fieldwork in more traditional areas of early modern and modern Greece. Scholars have noted the problematic character of this, citing the effects of the modern state and the connection, however weak and indirect, to international trade, not to mention the impact of the Greek Orthodox church (Dickinson 1994, 5-6). For this reason attention has been focused on traditional agricultural practices and crafts, though here too important changes can be observed due to the impact of different technologies on agriculture (Bintliff 2011). Although it is important to remain cautious of the imposition of dichotomies between modern and pre-modern to contrast regional stability as constructed through ethnography with national and international narratives of progress (Fotiadis 1995), there may be some long-term adaptations to the material conditions of the landscape. These were referred to by Braudel in his master-work on Mediterranean history as the 'civilisation of the rocks' (Braudel 1972, 775), a concept that remains tantalising but underdeveloped.[116]

3.4: Interpretations of Mycenaean early civilisation

3.4.1: Introduction

Before turning to the substantive interpretation of Mycenaean sources, it is important to briefly discuss the overall framework in which these sources are interpreted. Aegean Bronze Age archaeology today is very much part of a broader world archaeology, both in terms of techniques used to analyse data and in the kind of interpretive questions asked of that data (Tartaron 2008). An early impetus for this came from Renfrew's (1972) account of the emergence of civilisation, in which he used systems theory to bring together diverse factors in a coherent framework. These ranged from the ecology of olive cultivation to religious symbolism (Renfrew 1972, 489-494). All of these factors have received more study in the decades since, but arguably their interaction has been studied to a lesser degree, in particular with regard to the symbolic and cognitive aspects (Renfrew 2004, 268-270). We shall return to this issue in section 5.3. Here it is important to note the societal context of Mycenaean archaeology in terms of its position in 'Originsland'.[117] The founding of the modern Greek state in 1821, together with the pivotal position of that state in the geopolitical balance of the eastern Mediterranean, helped shape this. In the terms of Trigger discussed in section 2.4.1, they respectively gave rise to nationalist and imperialist perspectives.

This has led to different conceptions of Mycenaean 'Originsland', with the national discourse stressing more the long-term continuity between the different phases of the Greek past without major breaks, as exemplified in the work of Christos Tsountas (Andreou 2005). By contrast the imperialist strand placed the Aegean Bronze Age within the context of a pan-European identity, though different aspects were emphasised in this. One strand glorified the Mycenaeans for their

[116] Some interesting proposals have been put forward for the relation between neural networks in the brain as responses to the social and physical environment and the model of habitus developed by Bourdieu (Bintliff 2005b, 130). From a somewhat different perspective, it has been argued that Bourdieu's concept can be connected with the results of geoarchaeology: with the data from the latter to be seen as impacting habitus at various scales (Jusseret 2010, 700).

[117] A large number of studies have been devoted to the role of modernism in Aegean Bronze Age studies recently. Rather confusingly the term is used to refer both to artistic and literary appropriations of the past (Gere 2006, 2009; Leontis 2005; Ziolkowski 2008) and to the 'modernist' work of Evans, Childe and Renfrew as carrying forth an 'archaeology of progress' (Schoep & Tomkins 2012, 2-4). Normative ideas concerning progress and civilisation have already been discussed in chapter two, and this discussion informs the positions adopted here.

masculinity and aggression, even involving fascist appropriations (Gere 2006, 117-144). On the other hand Minoan Crete was put forward by Arthur Evans an an island characterised by an internal peace, even if backed up by a large naval force to ward off outsiders (Papadopoulos 2005, 94). With the fading of the European empires after the end of the Second World War, a new emphasis on Classical Greece became an important defining element of the new NATO alliance (Gress 2004). The Mycenaean case did not fit in well in this narrative. The similarities of the Mycenaean palaces to those of the contemporary eastern Mediterranean and Near East, as indicated by the decipherment of Linear B in the 1950s can be seen as one reason for this. It was partly responsible for a characterisation of this society as 'Asiatic' and thereby completely different from the citizen-farmer society of the Archaic-Classical *polis* (Palmer 2001, 43-50).[118]

Caught between the focus on the rise of the Minoan palaces and of the Archaic-Classical *polis*, the Mycenaean case can be viewed as an aberration in the 'Originsland' of Western civilisation. From the philosophical-methodological perspective outlined in chapter two, however, the 'landscape' of the Greek past offered up by Tsountas is much to be preferred for its lack of gross distortions. It is also a view that lends itself to a Braudelian focus on the *longue durée* of Greek history, as exemplified in (Bintliff 2012). Of course, modern political boundaries are not neatly coterminous with past social formations, but the embedded view of historical trajectory allows for the kind of comparative framework outlined in the previous chapters. It also has the potential to connect closer to the *demos* of the country itself, and thereby to make archaeology more relevant than as a self-contained intellectual construct. Based on a comparison of evaluations of the rise of social complexity in Bronze Age Iberia and the Aegean, it has been proposed that researchers should address more closely the connection between these debates, heritage and current affairs (Legarra Herrero 2013, 247-8). To this may be added questions regarding the representation of different periods of the past in educational curricula, as for Minoan Crete (Simandiraki 2004), and more broadly in literary and artistic movements as well.

3.4.2: Elements of Mycenaean early civilisation

The discussion of Mycenaean early civilisation starts with the first element of the list outlined in table 2.4 of section 2.4.3, that of the basic agricultural means of production. A key stimulus in this was the work of Renfrew (1972). His main thesis was that the Mediterranean triad of cereals, vines, and olives was not only a basic constituent of Classical Greek civilisation, but also crucial to the emergence of civilisation in the Aegean during the Early Bronze Age (Renfrew 1972, 280-288). The role of the olive in this early development has been questioned by some scholars (Halstead 2004, 192-193), and an alternative exists in the form of the so-called 'secondary products revolution' first formulated by Sherratt (1981). This involved the secondary exploitation of domesticated animals for wool, milk and traction from the late 4th millennium BC onwards and was applied to the emergence of complexity in the Aegean (Van Andel & Runnels 1988). However, the accumulation of more data, especially using new scientific techniques, has called into question the revolutionary impact of this development as well.[119] Furthermore, by the Late Bronze Age the olive did in fact

[118] Most extreme is the case of Hanson (1995). He takes a very negative view of the agricultural system of the palaces, titling the chapter on the demise of the palatial system 'the liberation of agriculture' (Hanson 1995, 25). In fact the Mycenaean system is explicitly compared to the collective farming systems of 20th century socialist regimes (Hanson 1995, 30). Leaving aside this more extreme example, it is remarkable how many negative normative statements continue to be made about the Mycenaean state system, contrary to the more nuanced views that come from a closer reading of the evidence (e.g. Palaima 2007). It may well be that such ideas are one of the reasons why there have been so few comparisons of the Mycenaean and Archaic-Classical states.

[119] The accumulation of data from zoological and botanical remains shows that the developments of secondary forms of exploitation should not be seen as a single event spreading across regions, but rather more as a series of more local adaptations spread out over a longer chronological range (Halstead & Isaakidou 2011a).

play a large role in agriculture (Riley 2002, 65), as did the vine (Palmer 1994). With regard to livestock, significant numbers of cattle were used for agricultural purposes (Killen 1998; McInerney 2010; Palaima 1989, 1992a), and large flocks of sheep were kept for wool, which was used to make large quantities of textiles (Burke 2010). Hence it can be noted that, even if their origins and their role remain less clear, all elements of Mediterranean polyculture were present in the Mycenaean period.

The importance of polyculture in the Mycenaean palatial period seems to be corroborated by the observation that the geographical distribution of the palaces is largely confined to the southern Aegean, mirroring the spread of the succeeding Archaic-Classical *poleis*. The main reason for this was the different potential for agricultural development in the southern and northern Aegean. The south was more suitable for polyculture due to differences in geological and climatological conditions, especially temperature, the kinds of soils available, and the amount of rainfall (Bintliff 1997, 24-26; Halstead 1994, 196-198). This should not be seen as ecological determinism, however, but rather as 'possibilism' in that in many other areas in the Mediterranean with similar land-use potential never developed large urban centres and early civilisations (Lewthwaite 1983). Furthermore, there were considerable differences in settlement densities and trajectories between different southern mainland regions (Bintliff 2005a), as noted originally by Dickinson (1982). Yet for all these historical contingencies, there did exist general constraints at the macro-regional level. Included in these were the fact that the elements of the polyculture triad were fixed in biotechnological terms, and that the ability to create surpluses depended largely on the investment of animal and human labour, as well as on technology.

To understand this better it is important to consider the central role of wheat and barley, which occur in large quantities in the Linear B tablets (Palmer 1992, 2008). In later Greco-Roman times these crops accounted for 70-75% of calorific intake (Foxhall & Forbes 1982, 68-71). A variety of land-use strategies were possible for Bronze Age farmers to grow wheat and barley, including prolonged fallowing and intensive horticulture (Van Joolen 2003, 103-104, 110). A system of rotational fallowing and the use of draft animals for ploughing would be the prime way to mobilise surpluses of wheat and barley.[120] Recent scientific restudy of zoological remains from Knossos have shown that in the Neolithic cows were likely used for ploughing in combination with intensive horticulture, changing in the Early Bronze Age to the use of oxen for this purpose (Isaakidou 2006, 2008, 2011). The preliminary data from Middle Neolithic Kouphovouno also seems to indicate the use of cattle for traction (Vaiglova et al. 2014, 207) The connection between oxen and the ability to create surpluses of wheat and barley is not only the key way to create surpluses, but the ownership of such animals was also an important basis for socio-economic power (Gilman 1990, 160-161; Halstead 1995, 17-18; Manning 1994, 236-237). On the mainland the use of oxen goes back to at least EH II (Pullen 1992), and both the Cretan and mainland Linear B tablets list large numbers of them (Killen 1998; Palaima 1988, 1992a). These were used not only for agricultural work but also for sacrifices as part of the calendar of public festivals and feasts that will be discussed below.[121]

[120] The reason for this is based primarily on the constraints of the two 'labour bottlenecks' of ploughing and harvesting in the pre-industrial Mediterranean, as the plough is far superior to the hoe in tilling the land in being able to work an area of about 6 ha over a 20-30 day campaign (Foxhall 2003, 79-83). Since the energy requirements of the farming household itself are considerable, it is hardly possible to create large surpluses of wheat and barley through the manual tilling of the soil. This created a dichotomy between intensive horticulture cultivation, including the use of cows for ploughing, and extensive cultivation of wheat and barley for surplus mobilisation using oxen, with the intensive system being limited to a catchment of a 500 metre radius on the basis of ethnographic evidence (Isaakidou 2008, 101-4).

[121] The tablets from Pylos seem to be more focused on the role of oxen in religious ceremonies, which may be due either to the specific part of the agricultural season they record or to a more decentralised system of herding cattle in Messenia (Palaima 1992a, 472-473). Even if there had existed significant numbers of oxen that would have been owned and used outside of the palatial sphere, the need to sustain large-scale populations would require close management by the palaces (McInerney 2010, 52-53).

Palatial involvement can also be seen in different landscape-modification projects such as the possible creation of a harbour in Messenia (Zangger et al. 1997, 613-623), and drainage works in the Argolid (Zangger 1994) and in Boeotia (Iakovidis 2001, 155-157). Other proposed cases exist that have not yet been sufficiently proven (Hope Simpson & Hagel 2006, 216-224). A plausible case has recently been made that at least some of the terraces in the hinterland of Kalamianos on the southern shore of the Saronic Gulf were constructed in the Late Bronze Age, despite the difficulties of dating these structures precisely (Kvapil 2012). Parallel to such interventions we can see the involvement of the palaces in handling cereal surpluses. At the site of Gla the capacity of the storerooms, their function indicated by large storage vessels and remains of wheat, would potentially have been as much as 2,500 metric tons (Iakovidis 2001, 83). The Linear B harvest records from Knossos list almost 800 tons of cereals from *da-wo* in southern Crete (Killen 2008, 172).[122] Recent work on storage facilities at Ayia Triada and Mycenae seem to indicate a similar scale of cereal storage, and based on find patterns also suggest that this surplus was used to feed dependent personnel or alternatively to store fodder for (ploughing) oxen (Privitera 2014, 444-445). Given the constraints on Bronze Age farming technologies, the control over grain surpluses of this magnitude show considerable palatial impact on agricultural production.

Turning now to the second element of urbanism, it is important to stress the limitations of the available evidence. As noted in section 3.3, this is particularly acute for the issue of the layout of (urban) sites, but also hinders demographic reconstructions because of the 'hidden landscape' problem in survey. Overall, however, it is possible to observe that the agricultural technologies available in the Bronze Age placed clear limits on the scale of urbanism, with maximum sizes of towns within 5 kilometre radius catchments at 12-14 hectares and of larger centres drawing on larger hinterlands at 80 hectares (Bintliff 2002, fig. 1, p. 160). This is in line with the sizes of Mycenaean towns and larger centres listed in section 3.3, and comparable, even if occupying a lower place on the ladder, to urbanism in other areas of the eastern Mediterranean (Whitelaw 2001a, fig. 2.11, p. 30). Moving from the parameter of scale to the structural properties of Mycenaean urbanism we see that the survey evidence, notwithstanding its limitations, has powerfully stimulated the development of human ecological models. Important in such models are the limits of practical face-to-face interaction to a group of roughly 150 persons, the minimum of 500-600 persons for an endogamous reproductive community, as well as a 5 kilometre radius limit for agricultural catchments (Bintliff 1999a). Between them, these factors would create a constant process of settlement fissioning and landscape infill, unless socio-political means could be developed that allowed for communities to transcend the limits of face-to-face interaction.

When a community succeeded in overcoming the face-to-face threshold and reached 500-600 persons, thus allowing endogamy (if rarely completely so), structural changes occurred within it. The socio-political innovations that allowed for larger groups to coexist at the same time created the conditions for the development of small city-states, perhaps better termed village-states or *Dorfstaaten* (Bintliff 1999a, 532-537). Yet the typical scale of these at 2,000 – 4,000 persons still allowed for face-to-face interaction among a group of less than 200 adult males, which in the case of the Greek *poleis* would constitute the hoplite class of warriors (Bintliff 1999b, fig. 7.1, p. 136).[123]

[122] Southern Crete has also revealed a more long-term record of cereal storage, as can be noted for the site of Ayia Triada where storage regimes from the Neopalatial through Post-palatial periods can be traced (Privitera 2014). Interestingly, the trajectory shows a contrast in storage capacity and uses between the LM IIIA2 administration from Knossos (when the harvest from *da-wo* was recorded on the tablets) and the preceding and succeeding periods (Privitera 2014, 443).

[123] A similar kind of argument, even if approached somewhat differently, is outlined by Kosse (1990, 282-284), who argues for a threshold of 2,000 – 3,000 persons for villages to retain an ethos of egalitarianism based on the face-to-face interaction of adult males. Furthermore, the threshold seems to correspond to changes in socio-political elaboration as well, at least as can be inferred from cross-cultural statistics (Feinman 2013a, 39-41). It is important to emphasise here

For the Bronze Age the same kind of processes can be recognised, starting already in the Neolithic (Bintliff 2012, 54-59). However, the limited impact of metallurgy on agricultural production before the development of iron-working circumscribed the potential for state formation, especially for smaller regions.[124] Notably, when iron tools became widely available the productivity of crops did not increase, but rather the capacity of working the land and reaping the harvest relative to labour did. This allowed for greater farming surpluses. Yet in those regions where Mycenaean states developed, fairly dense population densities were achieved using Bronze Age technology, as can be seen for the settlement pattern of the Argive plain (Cherry & Davis 2001).

As noted earlier, it has long been recognised that there existed considerable differences in the trajectories and densities of settlement across different regions, and this impacted state formation processes as well (Cavanagh 1995). In some cases the trajectories of smaller sites and secondary centres seems bound up with the (political) expansion of the largest centres. A study of intensive and extensive survey data from the north-eastern Peloponnese shows this clearly. Here the number of small sites grew concurrently alongside the larger centres in areas immediately surrounding them, while in other regions such growth occurred only suddenly in LH IIIA-B, seemingly spurred by the expansion of the state (Wright 2004b, 127-128). In the region of Messenia a similar pattern can be observed in more detail, as the Linear B evidence allows some insights into the expansion of the state centred on Pylos to regional primacy (Bennet 1995, 1999).[125] This process also seems to have had an impact on the growth, or lack thereof, of certain sites (Shelmerdine 2001, 125-128). It should also be noted that in both regions many of the secondary sites were of sizes comparable to the *Dorfstaat* model, but they never developed into such states due to the development of regional-scale polities. Hence alongside a process of growth and landscape infill in the core regions like the Argive plain, in less central regions a pattern can be observed in which the socio-political factor of regional state formation impacted local settlement patterns and trajectories.

Economic relations are the third element of Mycenaean early civilisation to be discussed here. Before turning to the specific aspects of this, it is important to note briefly the overall paradigms that have shaped debates on this issue. Early work was greatly influenced by the concept of redistribution. This can be generically defined in the Mycenaean case as the mobilisation of resources by a centre which subsequently distributes them (Killen 2008, note 37, pp. 173-174). Originally this concept was based on parallels with the Bronze Age Near East and on anthropological models developed by Karl Polanyi and his collaborators (Finley 1957; Polanyi 1968a; Renfrew 1972, 480-482). However, the notion of redistribution has been comprehensively questioned recently (Nakassis et al. 2011). In part this is based on the realisation that palatial control was less extensive than previously thought in both the Aegean and Near East, an issue that will be further explored below. Another factor can be found in a shift in favoured anthropological models away from redistribution towards market exchange (Parkinson et al. 2013; Sjöberg 2004). Based partly on Mesoamerican parallels (Feinman 2013b), this approach seeks to broaden the recognition of a market considerably. This can be seen in the notion that *"any negotiated exchange of goods is,*

that this threshold should not be identified with a strongly determined typology based on differences in scale. Rather, it can be used to compare the different solutions adopted to address the socio-political problems inherent in the limits to face-to-face communication, as these derive from universal human biological features.

[124] This can be seen very well for a number of different survey areas on the Greek mainland that in the Bronze Age yielded small sites or even only a few sherds, but in the Archaic-Classical period saw the emergence of one or more *Dorfstaaten*. Perhaps the best example is that of the Argolid Exploration Project. In the LH period a pattern of small villages can be seen, with only scant evidence for hierarchy and a total estimated population of 1,800 people spread over 18 sites (Jameson et al. 1994, 368-372). By contrast in the Classical-Hellenistic period the population is estimated at 10,885 people, concentrated primarily in the two city-states of Halieis and Hermion (Jameson et al. 1994, 383-386). Although the Bronze Age landscape may be partially obscured due to taphonomic factors, the difference in population size and socio-political development is very clear.

[125] See figure 5 for a schematic outline of this process in Messenia.

in fact, a balanced, reciprocal market exchange regardless of the scale or degree of institutionalization of the market" (Aprile 2013, 430; cf. Parkinson et al. 2013, 418).[126]

Even those sympathetic to the idea of Mycenaean markets have noted that this definition is rather too broad to be very useful (Shelmerdine 2013, 450), and in fact it has very little to recommend it. There is no credible evidence that the courtyards of Mycenaean palaces and settlements may have functioned as marketplaces, as recently proposed by Parkinson et al. (2013, 419). While we may acknowledge here the limited evidence for Mycenaean site layouts and households, it is revealing that the much better known Minoan settlements have not revealed any significant indications for the existence of marketplaces.[127] This implies that the actual function of a market-based system in the Aegean Bronze Age is far from proven. It is argued here that it is more useful to move away from typological uses of terms such as redistribution and market exchange, and explore the specifics of economic relations in more detail (cf. Earle 2011, 239). The first of these specifics to be considered here concerns landholding, on which the Linear B tablets give some tantalising if hard to interpret clues. The most important of these clues can be found in the Pylos E-series tablets, which deal with landholdings mostly in areas near the palace itself (*Documents*, 240-269).[128] The property relations described in these tablets appear highly complex and somewhat oblique, involving estates of various sizes belonging to individuals of different statuses and occupations, as well as involving tenancy and obligations of services (Killen 2008, 162-168).

Although some of the plots listed in the E-series were held by the *wanax* and other state officials, most of the land was held by the *da-mo* (Killen 2008, 164). The interpretation of the *da-mo* is not straightforward, but in Pylos refers to administrative districts controlled by dedicated palatial officials (Shelmerdine & Bennet 2008, 300). On analogy with the later Greek *demos* it has been connected with long-term village-communities (Donlan & Thomas 1993), but this seems too specific and here the association with districts is retained.[129] Interestingly, there are indications that the landholding system and the service obligations associated with it, were based on a pre-existing system that was kept in place by the Pylos palace (Shelmerdine 2006, 74-75). Also relevant for landholding is the control and allocation by the palace of large numbers of working oxen, the crucial importance of which was noted earlier for the element of agriculture. Teams of oxen may have been supplied to the *da-mo* in a share-cropping arrangement (Halstead 1999). We might expect

[126] It is arguably a small step from such formulations to Adam Smith's idea of an innate human tendency to 'truck and barter'. The usefulness of Polanyi's work lay precisely in showing that such ideas have to be demonstrated as functioning within historically defined institutional settings (Polanyi 1968b). The main contemporary critique of Polanyi is of his rigid dichotomy between market and non-market societies (Heejebu & McCloskey 1999, 288-90), one that is often repeated in archaeological discourse (Parkinson et al. 2013, 418; Smith 2004, 75-76). While it is clear that sometimes Polanyi overstated his case on market-less exchange (Dale 2013), in other work he devoted much attention to investigating the role of markets alongside redistributive systems in the Greco-Roman world (Polanyi 1977, 145-276). The key to this is the distinction between markets as places of exchange, alongside other forms of economic relations, and the use of a market system for the ordering of societies as a whole (Polanyi 1977, 123-126). This point is accepted here, based on its likeness to Braudel's distinction between markets and capitalism discussed in section 2.3.1.

[127] The only feature that can be interpreted as a market, even if in name only, is the so-called *Stoà del Mercato* that was built in LM IIIA2 at Ayia Triada, which featured a stoa-like structure in combination with a large storage area and was associated and later connected with a Mycenaean-style corridor house (McEnroe 2010, 136, 144). A similar association between a stoa-like structure and storage facilities can be seen at the same site in the Neopalatial period (McEnroe 2010, 110). These structures have not been used to argue for marketplaces in Minoan and Mycenaean Crete, and rather may be a site-specific feature. Furthermore, as noted earlier the storage practices at Ayia Triada can be understood as part of a a regional, long-term system involving administrative control.

[128] The more sparse references to landholding from other sites suggests the same terminology was used here (Palmer 2002, 224). A detailed analysis of the Pylos landholding record suggests that these terms formed part of a well-developed template for administrative purposes (Lane 2012, 100-101).

[129] This can be seen in that the almost 800 tons of cereals appropriated by the Knossos palace came from the *da-mo* of *da-wo* in southern Crete (Killen 2008, 172). This amount of agricultural surplus clearly transcends the boundaries of what can be mustered by a village, and more clearly fits a larger district focused on a second-tier centre.

that as in Mesopotamia (Moorey 1999a, 2-3) metal farming implements would be distributed by the palaces, but the tablets are silent on this. The rather meagre record of metal agricultural tools from the Aegean Bronze Age is dominated by sickles (Blackwell 2011, 79-80), which were used to augment human muscles in the farming labour bottleneck of harvesting. As such, with landholding the Mycenaean palaces seem to have adapted to pre-existing systems and used them for the extraction of agricultural surplus rather than impose direct bureaucratic control over farming.

Of crucial importance in moving the debate away from typology is the question of how exchange and the determination of value functioned in technical terms. There is no evidence for coinage or any other all-purpose money in the Bronze Age Aegean (Killen 2008, 173-174; Schaps 2004, 57-62). This implies that the four main uses of money as means for payment, as standard of value, as store of wealth, and as means of exchange (cf. Polanyi 1977, 102-103) were not as yet fused together in a single object. The result of this was that different equivalencies had to be calculated or established by different means for the different uses of money.[130] Polanyi (1968, 321-328) had tried to make a contribution to this through his concept of 'sub-monetary devices' that posited a composite tax unit, which would yield a number of different materials and/or goods in fixed proportions to each other. Although this was only a brief formulation, subsequent research has shown that taxes were first calculated for the state as a whole, and then divided over the different administrative units (Shelmerdine 2008b, 146). These taxes consisted of raw materials, except for simple garments (Killen 2008, 189-191). Much research has been done since, however, showing that the notion of redistribution has to be greatly qualified.

Within the palatial sphere redistribution can be recognised in the *ta-ra-si-ja* system, where a given amount of raw materials was supplied to craft-workers who were obliged to produce a certain number of products, primarily textiles and metals (Burke 2010, 72-74; Killen 2008, 177; Nosch 2006). The greatest amount of palatial control can be seen in groups of textile-workers dependent on rations, to be discussed in more detail for the element of class and inequality. While this can still be seen as part of a redistributive economy, there are many crafts that are not covered in the tablets, or at least not at a scale that would cover the total production of the kingdom. A case in point is that of pottery, where the Pylian evidence shows only limited needs and palatial intervention (Hruby 2013; Whitelaw 2001b), while the data from Mycenae and the Argolid seems to show more elite control (Galaty 2010; Pullen 2013, 440). Where with pottery there was at least some palatial involvement, an analysis of chert in the Argolid shows that it seems that its production and exchange took place completely outside the palatial sphere (Newhard 2003 ,118-119). As such there seems to have been a continuum of complete palatial control of craft through dependent work-groups to other kinds of craft seemingly practiced without palatial control at all.

Because of this variation a 'two-sector' model has been proposed, with one sector controlled by the palaces and another independent of that, if still interacting with the palatial sphere (Halstead 1992, 116). The problem with positing such 'sectors' is that the Linear B evidence is so fragmentary, and indeed may not have covered all palatial involvement. This makes it nearly impossible to ascertain whether any archaeologically recovered location of craft production was truly independent or not.

[130] The claim for references to monetary-like exchange in Linear B, as argued for in (Sacconi 2005), cannot be seen as analogous to the use of an all-purpose money like later Greek coinage. That is, even this claim were to be accepted, the four money functions of payment, storage, exchange, and treasure remained distinct from each other (cf. Seaford 2004, 16-19). The term *qi-ri-ja-to*, which etymologically related to later Greek *priato* ('bought') only occurs in the context of humans, as in Homer (Killen 2008, note 38, p. 174). There is no abstract measure of value applied to the exchange of these humans. With regards to archaeological finds, it has been proposed that miniature metal axes found at a few sites on Minoan Crete may have been used as money (Michailidou 2003, 311-314). Even if they indeed functioned as means of payment, rather than as votives or for other ritual purposes, there is nothing to suggest that they were used as an all-purpose money like coinage.

Instead the analysis of personal names suggests that it may be more fruitful to consider dependence and independence in a common framework (Nakassis 2013, 173-186). The metal-workers seem to have enjoyed a relatively high-status and acted independently, in clear contrast to the dependent textile-workers, but the smiths remained within the palatial context (Nakassis 2008, 2013).[131] Similarly a survey of the various kinds craft-work carried out in sanctuary contexts leads to a conclusion that here too there is no dependence upon the palace, but rather the assertion of a certain degree of independence within the overall framework provided by the palace (Lupack 2008, 162-167). To be able to more fully comprehend these forms of independence, it can be useful to consider in more detail the means of exchange that connected the different individual and institutional actors.

Of central importance in exchange was the use of weighing instruments in accounting for the different raw materials and products and establishing equivalencies between them, even if measurement by volume also occurred (Michailidou 2010, 74-75). Analysis of weights within and outside the Aegean have shown that it was fully integrated in the weighing *koine* of the eastern Mediterranean (Alberti & Parise 2005; Pakkanen 2011). More problematic is the role of seals in the Mycenaean administration and exchange, as the manufacturing of hard-stone seals ceased by the end of LH IIIA and only soft-stone and glass ones were made in LH IIIB (Krzyszkowska 2005, 234). This has led to the observation that seals were not as important as in the preceding Minoan palaces, mostly limited to the movement of goods to and from the palaces and outlying regions (Younger 2010, 337). An analysis of the evidence from Pylos suggests more complex uses (Flouda 2010). There also was a connection with Linear B in the form of inscriptions on some sealings (Palaima 2000, 262), and as with the tablets the evidence from the different palatial sites shows a high degree of uniformity (Krzyszkowska 2005, 284; Panagiotopoulos 2010, 299-300). Furthermore some evidence points to the transfer of goods over significant distances, as with the Thebes sealings that describe the mobilisation of resources for a feast from far-flung sites (Dakouri-Hild 2005).

The standardisation of Linear B, weights, and sealing systems indicates the importance of the overall framework of the Mycenaean states for facilitating exchange. It was already noted by Morris (1986, 185) that within this overall framework there may well have been scope for markets, in particular at the local level. As noted earlier such markets cannot be recognised in the archaeological record so far. Furthermore, the interaction between local communities to acquire goods from distant places was already present in the earlier phases of the Neolithic, and can be grasped along the lines of reciprocal exchange (Perlès 2001, 294-296). More interesting than the hypothetical notion of marketplaces is the question whether the so-called 'corridor houses', like the Ivory Houses at Mycenae,[132] can be said to have had a 'private' or 'public' function (Burns 2007; Pantou 2010; Tournavitou 1995, 2006). There are some indications that the attribution of such functions was more flexible and could actually change over time (Pantou 2010, 266-70). As such, it seems that a rigid distinction between 'public' and 'private' should be avoided. This point seems to be reinforced by an analysis of the personal names in the Pylos Linear B tablets referred to above.

If accepted, it makes possible another perspective in which certain (elite) houses play an important role in socio-economic relations. The idea of houses as 'actors' in their own right is an idea has already been explored for Minoan Crete (Driessen 2010). The role of houses can also be seen for

[131] A generic pattern of metallurgical production being small-scale and spread out seems to have been current for the Aegean Bronze Age as a whole, with little evidence for centralised, state-based control over this form of craft-work (Tzachili 2008, 25-26). This observation sits somewhat uneasily with the seeming elite-based control over copper ingots used in exchange discussed below.

[132] These four houses immediately show the complexity of the issue as in fact they are not really separate houses but can be seen as being part of a larger complex, albeit including residential areas (Burns 2010, 148). There are other examples of elaborate houses at Mycenae as well, however, such as the Panagia group (Shear 1987). Some of these houses will be discussed for contexts of art in section 5.2.

LC IA Akrotiri, where different houses seem to have been involved in significant economic activity using weighing systems (Michailidou 2010, 77-9). Find contexts of weights in houses can in fact be observed for the palatial societies of Crete and the mainland as well (Michailidou 1999, table 1, pp. 89-91). It is certainly not inconceivable that Mycenaean elite houses could have played a similar role, using the standardised system of weights and perhaps also Linear B and sealings. Rather than to seek to develop this idea through Levi-Strauss' (1982) notion of 'house societies', it would be better to look for parallels with recent work on the role of households and patrimonialism in the Bronze Age Near East.[133] Based on work at Late Bronze Age Ugarit, Schloen (2001, 310-311) argues that the evidence of the houses at Mycenae points to some similarities. This does not imply that such a template can be directly imposed on the Mycenaean evidence, but it does point to a way to investigate in more detail the role of houses. Although much remains to be investigated, elite houses would make for more plausible foci of semi-private economic activity than marketplaces.

One very interesting point concerns the question where the input for these equivalencies derived from, which brings up the matter of consumption. Here the role of prestige-objects and ritual feasting have been recognised as especially relevant, something already recognised in the 1980s (e.g. Morris 1986). The idea developed by Killen (1984, 254, 262) of the palaces as producing high-prestige goods for both gift-exchange and display within the palaces is of some use here. He cites analogies with the Near East and Homer to argue for the prestige associated with the storage of at least some of these items in palatial contexts (Killen 2008, 177-181). The larger-scale textile production capacity may have played an important role in this as well (Burke 2010, 104). The notion of storage is tied up closely with the model of redistribution, while others seek to stress the expenditure of resources on performance in feasting activities, coupled with a form of wealth distribution (Nakassis 2010, 138-139). Citing these two positions hides much underlying complexity, but in general terms the palaces can be seen as places where value was created (cf. Dakouri-Hild 2012, 477-479). The precise balance between the storage and display of prestige-objects, as well as performance in feasting and ceremonies more generally remains to be determined. In this the agency of monumental and non-monumental art plays an important role in evaluating the specifics of this balance, and this question will be addressed in detail in section 5.3.

An element closely connected to economic relations is that of long-distance exchange. In a way this would seem to merely extend the reach of the previous element, but the different geographical context also implies differences in the character of exchange relations. First of all it is important to briefly note the main things that were exchanged. Very important were the metals, with the demand for copper and arsenic or tin to produce bronze alloys creating a need for long-distance imports given the limited Aegean resources in this regard (Bintliff 2012, 85-86). Such ingots were exchanged in the form of ingots of copper and tin (very rarely of bronze), as can be seen in the Uluburun shipwreck dated to the end of the 14th century BC (Mee 2008, 364). These ingots are more closely associated with high-level exchange among states (Sherratt 2000, 83), and this would extend to the glass ingots found in the Uluburun wreck as well, as will be discussed in section 4.3.2.[134] However, evidence from another shipwreck at Cape Gelidonya, dated to the late 13th

[133] The model of Levi-Strauss is held to be problematic here because it is used to do two things at the same time. On the one hand there is the notion of a 'house society' as a recurring if not universal form of social organisation, and on the other hand it also serves to look at the social, economic, and political roles of houses (Gillespie 2000). It is argued here that these should not be conflated, as the investigation of the role of houses transcends 'house societies'. Furthermore, as a model it almost harkens back to cross-cultural typology based on ethnographic parallels, a method that was strongly critiqued in section 2.4.2. In contrast to this the role of households and patrimonialism in the Bronze Age Near East can be grasped within the context of its macro-regional *longue durée* (Schloen 2001, 101-116).

[134] It has been argued that the copper ingots functioned as a standard of value in exchange over a wide area stretching from the western Mediterranean to the Black Sea (Kassianidou & Knapp 2005, 237-238). As such they would have been convertible not only in the sense of being exchangeable for something else, but through metallurgical processing could literally be converted in to a variety of forms and objects (Sherratt 2000, 83). The older idea that the 'oxhide' shape

century BC, shows the exchange of scrap metal as well (Mee 2008, 365). This is suggestive of the long-distance exchange of metal separate from direct state control, quite possibly by smiths and merchants themselves (Muhly 2009, 26; Sherratt 2000, 87-88).

These notional merchants could also have been responsible for the widespread distribution of Mycenaean ceramics, especially in the eastern Mediterranean but also in its western part (Van Wijngaarden 2002). A key question in this is how these merchants would relate to the palaces, an issue already noted by Finley (1957, 135-136) as being very hard to determine. Based on the finds of personal items in the Uluburun wreck it has been proposed that there were palatial emissaries on board (Pulak 2005, 308-309). More systematic insights can be derived from the weighing systems used over a wide area, stretching from the Aegean to the Indus, since the third millennium BC, a development closely related to both long-distance exchange and internal administration (Rahmstorf 2010, 2012). Weights functioned as cognitive tools for converting equivalencies over long distances, but at the same time also allowed for the control over exchange as they required specialised knowledge and some kind of authority (Mederos & Lamberg-Karlovsky 2004, 204-207). This created in effect an 'international marketplace' in which merchants of various stripes could interact, but this should not be conflated with an over-arching market system, as concluded by Aubet for Old-Assyrian trade:

"The merchant speculated on prices and the value of the merchandise and calculated profits as a function of the prompt delivery, either plentiful or inadequate, of metals and textiles; this, in turn, depended on the regularity of the caravans. Hence, as the evidence indicates, price fluctuation was a circumstantial rather than a structural factor and not a determinant in the Old-Assyrian economy. Nor does the use of silver as a measure of value and means of exchange imply the existence of a market economy. The real determinant in the Old-Assyrian colonial circuit and the chief source of income for the commercial firms and the Assyrian administration was the difference in the prices of tin, silver, gold, iron and textiles between Assur and Anatolia." (Aubet 2013, 369)

As noted earlier for economic relations weighing systems were very much present in the Aegean, and in fact evidence for them can be traced as far back as the Early Bronze Age (Rahmstorf 2003). However, based on a comparison with typical 'merchant assemblages' from contemporary eastern Mediterranean regions most finds of weights in the Aegean seem to indicate use in local economic activity (Hafford 2001, 347-348). Only in the Late Bronze Age can coherent signatures of merchant tools be recognised, including for the Mycenaean mainland (Hafford 2001, table 9-6, p. 367). Just as with the intra-polity economic relations discussed earlier, a mix of 'private' and 'public' roles in long-distance exchange can be inferred from the distribution of weights and the exchange of scrap metal and pots.[135] One good model for this has been developed for the Late Bronze Age city-state of Ugarit in Syria, where a network-based approach has been used to understand the connections between the different groups involved in long-distance exchange (Routledge & McGeough 2009). The further development of such models can allow for a better causal understanding of the impact of broader shifts in trading patterns on the Mycenaean palaces (cf. Sherratt 2000, 89).

Moving from economic to socio-political patterns, the next element to be considered is that of state form. Models proposed for this show considerable variation, ranging from the notion of micro-states embedded in their regional contexts and resembling in some ways, if at a lower scale and with important differences, the Classical city-state (Wright 2010, 250-253), to the theory that a Great

signals a close relation with oxen as a standard of value seems now an obsolete conjecture (Muhly 2009, 18).

[135] Much more research in this regard can be done for medium-distance exchange and especially for the role of elites and the palaces in this. For example, it has been suggested that sealed stirrup jars from the House of the Oil Merchant at Mycenae indicate the longer-distance transfer of oil from western Crete (Krzyszkowska 2005, 289).

Kingdom dominated the mainland (Kelder 2010). In order to grasp the weight of the evidence relative to these two opposite poles, it is best to start at the regional level. It was already noted for the element of urbanism how in the Argolid and Messenia settlement patterns were impacted by the expansion of palatial authority, incorporating incipient *Dorfstaaten* as secondary centres.[136] In this sense it is more appropriate to refer to them as regionally embedded city-states, rather than as territorial states. This model is strongly backed by, where it is available, the Linear B evidence.[137] The elaborate hierarchy of administrative, religious and military offices of the Mycenaean state was closely embedded within a regional framework (Nosch 2008, 603). This includes offices that were tied to administrative units like the *da-mo-ko-ro* in charge of a province and the *ko-re-te* and *po-ro-ko-re-te* who oversaw districts (Shelmerdine 2008b, 133).

At the apex of the state hierarchy stood the *wanax*, which has been commonly interpreted as a monarch (*Documents*, 120). From the tablets it can be inferred that the *wanax* had religious and administrative duties, in addition to being closely involved in a variety of economic activities that seem to have formed part of a royal domain (Shelmerdine 2008b, 128-129). Below the *wanax* a variety of offices existed to exert close control over those issues that were deemed important for the state, with many of their occupants also involved in economic matters, as will be further discussed below for inequality. While Linear B gives a brief glimpse into the workings of the state, only archaeology allows for tracing the *conjoncture* of its emergence. An important feature in this regard is the funerary record, which, just as with the settlement data, shows considerable regional variation.[138] The case of the Argolid is again instructive, owing to the early elaboration of the Shaft Grave circles at Mycenae. The tombs point to a conspicuous display of the wealth of certain lineages, using the prestige goods or *keimelia* mentioned above, which were often gained through long-distance exchange (Voutsaki 1999, 109-112; Wright 2008, 238-239). In due course with the elaboration of palatial architecture and administration, however, it is possible to observe a shift to state structure, whether conceived of as from chiefdom to state (Wright 1995) or from a kinship-ordered society to one based upon a political economy (Voutsaki 2010a, 104-105).

At the transition from LH II to IIIA it is possible to argue that incipient regional city-state systems were emerging on the Greek mainland. This does not mean that stability reigned thereafter, however, as can be inferred from the destruction of Gla already before 1200 BC (Iakovidis 2001, 156-157) and the fact that the 'further province' of Messenia was not brought under the control of Pylos until the LH IIIB period, after a period of gradual expansion (Bennet 1999, 142-149). Meanwhile the Linear B references to administrative linkages between different regions are scant (Bennet 2011, 150-151). Even so there are some indications from finds of soft-stone sealings in peripheral areas that the 'bureaucratic field', rather than direct control, of the palaces extended beyond their core regions (Eder 2007a, 40). All of this puts into considerable doubt the notion of a

[136] There are good parallels for this in the *megalopoleis* of Classical Greece, which also grew to regional levels by incorporating nearby communities as districts, dependent settlements, or dependent poleis. The territorial size of such *megalopoleis* could range from 1,000 to 12,000 km² (Hansen & Nielsen 2004, 72). See for a human geographical account of the expansion of *megalopoleis* (Bintliff 1994). The difference for the Bronze Age is that the available technology and social system, such as the means of exchange, constrained the emergence of very large cities.

[137] It is unfortunate that the Linear B record of the different sites in the Argolid has very little to say about the geographic outline of the state(s) present here (Bennet 2011, 156-157). The result is that it is not possible at present to determine whether the palaces of Mycenae and Tiryns, among many other larger sites here, formed part of a single regional state or were divided into two or more states. It should be stressed, however, that the existence of multiple palatial structures certainly does not rule out that they were part of the same state (Crouwel 2008, 270).

[138] This concerns not only different types of tombs favoured in different regions of the mainland, but can also extend to the societal significance of these patterns, for example in the more gradual trajectory of Pylos and other centres in Messenia as compared to the sudden emergence of Mycenae (Voutsaki 1998, 55-56). An even bigger difference can be observed between the mainland and Crete in this regard, even if there are clear Mycenaean influences in the funerary record of the LM II-III period (Preston 2004).

large territorial state called *Ahhiyawa* on the Greek mainland, in particular because the earliest references to this name in the Hittite record date from the late 15th and early 14th centuries (Beckman et al. 2011, table 1, p. 7). Yet as notes earlier at this point even the regional city-states were only weakly developed. Nor is it altogether proven, even if there is some plausibility to the idea, that *Ahhiyawa* was necessarily located on the Greek mainland (Bennet 2011, 161-162). If it was, then it may not so much have constituted a hegemonic polity but rather a bonding together of forces, as can be seen for the Greek military formations under Agamemnon in the *Iliad* (Beckman et al. 2011, 5-6; Bintliff 2012, 186).[139]

Closely related to state form is the next element to be discussed here, that of military organisation. The broad outlines of what may be termed a 'warrior culture' can already be seen in the Shaft Graves of Mycenae (Blakolmer 2007; Harrell 2012). The broader geographical extension of such images and their relation to the art of the later Mycenaean palaces will be discussed in section 5.2.3. In terms of organisation there is a clear shift from this 'warrior culture' to palatial hegemony and control of military forces (Acheson 1999; Harrell 2009, 165-167).[140] Although the Linear B tablets give no blueprint of the military organisation of the Mycenaean palaces, several important aspects can nevertheless be noted. One of them concerns the recording of military equipment, especially that relating to chariots (*Documents*, 360-381). This implies some degree of control over weaponry by the palaces, even if the extent of this cannot be reliably estimated based on the limited evidence. The tablets from Pylos also point to palatial involvement in the organisation of military forces such as 'rowers' and 'coast watchers' in association with certain place names (*Documents*, 183-194).[141] One notable feature in this is the relation at Pylos between these military duties and the landholding terms (Shelmerdine 2006, 78), which were discussed earlier for the element of economic relations.

The impact of the emergence of the palaces and the extension of their control can also be observed in the 'infrastructure' of warfare, primarily in fortifications and roads. Fortifications can already be noted for the LH I-II period, but the large-scale 'Cyclopean' fortifications had to wait until LH IIIA (Fitzsimons 2011, 103; Hope Simpson & Hagel 2006, 26-27). At the same time it should be noted that not all palaces seem to have had the Cyclopean-style fortifications so well-known for the Argolid. This can be seen in the lack of clarity with regard to the presence and character of fortifications at the Pylos palace (Bennet & Davis 1999, 105-106). The best evidence for road networks also comes from the Argolid (Cherry & Davis 2001, fig. 10.1, p. 143). There is some debate on whether these roads would have been used primarily for military purposes or to transport goods for economic reasons (Hope Simpson 1998; Jansen 1997). The most plausible military use is for the rapid movement of forces using chariots (Hope Simpson & Hagel 2006, 170-175). Apart from such land-based evidence for warfare, the palaces could also extend their power

[139] Some Near Eastern references point to the use of such terms to denote 'lands' rather than states, as in the Hittite usage of the 'land of Hatti' (Postgate 2010, 31-32). This could point to a possibility that the frame of reference in these sources is more accommodating to political divisions within Ahhiyawa, a notion to be explored further. In her diachronic model of the development of Mycenaean political economy Morris (1986, 186-187) pointed out that it may have been possible that a centre such as Mycenae would have established reciprocal relations with the other regional centres through the control and redistribution of prestige-objects, especially those acquired through long-distance exchange. From the analysis of the number of 'contacts' between the Greek mainland and the eastern Mediterranean it appears that Mycenae dominated in this regard from LH I through IIIB (Parkinson 2010, fig. 2.2, p. 23). The rich finds from the citadel of Thebes, in particular the imported lapis lazuli cylinder seals, belie the picture of a complete dominance of Mycenae, however. Furthermore, it should be noted that the single reference to a 'Great King' of Ahhiyawa is considered ambiguous by some Hittite scholars (Bryce 2003, 70-72).

[140] The case is quite different for Crete, where the introduction of martial elements in burials from LM II onwards (e.g. Alberti 2004) takes place in a context in which palatial states had existed for centuries. The role of warfare during this period is subject to reinterpretation (Molloy 2012), but the different trajectory in the articulation of weaponry in burials compared to the Mycenaean mainland is clear.

[141] The so-called *e-qe-ta*, translated as 'followers', seem to have acted as intermediaries between these locally-based forces and the palace (*Documents*, 544).

geographically through naval forces. This adds another dimension to the territorial scope of the palatial states and that of smaller-scale polities as well, as has been explored through the concept of 'seascapes' in different regions of the Greek mainland and their coasts (Tartaron 2013).

The seventh element to be discussed is of class and inequality. This aspect of Mycenaean early civilisation remains somewhat underexplored at the level of synthesis, with analysis focusing mostly on specific sources such as Linear B and the burial record. One exception is the model of 'transegalitarian societies' developed by Wright (2004a), but this is a long-term model that has so far not adapted to the Mycenaean case in detail. Scholarship on the Near East (Boer 2007; Schloen 2001) and the Greco-Roman world (De Ste. Croix 1981; Finley [1973] 1999; Kamen 2013; Rose 2009) by contrast has allowed for sophisticated debates on class and inequality involving both source-critical analysis and synthesis. It is not possible here to review these debates in detail, but one notable insight that has emerged from them is that the relationship between class in an economic sense and its impact upon political mobilisation is a tricky one. For example, factors such as political roles or status may have played a more determining role (cf. Finley [1973] 1999, 49-51). This is not the place to provide a synthetic account of Mycenaean class and inequality, yet inspired by the work just mentioned at least a few patterns can be discerned.

The first of these concerns the question of slavery. The term *do-e-ra/ro* occurs in the tablets and has an etymological connection to the later Greek term *doeros* for slave, but its identification as slave is in many cases not straightforward (*Documents*, 123-124). Some of the *do-e-ra/ro* are in fact subjects of deities and can own plots of land. A better interpretation of the term may be as a 'servant' (Nakassis 2013, 14-15). Apart from the people designated as *do-e-ra/ro*, there are also groups of female textile-workers that are seen as comparable to slaves (Shelmerdine 2008b, 139). The reason for this is that they were organised as coherent groups and dependent upon the palace for rations. The presence of such work-groups involving hundreds of textile-workers is attested at both Knossos and Pylos (Burke 2010, 93-94, 97). The existence of such groups is well-known for the Near East as well (Uchitel 1984), where the initial emergence of textile workshops is related to the development of a political economy and the subordination of female textile-workers (McCorriston 1997). Based on the evidence from the tablets it is likely that the members of some of these groups derived from outside contexts, perhaps taken as captives (Chadwick 1988) but this only constitutes a minority of 468 out of a total of 2,899 recorded dependent groups of workers in the polity administered by the Pylos palace (Efkleidou 2002-2003, 274).

Another pattern concerns the notion of patrimonialism that was discussed for the element of economic relations. Given that even the economic function of the Ivory Houses and similar cases remains to be fully determined, it is best not to go too far in interpreting them in social terms. More information can be derived from the Linear B sources. The analysis of personal names in the Pylos tablets suggests that alongside the 100 or so officials listed in them about 800 personal names can be discerned, which points to a broader elite group (Nakassis 2013, 173). The tablets only point to individuals, however, whereas they would have been part of families and broader kinship networks.[142] Here the burial evidence can be more informative, even if it is not possible to relate it in any way directly to the Linear B evidence. Most notable in the LH IIIA-B periods is that the so-called chamber tombs seem to become accessible to a broader group of people, with richer and poorer versions being grouped together in clusters (Mee & Cavanagh 1984; Cavanagh & Mee 1998).[143] Taking into account the evidence from all kinds of burial, a fairly large 'elite' group may be

[142] There have been suggestions based on the burial evidence that women were under-represented, even if there are no clear differences in the wealth deposited in burials that can be identified as male or female (Mee 1998). It has been suggested that for the position of women considerable differences can be observed in the Linear B tablets from Knossos and Pylos, with more expansive roles for women in the former case (Olsen 2009).

[143] The authors conclude that this indicates a form of patronage between families:

discerned (Dickinson 2006, 39). It should be taken into account that both the personal names and the burial evidence (which are by no means identical) combine aspects of status and economic roles.

Not to be neglected is the role played by the corporate bodies of the *da-mo* and the sanctuaries. As noted earlier, their relation to the palace entailed a degree of independence within the over-arching state system. Especially interesting in this regard is a text that shows arbitration by the palace in the case of a conflict with regard to landholding between a priestess and the *da-mo* (Nakassis 2013, 170-171). This is just one isolated example of what must have been a wider set of judicial relations, if not necessarily codified in law, which would have regulated social and familial relations as well. Of the reach of the palace in these matters little can be said, even if it is likely that through the locally-based officials it would have had the ability to be involved. Having briefly outlined these patterns, it would seem that just as for the Greco-Roman world the pattern that can be observed for class and inequality in the Mycenaean case is multi-dimensional. Direct economic exploitation can be seen in the groups of female textile-workers, taking place within the bureaucratic framework. For the majority, however, it is likely that inequality was structured through the two parallel lines of patron-client relations and the corporate bodies of the *da-mo* and the sanctuary. This represents a mixture of economic, status, and judicial relations.

The element of monumental architecture and art will of course be extensively discussed in the next two chapters, but here some remarks need to be made with regard to the use of over-arching terms such as Minoan and Mycenaean as cultural signifiers. Analogies with modern conceptions of ethnic identities for these terms, which are etic ones invented by modern scholars, are highly doubtful (Preston 2008, 311-312). References to (parts of) the Aegean in contemporary texts from other eastern Mediterranean early civilisations would refer more to a polity or geographical area, rather than a specific and well-defined ethnic group in the modern sense. A significant number of the names listed in the Linear B tablets indicate different origins in terms of language and geography, including from areas outside the Aegean (Nikoloudis 2008a). It would seem more promising to relate the notion of Mycenaean-ness to socio-political patterns and their ideological manifestations in monumental architecture and art. In particular it is important in this regard to consider the interaction between the palaces and the social subdivisions they incorporated. For example, it has been proposed that Mycenaean culture was limited to the upper class, interacting in a peer polity network (Feuer 2011, 528-530). The emergence of this culture before the emergence of the palaces and its persistence for a considerable period thereafter calls for further qualifications to this.[144] As with the impact of Minoan culture across the Aegean, the impact would not have been limited to material culture (Broodbank 2004), but also includes other factors like linguistics (Renfrew 1998).

Turning now to the element of specialised knowledge, the first aspect of this to be discussed is that of Mycenaean conceptions of the supernatural. From the Linear B tablets it can be inferred that the vocabulary for key aspects of religion such as *theos* (deity) and *hieros* (holy) were the same as for the Archaic-Classical Aegean, and many of the names of deities are the same as well (Palaima 2008, 348-350). This indicates the presence of a pantheon of (predominantly) anthropomorphic deities, even if there are important absences of Archaic-Classical deities and presences of gods that would

---

"Thus the conclusion reached in our earlier [1984] paper was that each cluster may have consisted originally of a nucleus of one or two tombs but by LH III the clusters might comprise the tombs of up to a dozen families, rich and poor. Because of the disparity in the size and wealth of tombs, and thus in the status of the families concerned, we would propose some loose political alliance whereby the poor associated themselves with the rich in death. That side by side with the hierarchical divisions indicated by the tablets, there were local associations and alliances which bound together families of different wealth and status." (Cavanagh & Mee 1998, 234)

[144] Of course these qualifications do not rule out that elite groups would have been involved in this, a question that will be further explored in chapter five for the contexts and agency of Mycenaean art.

later disappear. A pantheon can also be seen in Minoan Crete (Moss 2005), but as this is based mostly on iconographic sources the relation to the Linear B names remains unclear. This is a question that will be briefly addressed in section 4.4.2. A substantial priesthood, both male and female, served these gods (*Documents*, 128-129), many of them organised in the sanctuaries discussed earlier. Deities could be closely associated with natural forces, as the epithet Earth-shaker on a Knossos tablet makes clear (*Documents*, 309), and some of these forces may possibly have been worshipped directly as the title 'priestess of the winds' indicates (*Documents*, 307).

Neither the tablets nor art allow for precise interpretations about Mycenaean conceptions of the cosmos and cosmogony. For Minoan Crete at least some archaeoastronomical work suggests that a sophisticated lunisolar calendar was used to keep time (Henriksson & Blomberg 2011), but much more work is needed in this regard.[145] There is no recording of astronomical phenomena in the Linear B tablets, making it impossible to know whether astronomical knowledge in the Aegean was as developed as it was in Mesopotamia (Watson & Horowitz 2011). It is possible to note, however, the geographical ordering of the regional kingdom of Messenia by the Linear B scribes (Bennet 1995, 1999). This can be seen as a basic example of the state creating 'legibility' by simplifying reality into a clear theoretical framework (cf. *Myths*, 94). The creation of geographical order through textual recording of lists of toponyms can also be seen in the contemporary Near East. This includes not only the conception of the boundaries of kingdoms (Liverani 1990, 89-90), but also the description of the trip of an Egyptian emissary to the Aegean (Cline & Stannish 2011). Yet it is not known whether the more complex forms of knowledge that can be inferred for the Near Eastern scribes can be held to have been present in the Bronze Age Aegean as well.[146]

Writing was just one of the 'control mechanisms' of the Bronze Age states exiting in an area stretching from the Aegean to the Indus, alongside seals and weighing systems (Rahmstorf 2012, 312-316). Seals have already been discussed for economic relations, so here the focus will lie on mensuration. The use of weighing systems in socio-economic systems involves two interrelated tasks: a) the determination of the weight of a material or object, and b) ascertaining the value of the material or object within specific exchange relations (Michailidou 2005, 15). As such, the weighing *koine* discussed earlier can be grasped as part of a 'commodity nexus' that developed in the eastern Mediterranean, Near East, and the Indus Valley (Renfrew 2006, 2012). In this nexus measure and value worked together to make possible the exchange of materials and objects as commodities (Renfrew 2012, fig. 12.1, p. 254). It is important to stress the role of metallurgy in the development of these weighing systems, as they allowed for the accounting not only of metal, but also of semiprecious stones and material for pigments (Rahmstorf 2010, 95).[147]

One great qualification in all of this should be made. As discussed for the element of economic relations, there was no all-purpose money such as coinage present in the Bronze Age Aegean. With the development of coinage in Archaic-Classical Greece, the specifics of the commodity nexus changed as well. Coins as indices of standardised units of value created important changes in the

[145] It is likely that long-lived, symbolically significant sites like Knossos were conceived of as cosmologically significant (Soles 2001), and may well have been important for astronomical observations. Another question concerns the long-term use of certain iconographic motifs and their possible relation to cosmological ideas (Goodison 1989).

[146] One contentious issue for the Bronze Age Near East remains the notion that writing made possible new modes of thinking, as argued by Goody (1977) in his 'literacy thesis'. Particularly relevant for the present discussion is his idea that the abundant use of lists in Near Eastern texts led to a different mode of classification than was possible in orally-based communication (Goody 1977, 105). This distinction between oral and written has since been nuanced, but nevertheless the scribal lists are still held to be structurally different from classifications based on oral representation only (Watson & Horowitz 2011, 26-30). Something similar could be present in the Linear A and B scripts, although less research has been done along these lines.

[147] The connection between metallurgy and value systems was also developed in another way for the gold objects in the 5th millennium BC burials of Varna in Bulgaria (Renfrew 1986b). This particular issue will be addressed in section 5.3.

(philosophical) conception of objects and materials, which can now be tied to abstract and universal principles of value (Seaford 2004). This was not the case in the Bronze Age. Even if certain metals could have money purposes, as with silver in Mesopotamia (Moorey 1999a, 137-138), it was not as an all-purpose money. The combination of material and money-sign (stamped by the state) was lacking. Furthermore, metals were convertible in more than one sense, being able to be shaped in many different kinds of forms including art objects (cf. Sherratt 2000, 83). Hence the qualities of materials and objects in the Bronze Age would be convertible in the sense of being exchanged with another material or object, or in the sense of being physically transformed into something else through the process of craft-work. Yet these qualities would not be transferable to an abstract, universal measure of value represented through coinage. This makes it unlikely that a theoretical distinction between nature and culture was made during the Bronze Age, nor earlier at the onset of the Neolithic (cf. Trigger 2006, 465-466).[148]

The tenth and final element of Mycenaean early civilisation to be discussed here is that of feasting and the cycle of public festivals. Aegean prehistoric archaeology has made much use of models of feasting derived from anthropology, as can be seen in two recent collections of papers (Hitchcock et al. 2008; Wright 2004c). Feasting activities can already be observed for the Neolithic (Halstead & Isaakidou 2011b), but in the Bronze Age there is the impact of state formation on feasting practices. One of the changes induced by this development would be the greater focus on the 'diacritical' aspect of feasting, that is the highlighting of status distinctions in the way such activities were carried out (Bendall 2004, Haggis 2007).[149] Another change would be the development of a calendar of religious public festivals tied to the state, as can be tentatively and partially reconstructed from the Linear B record (Younger 2007). This does not mean that feasting and public ritual should be seen as identical (cf. Wright 2004d, 46), and more private feasting events would have continued alongside the public events.[150]

Instead the evidence points to the close relation between cycles of festivals and feasting and the state in the Linear B tablets, for which good parallels exist in similar societies (Palaima 2012, 350-351). A good example of this relation can be seen in Pylos tablet Un718, which lists the contribution of various state officials and corporate bodies to a ceremony in honour of Poseidon (*Documents*, 282-284). The relation of this tablet to art will be discussed in section 5.2.2. Such festivals would involve sacrifices, often followed by the consumption of the resulting meat in festive contexts. Scientific analysis of bone remains has made clear that burnt animal sacrifices of cattle (Cosmopoulos & Ruscillo 2014; Isaakidou et al. 2002), and of pigs as well (Hamilakis & Konsolaki 2004) did take place in the Mycenaean world. The role of cattle in particular has been emphasised

[148] A famous argument put forward by the Frankforts contrasted the mythopoeic thought of the Bronze Age Near East with the later development of Greek philosophies of nature, contrasting them as a personalized or I-thou conception of nature to a later impersonal I-it relation (Frankfort & Frankfort 1946). They did not argue that people in the Bronze Age Near East could not think logically, but rather that they did not care to do so in theoretically significant ways. This view clashes with the level of development of weighing systems discussed here, as well as with the use of geometrical forms in Mycenaean iconography that will be discussed in section 4.2.2. Both imply a significant role of logical reasoning. Perhaps a better way to rephrase this argument is that in the Bronze Age there was no conception of 'I' and 'it' as separate entities. Only with the abstract, universal measure of coined all-purpose money could conceptions of individualism and discrete elements of matter be formulated (cf. Seaford 2004, 292-317).

[149] Much of the anthropological work on feasting focuses on its role in fostering social inequality (Hayden 2001). This is a somewhat one-sided view, as the classic study of carnival in Medieval and Early Modern Europe by Bakhtin (1984) showed that festivals can have a very serious counter-hierarchical dimension. Parallels to this are not very conspicuous in Mycenaean art, but some Minoan scenes like the miniature wall-paintings of crowds in ritual at Knossos (*Aegean Painting*, plates 22-23) and the Harvester Vase (Koehl 2006, plate 12) may be more amenable to such a perspective.

[150] As noted in Bendall (2004), feasting would have taken place in different architectural contexts with different levels of exclusivity, as also indicated by the finds in these contexts. A similar division between communal and more elite-based feasting activities can be recognised in Homer (Sherratt 2004, 304).

as part of a 'ritual economy'. This view entails that oxen or bulls could be used as payment in religious obligations, drawing the basic economic activity of stock-breeding into a palatial orbit through ritual activities and obligations (McInerney 2010, 65-67; Nikoloudis 2008b).

Linguistic aspects furthermore point to a distributional aspect of such sacrificial feasting events (Nikoloudis 2008b, 378),[151] perhaps even connected to a broader notion that certain palatial officials were seen as 'nourishers' (Palaima 2012, 349). The amounts of meat inferred from faunal remains do indeed suggest that large numbers of people participated in such events (Weilhartner 2008, 412-413). One element to be developed further in this is the role of sanctuaries as corporate bodies in this 'ritual economy', which is related to earlier models of the 'sacred economy' (Bintliff 1977b, 155-164). As noted earlier, the sanctuaries could operate to some degree as corporate bodies in their own right, but their degree of autonomy is uncertain. Some sanctuaries were clearly located in palatial centres like the Cult Centre at Mycenae (Albers 2004), while others were located in peripheral areas like Ayios Konstantinos on Methana (Konsolaki-Yannopoulou 2004). More information is needed on the development of sanctuaries as institutions in their own right alongside feasting in the development of the Mycenaean state.

3.4.3: Interpreting Mycenaean early civilisation in its *longue durée* context

The aim of this section is to relate the ten elements of Mycenaean early civilisation discussed in the previous section to the overall framework of the *longue durée* of Aegean prehistory. The first task is to define what is meant by the *longue durée* in more precise terms. As noted in section 3.2, certain features of the Minoan and Mycenaean palaces can already be recognised in the Late and Final Neolithic periods while other features only appear later. Table 3.2 below shows the different starting-points for each of the ten elements of Mycenaean early civilisation discussed in the previous section. The establishment of each of the starting-points of these elements is based on the introduction point of their basic qualitative characteristics, only to be elaborated later. This will be discussed in more detail for each of the elements below. It is important to emphasise that this table is based on a subtle interplay of historical developments, involving not only different temporalities but also different geographical scales. Its purpose is not to give an *Annaliste* overview of developments in the Aegean as a whole, but rather to grasp the Mycenaean *conjoncture* as it intersected with previous developments in the area and with other contemporary early civilisations.

[151] Weilhartner (2008, 421-422) has pointed out the possibility that such sacrificial feasting my have been the primary way through which meat was distributed at a communal level, based on analogies with the Archaic-Classical periods. A strong ethic of distribution in relation to ritual sacrifices of animals can also be recognised in Homer (Seaford 2004, 48-67). Sherratt (2004, 309-310) notes that even if the Homeric and Linear B terminology is not identical, a focus on distribution of portions of meat can nevertheless be recognised in the latter.

Initial development	Later elaboration in the Mycenaean palaces
Neolithic	
agricultural means production	large-scale polyculture
feasting	ritual calendar, diacritical
Early Bronze Age (EH I-II)	
economic relations	embedded within palatial framework
long-distance exchange	larger-scale in number/range goods
Shaft Grave period (MH III – LH I)	
warrior culture	state-organised forces, infrastructure
class and inequality	embedded within palatial framework
artistic representation	large-scale monumental art
Mycenaean palatial period (LH IIIA-B)	
urbanism	none, coterminous with rise palaces
state	none, coterminous with rise palaces
specialised knowledge	none, coterminous with rise palaces

Table 3.2: Starting-points of each of the ten elements of Mycenaean early civilisation.

The first development to be considered entails the introduction of the elements of the agricultural means of production and feasting in the Neolithic. This is not the place to give an overview of developments in the Neolithic, instead the focus lies on discerning the basic parameters of these two elements. For agriculture it was noted in the previous section that apart from the presence of cereals and sheep and goats, there are also some indications that traction was already present in the Neolithic sites of Kouphovouno and Knossos. The most likely pattern of exploitation here would have been a combination of animal husbandry and intensive horticulture. Yet in its basic elements this formed the basis for the later extensification of cereal cultivation in Bronze Age political economies, there supplemented by vine and olive cultivation. This pattern can be seen as an elaboration rather than as an intrinsic, qualitative change from the Neolithic. Much the same can be said for the feasting activity that can be discerned especially well in Crete and northern Greece. However, the Neolithic deposits that can be linked with feasting activities are different from those of the Mycenaean palaces. This can be seen especially well for the faunal remains, in that in the Neolithic such deposits are not indicative of the ritual sacrifice that can be observed for the Late Bronze Age palaces (Isaakidou & Halstead 2011b).

Significantly, it has been argued that such feasting activity was closely connected to agriculture, since the demands of agricultural work would have required some degree of solidarity between sub-groupings (Halstead 2006, 26-31). This brings up the question of social organisation. Much work has been done on investigating the relation between community and household in the Neolithic in different areas of the Aegean. A very general scheme has been proposed of the following phases of the development of households (Tomkins 2010, 36-42):

4. The 'submerged household' (7000 – 5500 BC), in the sense that they were subverted under an over-arching communal organisation.
5. The 'emergent household' (5500 – 3500 BC), during which it becomes possible to recognise architectural and other markers of (extended family) households. At the same time it is still possible to recognise strong forms of communal organisation.
6. The 'modular household' (3600/3500 – 3100 BC), with households becoming more sharply defined as economic and social units, including in contacts outside the community.

Of course this is a very general, Aegean-wide model of development. Yet similar trends have been recognised by Halstead (2006, 13) for Thessaly in particular, even if here it is often possible to observe counter-developments. Although the southern Mainland is less well-known for the Neolithic, in the future the full publication of sites like Kouphovouno should change this situation. The implication of these Neolithic patterns in agriculture and feasting is that they provide the basis for 'transegalitarian' social forms (Wright 2004a), and thereby ultimately for the palaces that take these basic patterns and transform them into surplus economies and cycles of ritual festivals. Yet it would be incorrect to assume that the basic features of the Late Bronze Age can already be observed here. This can be readily grasped when considering the next set of developments in the Early Bronze Age, which involve the two elements of economic relations and long-distance exchange. Of course there were economic relations already in the Neolithic, but the key point is that these underwent a qualitative change in the Early Bronze Age. That is, they were intrinsically different rather than constituting an elaboration of the Neolithic pattern. Furthermore, these specific developments were part of changes at a much broader geographical scale:

"One could argue that balance weights, tin bronze, the administrative use of seals and some specific types of elite jewellery and precious materials distribute rather similarly in the vast area between the Aegean and northwestern India in the third millennium. This geographical area was the home of the early advanced cultures in Egypt, Syro-Mesopotamia and Pakistan/northwestern India as well as of many urban or protourban cultures in the regions between or at the peripheries. Through the spread of similar economic strategies (sealing practice, metrology, advanced metallurgy with various complex techniques such as alloying, cupellation and granulation) regions at the periphery became transformed." (Rahmstorf 2010, 95)

Even if it should be acknowledged that regional variations could be observed, the changes in the 3rd millennium BC are very clear. The reason that such developments can be seen in such a widespread area may also have a geological reason. The so-called 'Eurasian metallogenic belt' that extends between the Alps and Pamirs has all the metal sources (copper, tin, silver, gold) required for making these kinds of development possible (Wengrow 2011, 139). Such similarities do not imply the existence of an over-arching 'world-system', rather it is possible to discern a set of overlapping 'social fields' (Kohl 2008, 2011). One example of this can be seen in the shared characteristics of the secondary states of the Bactria-Margiana Archaeological Complex (BMAC) and Indus Valley that emerged in the second half of the 3rd millennium BC (Kohl 2007, 214-225). This is clearly a very different world from the Mediterranean context of the Aegean. Reference should also be made to the expansion of the so-called Circumpontic Metallurgical Province (CMP) in the 3rd millennium BC that included at least some part of the northern Aegean (Chernykh 1991, figs. 57-59, pp. 154-155; Nakou 1997). From this period onward the Aegean became part of a broader Bronze Age social field that expanded considerably in the Late Bronze Age, both in the eastern Mediterranean (Broodbank 2013, 373-383) and beyond it (Chernykh 2011, 67-68).

Returning to the specific developments on mainland Greece, developments can be seen in the number of sites and architectural elaboration in them, especially with the fortifications and the larger rectangular corridor houses of the EH IIB period (Pullen 2008, 30-32). For the present analysis the first thing to note is that recently spool-shaped objects from a variety of sites from EH I onwards have been interpreted to have formed part of a weighing system (Rahmstorf 2003, 294-295). This system has furthermore been connected with the need to weigh small amounts of metals (Rahmstorf 2003, 297). The author also links this with the sealing practices that emerged in EH, but this tool may have emerged rather distinctly from *pintadera* textile stamps (Younger 1995a, 331-333).[152] Seals have been found at a wide variety of sites in the EH II period, but their use can be best understood for EH IIB site of Lerna. In the corridor house at this site evidence for use of as much as seventy different seals has been found, indicating the presence of a basic administrative system (Pullen 2008, 34-35). Therefore, in a very basic sense we can see here the systems of weighing and administration that would be elaborated in the LH III palaces. Even if the collapse at the end of EH IIB rules out a direct historical connection, in their basic sense the elements of economic relations and long-distance exchange can be recognised here.[153]

The next set of the three elements of a warrior culture, class distinctions in burial, and artistic representation intersect in a spectacular way in the MH III – LH I Shaft Graves at Mycenae, even if these developments can be seen in other parts of the mainland as well. Furthermore, in some ways it was also prefigured by developments at the site of Kolonna on Aegina island in the Saronic Gulf.[154] Nevertheless, the Shaft Graves are particularly instructive as an exemplary case of the development of a specifically Mycenaean pattern in warfare, class and inequality, and art. The last aspect of art will be more fully discussed in the two following chapters. It is important to note here that the stelae and portable art objects are the first exemplars of the distinct Mycenaean style in combination with Cretan influences (Blakolmer 2010a), which would later be elaborated on the walls of the palaces. Similarly, the discussion of the element of military organisation in the previous section already outlined the trajectory from the initial development of a warrior culture, as it can be seen in the Shaft Graves to the fortifications and armies of the Mycenaean palaces. It is the element of class and inequality that will be investigated in more detail here, through the evidence from burials.

Antecedents for social distinctions in burials can be seen in EH II Nidri at the island of Levkas in the Ionian Sea (Kilian-Dirlmeier 2005), and also at the site of Kolonna mentioned earlier. Yet the Shaft Graves are distinct in marking the start of a distinctly Mycenaean pattern in burial on the mainland. Recent restudy of the original documentation and scientific analysis of the bone remains of Grave Circle A (Nafplioti 2009; Papazoglou et al. 2009, 2010) have led to a new analysis of the development of social stratification at Mycenae (Dickinson et al. 2012).[155] It is very useful for the discussion here to give a short overview of this analysis, based on Dickinson et al. (2012, 21-26):

[152] In the Near East seals seem to have had their origin in non-administrative uses as well (Duistermaat 2012), even if these are distinct from the *pintadera* tradition of south-eastern Europe.

[153] More uncertain is the role of specialised knowledge, as there are some limited indications for a rudimentary grasp of a writing system on a sealing from Early Cycladic II Kea (Younger 2010, 330). It is also true that weighing systems and administration were basic to specialised knowledge in the Bronze Age Aegean. Yet there are too many unknowns about the mainland in the EH period, in particular with regard to religious ideas, and the evidence is too limited to recognise here the rudiments of the element of specialised knowledge of the later Mycenaean palaces.

[154] At this site what was termed a 'Large Building Complex' was constructed at the start of the Middle Bronze Age together with fortification works, and a shaft grave as well as pottery and other indications for trade with the outside world were also found here (Gauss & Smetana 2010).

[155] As a reminder the Mycenae Shaft Graves consist of two circles. These are circles A and B that were named in order of discovery, but with circle B preceding circle A in a chronological sense. Each of these circles consists of a number of shaft burials, each of which contains multiple inhumations. Although the rethink of the social implications of the Shaft Graves was stimulated by the new analysis of Grave Circle A, it also incorporates new studies of the material of Grave Circle B (Bouwman et al. 2008; Bouwman et al. 2009).

1. Considerable heterogeneity can be observed in both grave circles, including between burials and in the spatial orientation of specific inhumations (insofar as these can be determined). Strontium isotope analysis suggests that some of the individuals buried here may have migrated from outside the area around Mycenae.[156] Women seem also to have been more prominently present than previously thought, based on the reanalysis of the spatial layout of the grave goods, even if they remain a minority.
2. Based on the previous point, the grave circles are interpreted as the burial locations of a faction, much as defined by Wright (2004a, 70-73). This faction would be composed of multiple families entering into (marital) alliances, which based on the strontium isotope analysis likely extended to areas outside the Argive plain. As such this social structure is incompatible with that of contemporary Near Eastern kingship, and more attention should be given to notions of 'collective leadership'.
3. It is also possible to reconstruct in broad outlines the dynamics of this faction, from the initial grouping of graves in Circle B to the later increase in high-value grave goods (mostly styled as Cretan craft-work) and the articulation of themes of warfare and hunting. With the advent of Grave Circle A greater distinctions within the faction also become visible.

This reconstruction is very insightful and has important ramifications for the understanding of later Mycenaean early civilisation. However, a qualification is made here with regard to the use of the term 'faction', as it stresses charismatic leadership and places less emphasis on the structuring role of kinship (Wright 2004a, 71). It is rather in the intersection of kinship and emerging elites that phenomena such as exchange networks of high-value objects and their conspicuous display in funerary contexts (Voutsaki 2010a, 93-97) should be understood. It was Kirchhoff (1955) who made the important point that certain kinship units, which he termed 'conical clans', could be vehicles for the formation of classes and inequality in state societies. The role of such clans can be seen in a variety of cases, including in the emergence of larger centres and polities in Europe from the Early Iron Age onwards (Bintliff, in press).[157] Particularly enlightening is an analysis of Roman clanship, which proved durable in the face of state formation and could reassert itself in a destabilising way (Terrenato 2010, 243). This reinforces the point that even with the transition from a kinship-ordered society to a state, the properties of the former could still constrain the specific form that this state could take (cf. Voutsaki 2010a, 104-105).

Of course the developments of the distinctions in burial, alongside a new style of artistic expression and a warrior culture, cannot be understood separately from the elements of the agricultural means of production and feasting. Furthermore, the articulation of distinctions in the funerary record itself depended upon the development of the 'modular household' during the final stages of the Neolithic. The early development of the Mycenaean polities clearly shows how these different elements worked together in the processes of urbanisation and state formation (Wright 2008, 244-250). The weighing and sealing systems crucial for administration and long-distance exchange also returned, now supplemented by the Linear B writing system. As noted at the start of this section, the aim here is not to provide a new reconstruction of Mycenaean early civilisation but rather to delineate its place in the *longue durée* of Aegean prehistory. Nevertheless, some insights can be gained into the

[156] Notably the very rich burial M of a female in Grave III of Circle A, which suggested an elevated position perhaps with ritual connotations, seems on the basis of the strontium isotope analysis to have come from outside the surroundings of Mycenae (Dickinson et al. 2012, 14).

[157] Reference can be made here also to the model developed by Kristiansen (1999, 394-399), who looked at the relation between kinship and socio-political systems in 2nd millennium BC temperate Europe. The warrior culture that developed in the Shaft Grave era is distinct from this pattern, however, on account of the rich female burials that can now be recognised. The sharp dichotomy between 'agrarian' and 'warrior' societies (Kristiansen 1999, fig. 217, p. 398) cannot be seen in the Aegean prehistoric record.

structural properties of the palatial states through this, both for their internal organisation and for external relations. To start with the former, one interesting model that explored the part/whole relation of conical clans to the state was developed by Morris (1986) for the region of Messenia. The distinctive point made by her was that the palatial state as it eventually coalesced around Pylos depended upon a complex interplay of mechanisms like the distribution of prestige goods and feasting to maintain relations between paramount and locally-based elites (Morris 1986, 183-185).

This means that alongside the bureaucratic-administrative apparatus of the state a parallel structure of social power existed, which would be ultimately rooted in the patron-client relations of conical clans. This can be increasingly recognised in the analysis of personal names in Linear B, evidence of feasting activities, and of course the burial evidence, as discussed in the previous section. It is also interesting to consider the role of the relations between emerging locally-based elites, and eventually a paramount one, in the formation of the settlement pattern of Messenia (Morris 1986, 64-71). Such socio-structural factors may well have played an important role in the particular patterns that can be seen in the development of Mycenaean settlement on the mainland. Rather than an emerging network of small city-states or *Dorfstaaten*, trajectories of settlement expansion here followed a strong core-periphery pattern that could be closely connected to state expansion, as discussed in the previous section. Population growth as a secular phenomenon would then have been channelled to some degree through the expansion of conical clans, generating a particular settlement trajectory in which urbanism would eventually emerge as well.[158] This can obviously only be a tentative model as much work remains to be done on Mycenaean settlement patterns, but the role of conical clans and the emergent hierarchical relations within them is a factor to consider.

It should also be stressed that the Mycenaean states were very much systems in development, as can be seen for Messenia (Morris 1986, 190-191). As such there would have been some potential for the dissolution of the structure of social power in the palatial system back into the different locally-based elites. Particular note in this regard can also be made of the dependence, and hence vulnerability, on the large numbers of oxen managed directly by the palatial administration or benefiting from its economics of scale. As discussed in the previous section these oxen were very important both for the creation of cereal surpluses and in the 'sacred economy' of feasting and the cycle of public festivals. Without them the palatial system as it existed would scarcely be able to function as it did.[159] The patterns of cattle-use after the collapse of the palaces were quite different (McInerney 2010, 68-73), showing that it was either not possible or not desirable to continue the Bronze Age pattern at a smaller scale. Another 'hidden vulnerability' can be seen in the external relations of the Mycenaean Aegean. As discussed for the element of long-distance exchange in the previous section, patterns in the exchange of metals in the late 13th century BC seem to change in such a way that it undermined palatial control over this key resource. This development can be situated as part of the broader trend of the break-up and reordering of the existing, palace-focused eastern Mediterranean exchange networks in this period (Broodbank 2013, 460-472).

[158] Crete followed a distinct trajectory to the formation of urbanism, as can be seen in the coalescing of a town around the palace of Phaistos in the Mesara ((Watrous & Hadzi-Vallianou 2004, 253-256). It would be interesting to consider whether the different patterns of settlement trajectories on Crete could be related to different social structures, which would need to take into account new work on kinship patterns (Driessen 2012, in press; Legarra-Herrero 2012; Relaki 2012). The impact of social structures on settlement trajectories can also be seen later in the Archaic-Classical period for the different patterns of development in regions with different forms of organisation (Bintliff 1997, 30).

[159] Modelling of agricultural systems in Bronze Age northern Mesopotamia, although a different area also dependent upon rain-fed cereal staples, have shown the impact disruptions of the availability of teams of oxen for ploughing could have (Wilkinson et al. 2007, 63-66). Dropping below a critical threshold this would involve the loss of more than 50% of the population, or, if they shifted to hoe-based cultivation, the disappearance of the means to generate significant surpluses of cereals. As such, such this particular scenario seems to be one of the key dangers for the political economies of the Bronze Age early civilisations dependent upon cereal surpluses.

If we return then to the nexus of weighing, administration, and metallurgy, discussed earlier in this section, it is clear that it was precisely this nexus that disappeared in this form after the end of the Bronze Age. Wengrow (2011, 136-137) had argued for two types of 'internal transactional systems' for metallurgy in the Bronze Age for the area between the Aegean and the Indus. The first would involve the 'sacrificial' deposition of large quantities of metals, the second their 'archival' circulation in administrative systems. For the Mycenaean case a shift from 'sacrificial' (if mostly in burial contexts, less so in hoards) to 'archival' contexts of metallurgy can be seen, even if not fully completed. It was the convertibility of metals in long-distance exchange networks that allowed for the spread of similar kinds of systems over a large geographical area (Wengrow 2011, 141-142). In the 1st millennium BC this changed, based on the introduction of large-scale iron-working and later also coinage. The wider availability of iron ores in particular broke up the older networks focused on the comparatively rarer sources of copper and tin (Kohl 2007, 252-253). In the resulting reorientation of long-distance exchange, the old nexus of weighing, administration, and metallurgy disappeared. What eventually replaced it was a different pattern of exchange relations and state formation in the Mediterranean (Broodbank 2013, 506-584).

How then is the relative short-lived (about 200 years) *conjoncture* of the Mycenaean palaces to be understood? As should be clear from the discussion in this section, it is one that had deep roots in the *longue durée* of Aegean prehistory. This can be seen not only for the elements of agriculture and feasting, but also in the weighing and sealing systems that formed the basis for administration in the later palaces. Furthermore, as shown in the previous section all ten elements of early civilisations were present in some form of elaboration in the Mycenaean case. It is also possible to recognise the nexus of urbanism, the state, and civilisation for the LH III Greek mainland, despite the smaller scale of urban foci compared to Crete. This goes against the proposal that the Mycenaean palatial centres were akin to 'hillforts' situated at strategic locations of long-distance exchange routes (Sherratt 2001a). Instead the Mycenaean palatial *conjoncture* can be seen as a specific combination of elements that were already present in a basic form, reflecting an internal growth trajectory that was further facilitated through gaining dominance over Crete. If the palaces had not collapsed and had the macro-regional exchange contexts and metal-working not radically changed, there is also no reason to assume that Mycenaean early civilisation could not have developed further.