The collapse of palatial society in LBA Greece and the postpalatial period

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Abstract

This thesis offers a contextualised approach to the collapse of the Mycenaean palace societies of mainland Greece, c.1200BC, and aspects of Mycenaean society in the postpalatial (LHIIIC) period. It seeks to provide a fuller understanding of how these palace societies collapsed by considering them in the context of general theories of collapse, by examining and critiquing specific theories developed to account for the Mycenaean collapse, and by identifying and using as analogues social processes at work in other historical societies that experienced collapse, namely the Hittites, the Western Roman Empire and the Maya. These processes were affected by a range of other factors, which may or may not have contributed to collapse at any given time, and which depended on individual and group motivations, contemporary conditions, and unique socio-historical circumstances. Some collapse theories, in particular those that rely on migration, are dismissed, as is the possibility of creating a generalised theory of collapse. In this way, while no single novel theory of Mycenaean collapse is developed, it is hoped that a more convincing picture of collapse, as a process grounded in active social relationships, is given.

It is argued that collapse affected palatial areas and occurred over a period of time, but that areas without palace societies did not collapse, although they were affected by changing circumstances. In this context, settlement and mobility, as well as aspects of rulership and social structure in the postpalatial period are explored, and a main concern is to emphasise the differing nature of the evidence from areas that had been palatial and areas that had not been. This provides a more balanced view of postpalatial Greece, highlighting aspects of continuity from non-palatial areas as well as areas that had had palaces, and modifying a view that continuities should be sought merely from the archaeologically more prominent palatial Mycenaean society. It is hoped that a more nuanced view is offered of how continuities from palatial era society should be considered, and that the study may further throw some light on aspects of Mycenaean society before the collapse.

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[1] Although I have made use of preliminary copies, these papers have now been published in the latest volume of Aegaeum and are thus referred to by their publication date (2007).

The Sir Richard Stapley Foundation generously provided me with a small grant early on in my studies, for which I thank them.

Abbreviations

AA	Archäologischer Anzeiger
AEA	Aegean Archaeology
AmAnt	American Antiquity
AmAnth	American Anthropologist
AJA	American Journal of Archaeology
AR	Archaeological Reports
ARA	Annual Review of Anthropology
AS	Anatolian Studies
BCH	Bulletin de correspondance hellénique
BIAL	Bulletin of the Institute of Archaeology
BICS	Bulletin of the Institute of Classical Studies
BSA	Annual of the British School at Athens
CA	Current Anthropology
CQ	The Classical Quarterly, New Series
CR	Classical Review, New Series
EHR	The English Historical Review
G&R	Greece & Rome, 2nd series
IJNA	The International Journal of Nautical Archaeology
JAS	Journal of Archaeological Science
JFA	Journal of Field Archaeology
JHS	Journal of Hellenic Studies
JMA	Journal of Mediterranean Archaeology
JNES	Journal of Near Eastern Studies
JRZM	Jahrbuch des Römisch-germanischen Zentralmuseums, Mainz
JWP	Journal of World Prehistory
MAA	Mediterranean Archaeology and Archaeometry
OJA	Oxford Journal of Archaeology
OpAth	Opuscula Atheniensia
PBSR	Papers of the British School at Rome
PCPS	Proceedings of the Cambridge Philological Society
PPS	Proceedings of the Prehistoric Society
SMEA	Studi Micenei ed Egeo-Anatolici
SO	Symbolae Osloenses
WA	World Archaeology

EIA	Early Iron Age
G	Geometric
LBA	Late Bronze Age
LH	Late Helladic
MH	Middle Helladic
PG	Protogeometric

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Introduction

This thesis deals with the destruction and disappearance of the palaces and palace societies of Late Bronze Age or Mycenaean Greece c.1200BC and aspects of continuity and change in the subsequent Postpalatial period of the twelfth and eleventh centuries (LHIIIC). For reasons set out below, it is primarily concerned with mainland Greece and the islands but not with Crete, which deserves separate treatment.

Much scholarly attention has been devoted to understanding the precise nature of the events and processes at work in this period and it may rightly be wondered why another study is necessary. In fact there are several reasons for attempting this. The archaeological evidence itself continues to increase, providing more data and allowing more precise interpretations, and existing data continue to be refined and interpreted. New sites or further work at known sites can radically alter our understanding of the period, as has been proved at Tiryns, Kanakia and Mitrou. Theoretical approaches also change. Migration theory is now largely discredited in Aegean archaeology, as is the status of later Greek myths as historical evidence for the LBA and postpalatial period. The simple equation of pots and peoples has been rejected and the more complex relationships of people and groups with, and their active use and manipulation of, material culture are now admitted. Changes in the way collapse is understood as a political and social process, reflected in material culture, within diverse and dynamic living societies have forced a move away

from monolithic and simplistic theories of collapse. People and groups are more often seen as active social participants with diverse motivations rather than passive victims and instances of collapse can often be seen as periods of social reorganisation involving the formation of new groups and the active formation of new identities. These changes suggest that there is scope for further examination of this period.

This thesis was directly inspired by two things. The first was my introduction to Mycenaean Greece during the 27th British School at Athens Undergraduate Summer School, and our visits to Thebes, Orchomenos, Gla, Mycenae, Tiryns and Pylos. What had happened to cause the destruction of these sites and what happened to the society that built them? How were they connected to the more familiar classical Greece I had studied and the Greek myths I had grown up with? The second was my reading of a paper by Bryan Ward-Perkins (1997): 'Continuitists, catastrophists and the towns of Post-Roman North Italy'. This paper explored the difficulty in evaluating continuity or discontinuity at urban sites and showed how a variety of very different interpretations could be constructed. These often depended on the approach taken to the evidence whether archaeological, textual or a combination and where the emphasis was placed, and the nationality and intellectual tradition as well as the theoretical position of the scholar. It was startling to see how such different historical reconstructions could be created and this had obvious implications for interpreting and understanding the collapse of Mycenaean Greece and what followed it, already burdened by a wealth of competing theories. The combination of this new realisation of the fragility and malleability of

historical interpretation, together with a wish to understand how the palaces of Mycenaean Greece had met their end and what happened afterwards, led to this research.

A constant emphasis in this thesis, where analysis of the Greek material itself or theories based upon it is attempted, is the difference between palatial and non-palatial areas. Of course the term postpalatial has a chronological and social meaning, but it is applied to areas that never were palatial and in this way is misleading. Although there were interconnections between palatial and non-palatial areas, these never directly experienced the collapse of the palatial system and so the situation in these regions was different. While the notion of core and periphery has become popular in Aegean archaeology and some have begun to consider how these differences affected postpalatial 12th century Greece (e.g. Eder 2006), it is still common to find a basic assumption that even in non-palatial areas some aspects of 12th century culture should be traceable back to palatial forms. This is notable in the discussion of rulership and the origins of the *basileus* of later Greece. While culture, material and otherwise, is not bounded by political borders and non-palatial areas shared aspects of material and doubtless non-material culture with palatial areas, it is not necessary to suggest that supposedly peripheral regions should rely merely or simply on the emulation of their palatial neighbours. Their inhabitants should be credited with a more complex agenda suited to their local circumstances, making active use of culture as it suited them, and after the palaces collapsed they no-doubt went on doing this.

Something must be said about the approach taken in this thesis. In the first place, I do not seek to offer a completely novel or original theory of the Mycenaean collapse or to prove that one of the existing theories is correct and all the others are wrong. It is likely that arriving at the truth of what actually happened is an impossible task. Nor do I seek to exhaustively list, catalogue, describe and compare the material culture of LHIIIC Greece and this is not a traditional survey based thesis.[2] Rather, I hope to offer a balanced and objective approach to Late Mycenaean society and to critically analyse the major collapse theories placing them in the context of general collapse theory and recent developments in Mycenaean archaeology. I hope to be able to show why some theories have more validity than others, and that in many cases there are in fact serious problems with the evidence. I take a broad interdisciplinary approach that includes historiography, social archaeology, the archaeology and history of parts of the Near East, Mesoamerica and Europe, as well as discussion and interpretation of Mycenaean archaeology itself. It is hoped that by using these in combination a fuller understanding of the LBA Greece, the Mycenaean collapse, and the postpalatial period can be achieved.

Historical Analogy

This thesis will make use of historical analogy to suggest problems that may have faced the Mycenaean palace societies and contributed to their collapse. These are drawn from three areas: the Hittites, the Classic Maya and the Western Roman Empire. Something must be said about the applicability and relevance of such analogies. In the first place, these societies all experienced

[2] This approach has been very recently taken for LHIIIC Middle by Marina Thomatos (2006).

collapse and all have been well-studied both individually and in general works on collapse. Of primary importance is the level and range of literary and textual evidence available from all three societies, which allows a far greater insight into the processes at work within them, as well as specific events and problems that they encountered. Since the Homeric poems and evidence from Greek myth cannot be regarded as filling this gap, and in the absence of equivalent evidence from Mycenaean Greece itself, analogy is a better method for illustrating potential difficulties facing the palace societies.

Of the societies chosen here, two differ greatly in size and complexity from the Mycenaean palace societies, and only the Maya polities could offer an equivalence of scale, with independent, linked, and competing polities, on differing scales, within a zone of shared culture. Because of this, the Maya kingdoms perhaps offer the best direct parallels for the Mycenaean palace states in terms of how they may have interacted, although that is not to say that they collapsed for the same reasons. Nevertheless, these differences are unimportant here, since the features they are used to demonstrate are ones common to relationships between two central powers, central and local powers and within central powers themselves. The commonality of such features between societies makes the argument for the applicability of analogy stronger.

Although the cause of the Hittite collapse is as problematic as that of the Mycenaean palace states, it occurred nearby and at around the same time, although possibly for quite different reasons. The approach taken here is not concerned with explaining that collapse, but with using the evidence to

illustrate actual difficulties that existed in successfully maintaining the integrity and existence of a LBA kingdom. While the collapse of the Western Roman Empire happened much later, and in a very different setting with its own unique characteristics, it is the relationships between groups that is of interest. Through these relationships, illustrated by textual evidence and archaeology, the process of collapse and transformation can be observed as one in which people made active choices in response to specific phenomena.

Thus historical analogies are not used here to attempt to prove that the Mycenaean palace states collapsed for the same reasons as the Hittites, the Maya or the Western Roman Empire. The reasons for these collapses remain contentious, and it is not the purpose of this thesis to seek to explain them. Rather they are used to illustrate real and common problems faced by polities that collapsed, and which, although we cannot see them clearly, seem unlikely not to have affected the Mycenaean palace states. In all these cases, peoples, cultures and events may be historically specific and unique, but the similarity in processes, rooted as they are in quite basic human relationships and motivations, remain similar and make analogy a useful tool in fleshing out the late palatial period and the collapse of the Mycenaean palace states

Crete

Crete must be considered as somewhat different to the rest of Greece, since it had developed its own palatial culture much earlier which itself eventually seems to have influenced or been adopted as an influence in areas of Mycenaean Greece (Wardle 1994, 204-217; Rutter 2001, 145-146). This

palace system came to an end in uncertain circumstances (Rehak and Younger 2001, 440-441). It seems that, in circumstances accompanied by widespread destructions, Knossos became the single palace centre in LMII where previously various centres had existed and some suggest Mycenaean involvement in this, although other reasons are equally plausible (Rehak and Younger 2001, 440-441; Bennet 1990, 209). Mycenaean administrations using Linear B existed at Knossos and Chania in LMIII, although the dating of these is uncertain, with some placing the Knossos tablets earlier (LMIIIA1) and/or later (LMIIIA2-LMIIIB early), and the Chania tablets in LMIIIB. The final destruction of the palace at Knossos is thought by Popham to have occurred in early LMIIIA2, the standard interpretation, later in LMIIIA2, though others place it in early in LMIIIB (Hood 1978, 25, 243 n.14; Rehak and Younger 2001, 384 n.5, 441-444, 452). The Linear B at Chania belongs in LMIIIA2-LMIIIB, possibly outlasting Knossos as a palace centre (Rehak and Younger 2001, 451; Dickinson 1994, 76).

While this evidence does show a Mycenaean presence in Crete and the existence of polities that may have been independent or linked to mainland palaces, the continued presence of local Minoan traditions into the postpalatial period suggests that 'to term it 'Mycenaean' is incorrect' (Dickinson 1994, 76 and 2006b, 116). Since what happened on Crete c.1200 and in the twelfth century deserves more detailed treatment than can be offered here, it will not be a focus of this work.[3]

[3] Recent discussions include Dickinson 2006a; Wallace 2003; Rehak and Younger 2001, 458-464, 471-473; Hatzaki 2000; Nowicki 2001, 2000, 1998; Haggis 2001, 1993.

Plan of the thesis

Chapter 1 attempts a brief introduction to Mycenaean material culture, and to interpretations of Mycenaean society necessary to understand what collapsed, and to set in context the postpalatial society. A limited survey in order to clarify the extent and chronology of the collapse is offered. Chapter 2 reviews developments in general collapse theory as drawn from recent and major publications. It further examines recent discussion of specific examples of collapse to identify current trends in interpretation. Chapter 3 critically examines theories of the Mycenaean collapse, concentrating on major styles of interpretation and ending in a discussion of the present consensus. Chapter 4 uses recent discussions of the Hittite, Maya and Roman collapses and continuities to suggest possible analogies for processes at work in LBA Greece. Chapter 5 examines the evidence for migrations and population mobility in postpalatial Greece, discussing settlements and sites, and noting the contribution of survey. Chapter 6 deals with changes in rulership and social structure in the postpalatial period, emphasising distinctions between areas of Greece that had palaces and non-palatial regions. The conclusion attempts to draw together the preceding discussions.

1 Mycenaean Greece and the collapse

Introduction

This chapter has two aims. The first is to offer some context to the subsequent discussion of collapse theory and aspects of continuity and change that form the bulk of this thesis. This is both necessary and desirable, since notions of how and why collapses occur often proceed from conclusions of how societies operate. In order to do this an outline of Mycenaean Greece in the palatial period (c.1400-1200BC) will be offered. However, it would be misleading to suggest that scholars agree on all aspects of what exactly Mycenaean Greece was, and how it worked. In fact, there remain many significant areas of disagreement, ranging from the degree of centralisation and power of the 'palaces', the nature and extent of international trade and diplomacy, to whether the population at large, or just the rulers, were 'Greek'. These issues, where relevant, will also be dealt with in connection with particular collapse theories themselves (chapter 3). Initially then, some brief defining points based on Mycenaean material culture will be discussed. This will be followed by some comments on palaces and non-palatial regions and their interrelations. This allows a better assessment of collapse theories and a better understanding of the collapse itself.

The second aim of this chapter is to review the evidence for destructions and abandonments and their chronology and synchronicity, as well as to consider some of the problems of demography. Destructions occurred sporadically in

various phases, but it is the destructions and abandonments around the end of LHIIIB2, c.1200BC, which are identified as the physical indication of the collapse, and marked the end of palatial society in Greece. Many of the issues raised here will be discussed in more detail in subsequent chapters.

Mycenaean culture

The Mycenaean region is usually agreed to be more or less that of classical Greece, especially the southern and central mainland (Figure 5.1; Shelmerdine 2001a, 330 and Fig. 1; Mountjoy 1999, 13; Dickinson 2006a, 24-25 and Fig. 2.1), although this also reflects modern political issues and the history of research in the area. However, defining Mycenaean material culture is no easy matter since 'there is not a single feature that could be considered typical of Mycenaean material culture that is equally prevalent in every part of the Mycenaean region, except the decorated pottery, and even this has a much wider range in some regions than others' (Dickinson 2006b, 115; Mountjoy 1999, 15). Aside from the pottery, another common Mycenaean feature is the widespread use of chamber tombs and large tholoi 'for ruling families', although again there were regional differences (Mountjoy 1999, 822).

Some areas that had once been considered something less than Mycenaean, such as Phocis and Locris, produced their own decorated and plain Mycenaean pottery and had chamber-tomb cemeteries; they also used sealstones, and so should be considered Mycenaean (Dickinson 2006a, 24-25; Mountjoy 1999, 739-747). Other areas, such as inland Thessaly and Aitolo-Akarnania may have been more mixed, although that says nothing about the ethnicity of the

inhabants (Dickinson 2006a, 25). In Aitolo-Akarnania there was more imported Mycenaean pottery although many types were not present and many sites had no Mycenaean pottery (Mountjoy 1999, 798). In Thessaly there seems to be a more Mycenaean area in the south-eastern coastal area and south-eastern plain, where chamber-tombs and large tholoi are found, and these areas seem to have had the most contact with southern Greece (Mountjoy 1999, 822). Even so, it is perhaps not necessary to look for too much uniformity and standardisation. Cavanagh and Mee (1998, 77) note that although tholoi and chamber tombs become common in LHIIIA-B, 'pit and cist graves were still common' and 'if we examine regional preferences, we find that there is no consistency. The impression of uniformity is in fact a mirage.'

Terminology may imply a homogenous population of 'Mycenaeans' across Greece, but this is not necessarily the case (Davis and Bennet 1999, 113). As Dickinson (in Barber 1999, 139) has pointed out, 'Mycenaeans are not a *people*. They are just what we call a *culture*.' The spread of Mycenaean pottery style and burial forms does not require any change of population, and certainly need not indicate anything about language or ethnicity of those who used them. Further, while an early form of Greek was the written language of the Linear B tablets, it may not have been the only language spoken even at the sites where it was used. In the linguistically diverse Maya cultural zone, Southern Classic Maya became a prestige language used widely by scribes at many sites, even where it was not spoken (Coe 1999, 38). Thus, even these apparent similarities may mask potential diversity, and a more localised world could be envisaged. It is 'perfectly possible that Greek only became virtually

the exclusive language of the southern Aegean in the course of the Postpalatial Period and EIA, not only in Crete but elsewhere (as must also have happened in the Greek-speaking parts of Cyprus)' (Dickinson 2006a, 53).

Palaces, territories and non-palatial areas

A general division between palatial and non-palatial areas of Mycenaean Greece is commonly made, although this is undoubtedly an oversimplification of what may have been a far more complex situation and set of relationships between sites of differing power, reach and influence. While efforts have been made to create a political geography of Mycenaean Greece (e.g. Cherry and Page, in Renfrew and Bahn 1996, 196; Galaty and Parkinson 1999, 5 Figure 1.1), often inspired by the Homeric Catalogue of Ships, a category of evidence inadmissible in this context (Dickinson 1999b), or from the archaeology, it is unclear whether any clear or meaningful political boundaries could be reconstructed for Mycenaean Greece as a whole; to do so would also ignore the likelihood of a dynamic situation. Part of the problem lies in the understanding and definition of what palaces were, their relationship with both local and more distant territories, and with other major centres, as well as the relative status and organisation of different parts of Greece. Since this thesis makes use of the distinction between palatial and non-palatial areas as being of importance in understanding the changes around 1200 and after, the subject warrants discussion here.

A first point should be made about the term 'palace'. This has become the standard way of referring to the particular structures discussed below, generally

agreed to be the most significant central places of particular regions and communities in terms of their social and political prominence (Galaty and Parkinson 1999, 5). At least some of them seem to have been the seats of kingly figures, although central places in different regions undoubtedly differed in scale and importance, as well as in layout and design. To some degree, the term palace may be an unfortunate one, since even the most impressive sites are small, especially as seen in comparison to Cretan palaces and palace complexes of the Near East. It is at least clear that palaces had a variety of functions, including being a royal residence, administrative centre, and focal point for ritual and feasting, as well as centres for craft production and storage and a flow of goods in and out. One particular difficulty is in deciding whether smaller centres, which shared some of the functions of larger centres, should be termed palaces, a problem which to some degree is one created by the terminology, and where any boundary should be drawn. As will become clear, some sites are more easily defined as palaces, whereas others may be better termed local centres, although this differentiation should be considered as primarily one of scale and complexity.

Palaces can be defined by several criteria, but perhaps the most useful is the presence of a literate bureaucracy using Linear B, which certainly means Mycenae and Tiryns in the Argolid, Thebes in Boeotia, and Pylos in Messenia. As can be seen, there were relatively few of these major palace centres. However, inscribed sealings have also been found at Midea, indicating that it was an administrative centre of some kind, while uninscribed examples have come from the Menelaion, uniquely of a non-Linear B using centre (Dickinson

pers.comm.). Pottery painted with Linear B signs has been found at Mycenae, Tiryns, Midea, possibly the Menelaion, Eleusis, Thebes, Orchomenos, and Gla, but where this is imported it need not imply literacy at the site (Shelmerdine 2001, 357).

At least some of the major palaces, clearly Tiryns, Pylos and Mycenae, seem to have contained megaron units, which formed their architectural and ideological focus (Shelmerdine 2001a, 350; Kilian 1988b; Wright 2006, 25). These units tended to be large, and could be ashlar-faced; they were divided into a porch, vestibule and throne room with a large circular hearth in the centre, surrounded by four columns; at Pylos and Tiryns a throne was present in the middle of the right-hand wall, which in Mycenae no longer exists due to the collapse of part of the building; they had plastered, sometimes decorated floors; access was restricted to a doorway from the vestibule; there were two columns in the porches and the walls were decorated with frescoes (Rutter 2000a). Of those sites, the architectural arrangements of the citadel and palace complex at Tiryns, and in particular the labyrinthine route into the heart of the upper citadel where the megaron lay, may be the most impressive in terms of visual impact and complexity. Pylos appears somewhat small in comparison, although size is not necessarily a good indicator of power, and the city, and/or palace complex, may have appeared more impressive than the remains suggest, at least in comparison to other sites in the region.

At Thebes, where the modern city makes systematic excavation very difficult, the House of Kadmos was a major building, thought to be part of the palace; as

well, workshops and rooms containing Linear B indicate that a palace existed, but ceremonial rooms and the hypothetical megaron are not known, and the palace may have differed architecturally from the megaron type (Dakouri-Hild 2001, 105). Thebes may have had circuit walls of a non-cyclopean kind (Shelmerdine 2001, 350 and n.128; Iakovides 1999a, 199), and it seems that Pylos may have had a circuit wall and monumental gateway, but the linear feature identified is of uncertain date (Shelmerdine 2001a, 378). The citadels of Mycenae, Tiryns, Midea and Gla also made extensive use of impressive cyclopean building techniques in fortifications, and a network of roads and bridges has been identified around Mycenae (Loader 1998, 27). Athens had notable cyclopean style fortifications, but the Acropolis was so extensively reused that the existence of a palace there is not certain. Teikhos Dymaion and Krisa were also well fortified, although they have nothing resembling a megaron or palace complex, but fortifications are absent from the Menelaion, Dimini and Orchomenos (Dickinson 2006a, 25). It seems that impressive fortifications and building styles were not restricted to palaces, but equally that not all sites, even ones of importance, appear to have had such features. At all sites where significant building took place, the ability to mobilise and organise labour, as well as design and plan sometimes complex or large-scale projects, is indicated.

Orchomenos is a more difficult site to interpret, for while there is a very impressive tholos tomb, and the remains of fresco decoration, no megaron or palace complex is known, and no Linear B tablets have been found (Dickinson 1994, 78, 91). It is often suggested that the power at Orchomenos was of

similar status to rival palatial Thebes, and undertook the large and complex project of draining the Copais Basin to create new farmland, having the fortress of Gla constructed there to dominate the area and store the produce grown. At Gla, there is also no classic megaron unit, although it is also sometimes thought to have been a palatial site (Shelmerdine 2001a, 340). This citadel housed a number of impressive structures including a pillared hall and an 'L' shaped residential building with a megaron-like structure at the north-west corner (Iakovides 1983, 91-107). Unique examples of stucco work on the walls of many rooms sometimes includes relief decoration, and stucco fluted half-columns were also found attached to a wall in the east wing (Iakovides 1983, 101). All this, as well as the impressive walls, would seem to suggest a high status site.

Iakovides (1983, 107) thought this 'mansion' to be a rather impersonal barracks or communal residence, a specialised administrative headquarters, rather than a royal palace and the capital of a province. Linear B tablets, which could throw light on the relationship between Orchomenos and Gla, have not been found at either site, and were not certainly in use at either. This recalls the difficulty in defining palaces by too strict criteria, for it suggests that non-literate centres could nevertheless be powerful, although we should also remember that we may not have all the evidence and Linear B may well have been used, but just not found, at Orchomenos, and other sites. In this regard it should be noted that archaeology alone is not enough to recognise a palatial territory, such as Messenia and the parts of Boeotia linked to Thebes, and non-palatial and palatial territories do not look different in themselves. Based on

present evidence it is impossible to conclude definitively whether Gla was an independent centre or, as is more often thought, was attached to Orchomenos.

At Dimini in Thessaly, a building complex with two megarons, A and B, has recently been identified as a palace or administrative centre (see figure 6.11; Adrimi-Sismani 2006). Megaron A seems to have had a central hearth, and to have been fronted by a courtyard, and was flanked by storerooms and workshops, while Megaron B is somewhat different and appears to be associated with a shrine and altar. While the megarons seem comparable to those at major sites, particularly Megaron A, it seems there were no throne emplacements, and the 'palace' complex seems integrated into the town, rather than separated from it, as at Mycenae and Tiryns. Furthermore, the site has not revealed any Linear B tablets, although instances of Linear B have apparently been found on site and in the area, which hint at the existence of some literate population. One unusual example incised on a kylix sherd from Megaron B, and on a stone object, thought to be a weight, from Megaron A (Adrimi-Sismani 2006, 468, 474). A possible Linear B 'inscription', which would be unique, has been found on the lintel of a tholos tomb in the region, north of Volos at Kazanaki (*AR* 2005, 59-60). It seems fair to conclude that the site was certainly of some importance and that there was a palace of some kind, which was presumably interacting with the other palaces and major sites to the south. But on the current evidence at least, it may not have had a literate bureaucracy, although what may be the casual use of Linear B incised on a kylix is interesting. It should be borne in mind though, that it need not have been a local who made the markings.

At Kanakia, on Salamis, an important 13th century complex has been identified, but no Linear B has been found (*AR* 2001, 14-15; *AR* 2002, 15; *AR* 2005, 10). Although it has inevitably been hailed by some as 'the palace of Ajax', the complex is somewhat irregular, and while there were many rooms indicating storage and production, and even megarons apparently like those at Midea have been identified, it is difficult to conclude that this was a true palace rather than an important local centre; there is no evidence of special architecture or decoration that might make the buildings more noteworthy. The site was not insignificant though, with links overseas, and was perhaps as important as the Menelaion (Dickinson *pers.comm.*).

The Linear B texts allow some insight into the way that palaces bound territories and different locations together. The Pylos tablets, which mention some 4000-5000 people, and name c.240 sites in two provinces and 16 districts in the south-western Peloponnese, demonstrate that the palace had real reach into the surrounding regions, in terms of both information and the movement of goods (Palaima 2004a, 269). This seems to apply to Thebes as well (Palaima 2004a, 270). Texts from Pylos and Thebes show that animals could be sent to the centre from outlying territories for feasting on a large scale (perhaps 1000 or more people, on occasion), while centres sent offerings to outlying shrines (Palaima 2004b). Some animals were transported over 50km to Thebes, and across the Euboean Gulf from Karystos and Amarynthos on Euboea, while Amarynthos received wool from Thebes (Palaima 2004b, 226). This testifies to a degree of integration that denotes significant interrelationships across

sometimes large distances. Thus Pylos evidently had a defined sphere of interest in Messenia, and Thebes had interests in southern Euboea and Boeotia, and perhaps even Aegina (Aravantinos 1995, 616-617; Shelmerdine 2001a, 345 n. 94, 356; Hope Simpson 2003, 234). The interrelations of the sites in the Argolid, where fewer Linear B tablets have been found, are not well understood, although Mycenae is usually accorded primacy. The situation may have been complex and dynamic.

While the texts allow a limited picture of the potential network of complex relationships that existed within Mycenaean palace societies, this kind of society was not present in all areas of mainland Greece, as noted above. In some areas, literate palace societies did not develop, even though significant local centres existed, as at the Menelaion, Dimini, Krisa, Teikhos Dymaion and Kanakia. It could be suggested that, if it were not for the discovery of texts at the major palace sites, it would be difficult or even impossible to deduce the existence of palace societies from the archaeology alone, and therefore to label some areas non-palatial is begging the question. The problems with Orchomenos and Gla were noted above. However, areas like Elis or Achaea reveal no significant or comparable sites: Teikhos Dymaion is not particularly big and seems to have had no lower town. The fortification of Krisa was evidently organised by a power of some kind but there is no palace or similar building, and there is no other identified power-base nearby. Indeed, it seems flawed logic to assume that all areas of Greece should have developed a palace society, since it is evident that societies of greater and lesser complexity, and different organisation, could exist alongside each other contemporaneously, as

in LBA Anatolia, and Archaic and Classical Greece, with its mix of ethnos and polis states.

Given that there was in all likelihood a mixture of differently organised societies in LBA Greece, all of which could be called Mycenaean, through their use of Mycenaean material culture, it is necessary to consider how they related with one another. The Linear B texts reveal very little about the interrelations of the palaces themselves. Shelmerdine (2001, 356) notes the possible significance of the term reconstructed as *Lakedaimonios huios* ('son of Lakedaimon'), and three examples of the ethnic term *lakedaimonios*, on tablets from Thebes. While interesting, concluding anything about interregional relationships from this evidence is problematic, due to the assumption that it relates to the area of later known as Lakedaimon. It is likely that, as in other areas such as the Near East, systems of alliance, dependence, and rivalry existed between sites of differing significance. These can be envisaged as existing between palace centres themselves, and between palace centres and other sites, and it should be remembered that those at the centre of individual palace societies may have engaged in an 'international' society that stretched across Greece and perhaps further (see below), but also that they will have had a concern for the local situation. 'Politics' will have meant maintaining a balance in various spheres of activity. Furthermore, important figures and communities in non-palatial areas could equally have played a part in this world. It is perfectly plausible that dynastic marriages, hostage taking, and so on, played a role in articulating relationships and relative status, while guest

friendship rituals are possibly hinted at by some Linear B texts which refer to perfumed oil and textiles as *xenwia* (Shelmerdine 2001, 354).

Regarding the relationship of palatial and non-palatial areas on the mainland, Eder has recently argued (2007, 4) that patterns of seal distribution illustrate widespread regional communications throughout Greece, which is surely correct. She has further argued that in fact 'groups of seals link the regions of northern, central and western Greece on various levels more or less directly to the palatial centres' and that these non-palatial regions were in fact 'controlled and exploited by the Mycenaean palaces' (Eder 2007, 5,10). However, this position may be somewhat extreme; Eder is perhaps overemphasising the power of the centres, their role in controlling trade, and the dependency of peripheral zones on centres for manufactured goods (Eder 2007, 2). It seems certain that there were links between such areas, though these could equally be seen as mutually beneficial and negotiated, rather than always exploitative and negative. The realities will undoubtedly have included a variety of scenarios and these presumably could have been different at different times.

The development and organisation of Mycenaean palace societies

Having broached some of the difficulties in defining and identifying palaces, their territories and non-palatial areas above, it remains to say something more about the development and organisation of the palace societies. It is likely that the process of their expansion, development and maintenance, and the relationships that this involved, were of importance in their collapse, as is discussed further in chapters 3 and 4 in particular. It should be stated initially

that, despite a recent comment by Postgate (Voutsaki and Killen 2001, 160) that, from the perspective of a Near Eastern specialist, the similarities between the Linear B tablets from different sites and periods would be taken as indicative of a unified authority, there is no evidence of a unified Mycenaean empire, or hegemony based at Mycenae (Thomas 1970; 1995, 354). The current consensus suggests there were a variety of independent polities that shared aspects of a common culture (e.g. Dickinson 2006a, 27-29; Wright 2006, 25).

Palace societies emerged in some parts of Greece by LHIIIA and continued to exist throughout LHIIIB (c.1400-1200). These had developed from smaller and less complex societies, often characterised as chiefdoms, and thus a distinction between earlier chiefdom type societies and later state-like societies is often suggested, although there is some dispute the precise nature of palace societies (Shelmerdine 2001a, 349; Small 1999). Bennet (1995 and 1999) has proposed an outline of the expansion of one palace site, Pylos, in its immediate area and through Messenia, as it came to dominate an area of approximately 2000km^2, incorporating and outstripping its local rivals. The extension of control over the site Nichoria, a local centre in its own right some distance away, may be indicated by the abandonment of the LHIIIA1 megaron (Unit IV-4a), which went out of use in LHIIIA2, the abandonment of a long used tholos tomb, also in LHIIIA2, and the construction of a new one (Bennet 1995, 598-599). Similar patterns of development could be expected for other palace centres.

The creation of larger palace-based polities in some areas would have involved some reordering of society, perhaps often at the level of local elites or influential figures, and witnessed the creation of a paramount figure, the *wanax*, with wider influence, at its centre. Undoubtedly, as regions came under the influence of emergent centres, local communities would have been forced to accommodate them in some way, and this would have stimulated changes both at the centre and periphery. It is likely that a variety of strategies were used in the expansions of local centres into more regionally influential sites (and presumably between major sites in different regions) including diplomacy, negotiation and alliance, though warfare may also have played a significant role (Acheson 1999, 100-102).

Since this process affected many individual communities across different parts of Greece, it is impossible to generalise about the way in which it was undertaken, but it need not be assumed always to have been a negative relationship from the point of view of smaller of peripheral sites. Even regarding Roman imperialism, it should be remembered that pre-existing local power structures often continued into the empire, albeit with the addition of a new upper tier, and much of the central governance was reactive rather than proactive. Thomas's comment that 'self-government continued at the king's command' seems appropriate, especially given more recent interpretations of the significance of Linear B, discussed below (Thomas 1995, 349). Indeed smaller sites could have sought out links with more powerful centres for many reasons, including gaining advantage over rivals. In any case, since the palatial regions were bound together by a variety of social ties, stemming from a range

of relationships, it would be expected that these could play a role in their collapse (Wright 2001).

There is some debate about how palace societies were organised in terms of their place in the social, political and economic landscape of LBA Greece. Positions differ from a very minimal view of the influence of palaces and their integration of territories, with palaces characterised as rather superficial phenomena, 'clumsily grafted' onto a warrior society, and which did not control territories but rather focused on controlling trade routes (Sherratt 2001, 238; Small 1999), to views usually derived from interpretations of Linear B tablets which suggest that they were almost totalitarian regimes (Deger-Jalkotzy 1996, 724-725 and 1998 a and b; Betancourt 1976 and 2000). The minimalist picture, while rightly grounding interpretations of the scale LBA societies in Greece in an archaeological reality untainted by the influence of the Homeric epics, surely underestimates the impact of the palaces, with their 200 year history, and development of networks and relationships in their regions. The evident reach of the centre into other communities shown by the Linear B tablets, albeit primarily from Pylos but more recently also from Thebes, should not be over interpreted, but nevertheless, interest in trade routes would surely be followed by at least a degree of interest in territories.

On the other hand, interpretations of Linear B and its significance have matured since the early days of its study. It is quite clear that the palaces' interests, as recoverable from the tablets, were specific and selective and that most economic activity went on outside their bureaucratic interest (Halstead

1992, 1999a and 1999b). Although some commodities flowed in to the palaces, they do not seem concerned with their production and collection (Halstead 1999b, 36), even with regard to pottery production (Whitelaw 2001) and there may have been no general taxation, although evidence is admittedly limited (Dickinson 2006a, 41). They also do not seem to have acted 'as a central clearing house for all goods and commodities manufactured' in their territories, as has sometimes been thought (Dickinson 2006a, 37).

Although palaces undoubtedly will have acted as economic stimuli, and their very presence may have stimulated population growth and increased more complex kinds of social interaction, their direct influence may have been felt 'by most inhabitants of the territory only intermittently and indirectly' and need not be seen as unduly exploitative or harsh (Palaima 2004a, 269-270; Dickinson 2006a, 38). Areas closer to the palace may have naturally been more easily influenced and better integrated into palace systems, but there may have been no really significant integration or overt control of outlying areas with which palaces were sometimes certainly connected. Such styles of dominance are recognisable in other cultures, such as the Maya, where the expansion of some centres into 'galactic polities,' i.e. major centres that won allegiance and tribute from other centres, did not involve direct rulership from the paramount centre (Demarest 2004, 215-217).

Linear B does reveal something about the social hierarchy that existed in at least some palace societies. The *wanax* appears as the most prominent figure. He had the largest landholding, unique 'appointment authority' and was

involved in religious, economic and military affairs (Palaima 2006, 64-68). A figure called the *lawagetas* seems to have been second to the *wanax* although the precise role and relationship of this person to the *wanax* is unclear (Bennet 2006, 192). Sometimes these figures are associated with 'secondary' megarons at palace sites, but this is speculative, given that precise functions and relationships are unclear. Another group related to the palace were the *eqeta*, who may have been related with the military sphere and could have been members of an aristocracy, the companions of the king. There seems also to be some distinction between members of the palace based hierarchy and those whose authority may be locally based, as has been suggested for the *qasireu* (Palaima 2006, 68). However, since Linear B tablets only reveal the selective interests of the palaces, any suppositions about less well-known figures are questionable, and it may be that they reveal little or nothing about local elites or prominent families that existed, as opposed to the roles of people in the specific context of the palace. That such individuals and groups did not exist is highly implausible.

Wright (2006, 37) summarises the importance of palaces in their communities as the 'focus of political, economic, social, ideological, historic and myth-historic practices and beliefs... a cultural cloak that the ruling elite wrap around themselves and in which they symbolically envelop their retinue, clients and commoners.' This was achieved through the active use of palaces as places of participation, and perhaps of exclusion, that would create and reinforce relationships between elites (Palaima 2004b).

Palaces, then, did not control all aspects of life in the regions where they existed, but equally they can be expected to have had a significant impact in terms of affecting the material and non-material culture of the regions of which they were a part. It seems that over time, particularly powerful individuals and groups in different regions saw it as valid and useful to compete and engage with each other in the construction of particular architectural forms (the palaces), and in the use of particular forms of culture (e.g. Linear B), which represented a particular lifestyle, and this in itself shows the significance of the palaces as an expression of social behaviour. Nevertheless, whilst the Linear B tablets, palaces, citadels and associated burials at some sites are the most visibly impressive remains of palatial society, most of Greece may not have been organised along the same lines as palace societies.

Non-palatial societies

Many areas of the Mycenaean world did not become palace states in LHIIIA-B, rather 'less organised principalities, close in nature to their early Mycenaean predecessors, may have been normal in many regions' (Dickinson 1994, 78). Even sites such as the Menelaion and Kanakia may better fit this category. These areas of non-state formation must be considered as important as palatial regions in gaining a holistic and more accurate view of the diverse Mycenaean world. In the north, west and central Peloponnese, for example, the areas of Achaea, Elis and Arcadia, as well as areas north of the Gulf of Corinth, there is no evidence of anything approaching a palatial building complex, although Teikhos Dymaion and Krisa were discussed above. This has led to these areas being termed peripheral to the core of the palatial zones (Eder 2007, 1-2), and

while this is a valid archaeological distinction, it does not mean that the population of these areas can be forgotten or sidelined in favour of palatial areas.

Vermeule (1960a, 1) wrote that 'the Greek mainland is also dotted with less significant towns and villages whose role was not so direct and grand in the formation of policy or style, but whose remains can in some ways be more precisely suggestive for ordinary Mycenaean patterns of existence and for the course of history as it affected the common population.' Indeed, these regions and many of the Aegean islands (Cyclades, Dodecanese), which were also Mycenaean (Deger-Jalkotzy 1998b, 105), should not be considered secondary to the major sites, which archaeologists have not surprisingly focussed on. The variability of socio-political evolution is itself a factor to be taken into account when considering any period of LBA Greece. Even within one culture zone, in this case the Mycenaean, it is not unusual to expect a variety of structures to coexist at different levels of complexity.

The northern Peloponnesian region of Achaea, for example, was long considered an underpopulated backwater of Mycenaean culture (e.g. Vermeule 1960a). For some time, few sites were known, but continued work increased their number to 70 in 1979, and pushed the chronological range back to the formative LHI-II, although later sites predominate (Papadopoulos 1979). It is now thought to have been densely populated in Mycenaean times, with scattered settlements and associated cemeteries (Papazoglou-Manioudaki 1994, 199). While burials provide most of the evidence, as they do for pre-state

periods in palatial areas, there are notable settlement sites at Teikhos Dymaion and Aigeira, which have their floruit in the postpalatial period (SCIEM 2000). Achaea possesses early Mycenaean tholos tombs at Kallithea and Klauss, perhaps for local rulers, as well as many warrior burials from LHIIIC at Kallithea, Klauss, Lousika and two at Krini. A tomb at Krini was in use from LHIIIA to mid-LHIIIC, with late warrior burials, which suggests a continuity of stratified burials (Papazoglou-Manioudaki 1994, 199).

The western regions of the Peloponnese, Achaea and the Ionian Islands in particular, as well as the Aegean islands, have often been fitted into a traditional culture-historical narrative that links their late Mycenaeanisation with supposed refugees fleeing from destroyed palatial states, and sometimes these narratives are linked with myths and bigger population movements (Vermeule 1960a, 18-19; Barber 1999, 137). However, it could more plausibly be suggested that these regions existed in pre-state conditions alongside palatial states and underwent their own continued developments and transformations.

The evolution of socio-political complexity does not necessarily lead from chiefdom to statehood in all cases, or at the same time, and proximity to states or more complex societies does not in itself necessarily stimulate similar developments in all areas. Wright (1990, 48) has suggested that the formation of palace centred society on the mainland 'was much delayed with respect to the initial period of stratification observed during the Shaft Grave period.' This is an equally valid perspective concerning developments elsewhere and at different times. Rather than simplistically associating changes in Achaea or the

Aegean islands with palatial collapse elsewhere, i.e. through the supposed influx of refugees, they can be considered in light of the local regional development of complexity. That said, the spur to increased complexity in Achaea and the north-western Peloponnese, as well as the Ionian and Aegean islands may have been associated with changing patterns of trade, which themselves may have had something to do with palatial collapse (Sherratt 2001), and this is discussed in more detail in chapter 3. Non-palatial Achaea enjoyed a period of prosperity during LHIIIC in stark contrast to postpalatial Messenia, suggesting divergent and asynchronous trajectories of development that could have had a variety of complex reasons (Papazoglou-Manioudaki 1994, 200; Eder 2006, 559).

A total landscape

It may be best to consider Mycenaean Greece as patterned by spheres of influence dominated either by larger or smaller political units of greater or lesser complexity and reach, interacting and competing in different ways, rather than by fixed territorial entities with permanently defined boundaries. The strength and influence of palaces in particular regions may have waxed and waned, depending on the interrelations between central and local elites, the strength of individual rulers, and other factors, at any given time. Such fluctuations may, to some degree, be represented by at least some of the destructions visible in the archaeological record (see below). This is true both of the palaces own immediate region and more distant areas that may appear non-palatial. There are likely to have been many traditional relationships that developed over time, perhaps even between distant areas, that Linear B does

not mention, but which may underpin those that scholars are aware of, while new relationships would have been negotiated continuously (Palaima 2004a, 300-301).

Clearly, significant local sites, while smaller and less visibly complex, should be considered in a similar way, although they are even more difficult to discuss than palatial areas. Non-palatial areas and sites should not be considered as of secondary importance, but as peopled by equally active agents who played a role in the life of LBA Greece, and will in some areas at least have interacted with palace people. We cannot be certain what forms these relations had, but again, a variety of situations and relationships could be envisaged.

It is extremely difficult to arrive at any complex understanding of the Mycenaean societies operating in the later thirteenth century, but some sensitivity to variation in a total landscape is necessary. In this view, it still seems appropriate to make a broad definition between palatial and non-palatial areas and not to assume that all societies, even when they make look similar, operated in the same way,

The Ahhiyawa question

Another complex problem, connected with the status and activities of mainland palaces, the Aegean islands and parts of coastal Anatolia, which must be mentioned here, is that of Ahhiyawa. Since 1924, it has been suggested, on the basis of the similarity with the Homeric use of the terms 'Achaeans' for Greeks, that a kingdom called Ahhiya/Ahhiyawa, with its own Great King,

mentioned in Hittite letters, refers to a Mycenaean Greek kingdom (Bryce 1998, 59-60). Although this remains controversial, it seems to have become cautiously accepted, in part due to the increasing evidence for Mycenaean culture in western Anatolia, the region of contact between the Hittites and Ahhiyawa (Mee 1998, 142-143; Mountjoy 1998; Niemeier 1998 and 1999; Hope Simpson 2003). As Bryce notes (1998, 61), 'if the Ahhiyawa-Mycenaean equation is *not* valid, then we must accept that there were two discrete Late Bronze Age civilizations with remarkably similar names, making their presence felt in the same region and in the same period... it is difficult to write this off as coincidence'.

The location of the centre of Ahhiyawa is significant for understanding the potential reach of palaces, and palatial relations with non-palatial regions, specifically the Aegean islands, since it is evident that 'islands', arguably the Dodecanese, and Millawanda, identified as Miletus, were at times under the influence, or even control, of the kings of Ahhiyawa from c.1300 (Niemeier 1998; Bryce 1998, 210; Hope Simpson 2003, 217, 223, 228-231). The many competing theories have been outlined in detail by Niemeier (1998; Figure 1.1).

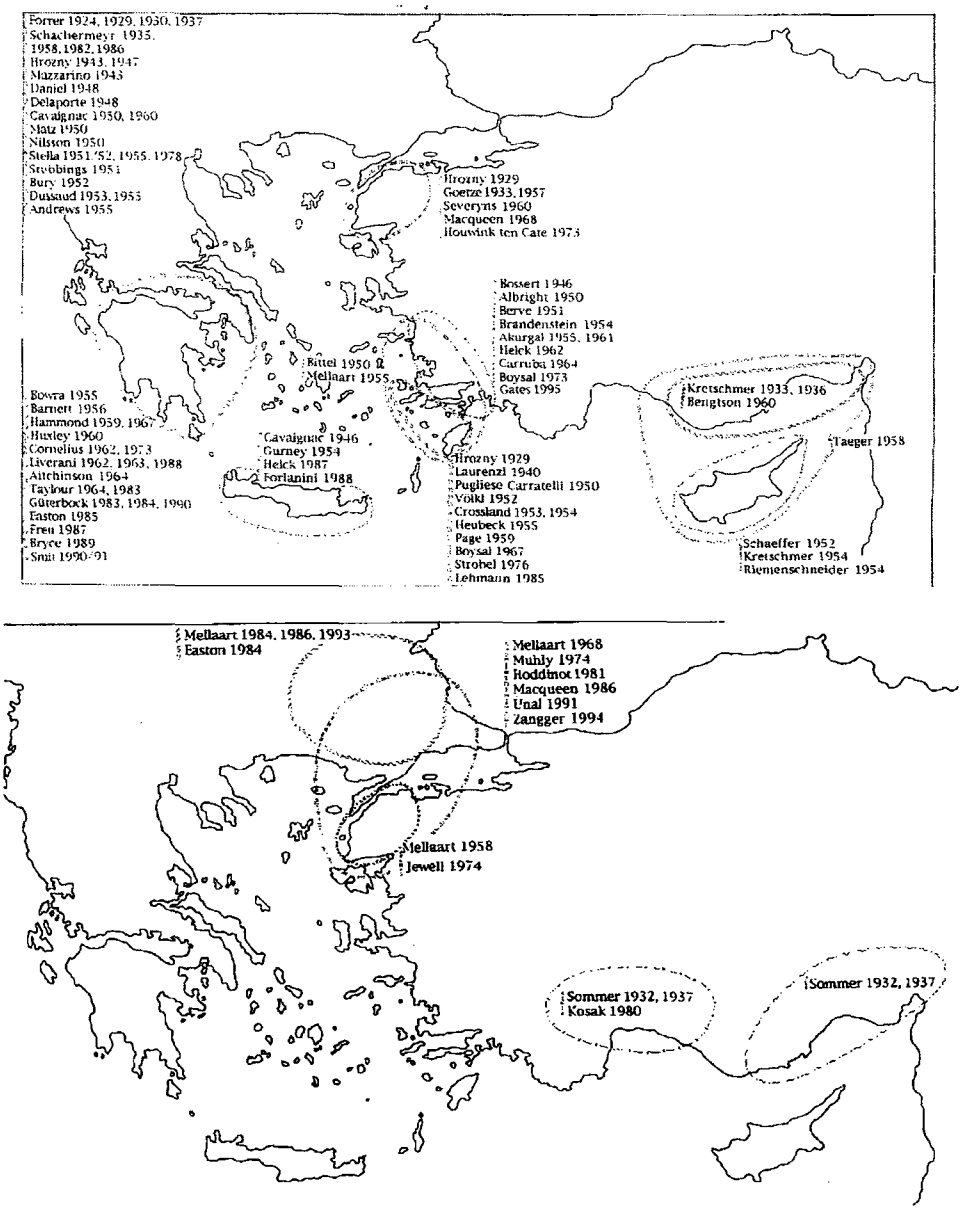

Figure 1.1 Hypothesised locations of Ahhiyawa. Source: Niemeier 1998, 20 Figure 3 and 22 Figure 4.

Mountjoy (1998, 33-45) has recently supported the idea that Ahhiyawa was a kingdom based on Rhodes, and including most of the Dodecanese and parts of mainland Anatolia. However, as yet, there is no evidence of a significant centre on Rhodes or Kos, which constitutes an argument against this

identification, and Hope Simpson (2003, 231) also doubts that they would have 'constituted a sufficient power base for a Great King of Ahhiyawa.'

As for the mainland, Thebes has been considered a possible location, which could now be considered more likely, since it evidently had interests beyond its own immediate territory (Hope Simpson 2003, 234). Hope Simpson (2003, 236), however, doubts that Thebes should be ranked a 'Great Power' since it had a nearby rival at Orchomenos, although this ignores the possibility that Theban interests lay primarily overseas and to the south-east, rather than in expanding its home territory at the expense of its neighbour. Pylos is not usually considered as an option, although its small size and location in western Messenia should not immediately dismiss it. The existence of naval forces, indicated by references to rowers on the Linear B tablets, and the presence of people from south-western Anatolia must be taken seriously as evidence of a definite connection between Pylos and the eastern Aegean, the precise mechanisms of which remain unclear (Niemeier 1998, 40).

The most preferred option, however, remains Mycenae, since with its evident wealth and cultural prominence it may be considered a special case (Hope Simpson 2003, 233-234; French 2005). Although the nature of relations of the sites within the Argolid is unclear, it may be that Mycenae was the dominant site in a network of interconnected polities, and it has been suggested that these reached out across the Aegean to influence the Dodecanese and south-western Anatolia (Hope Simpson 2003, 229). On Rhodes, the high proportions of pottery coming from the Argolid in LHIIIA2/B may reflect this, although

Argive pottery need not equate with Argive political control, nor imply any mass migration from one region to the other (Georgiadis 2004, 64).

Voutsaki has argued for a special relationship, perhaps even in a political or military sense, between the Argolid and Rhodes (2001, 210-211; Sherratt 2001, 222 n.17). Again it is important to consider the nature of control. Sherratt (2001, 222-223 n.17) doubts that tight control could have been exercised at such a distance and suggests a more reciprocal relationship, and this seems more likely. Hope Simpson (2003, 230) also rightly notes 'the problems involved in managing, and even in maintaining, this and any other extended kingdom.' Such problems are demonstrated in Hittite letters relating to Ahhiyawa, which suggest that members of the king's family would have played a role in 'ruling' these distant places, although with a necessary and perhaps high degree of autonomy, which Miletus also had (Bryce 1998, 61, 322; Gurney 1990, 40-41).

Destructions and abandonments

This section will give a survey of the evidence for destructions and abandonments from LHIIIA1 onwards, after a brief discussion of some chronological and terminological issues. Destructions occurred at many sites both major and minor throughout the palatial and postpalatial period and are often taken as evidence of warfare, although accidents and deliberate destruction for replanning are also possibilities (Dickinson 2006a, 42). Due to the problems of arriving at an accurate absolute chronology, it is difficult or impossible to give precise dates for these events, and this outline will follow

the relative chronology offered by ceramic classification. However, sometimes is difficult to be certain which particular destruction or phase a source is referring to, owing to sometimes vague language and the different terminology or phasing between sites, and the different lengths given to phases (for a discussion, see Mountjoy 1999, 38-41, Table II). In the later phases of LHIIIC there are fewer known settlements, and thus the situation is unclear, but by this time many of the LHIIIB settlements had been abandoned, and whatever settlements there were must have been smaller and main sites certainly less impressive, with some population groups gathered at certain centres, and others perhaps spread thinly across the land (see chapter 5 'The contribution of survey', for further discussion).

Although the destructions associated with the collapse of Mycenaean palace society are traditionally those which occurred at or near the end of LHIIIB2 ceramic phase, usually placed 'at or near the end of the 13th century BC' (Rutter in Deger-Jalkotzy and Zavadil 2003, 255), or c.1190/1180 (Mountjoy 1993, 4 Table I; 1999 16-18 and Table I; Shelmerdine 2001a, Table 1), Mountjoy (1997, 110; 1999, 36-36, 75, 152-153) has identified a transitional LHIIIB2/LHIIIC Early phase in pottery at many sites including, Iria, Tiryns, Korakou, Athens, Thorikos, Ayios Kosmas, Eutresis, Thebes, the Menelaion, Pylos, Nichoria and Midea. Wiener (in Deger-Jalkotzy and Zavadil 2003, 246) has followed this, suggesting that LHIIIB production in the Argolid largely ended around 1215 followed by 'about a decade for IIIB-IIIC Transitional' and he suggests that 'the destructions of the Mycenaean palaces when IIIB-IIIC

Transitional pottery is in use may occur at an earlier date than is generally supposed.'

Demakopoulou (2003, 91) has resisted this classification of destruction deposits at Midea and prefers late LHIIIB2. In fact, she sees no evidence for a stratigraphic LHIIIB-LHIIIC Transitional phase at any site and she cautions against creating new phases based purely on pottery developments rather than stratigraphy. Mountjoy's transitional pottery appears in both destruction and post-destruction deposits at Mycenae and possibly Tiryns (Dickinson 2006a, 44). Although Wiener has taken the Transitional phase to equate to a chronological phase, Demakopoulou (2003, 91) notes that this is not necessarily implied by changing shapes and decoration. Rutter's approach (in Deger-Jalkotzy and Zavadil 2003, 255) is to define the end of the LHIIIB period by 'the major destruction-by-fire horizon that is such a pronounced feature of the stratification at the principal Argive citadels of Mycenae, Tiryns and Midea,' and for him any pottery that follows must be defined as LHIIIC 'no matter how many LHIIIB2 survivals it may include.' He rejects the use of the 'cumbersome and potentially misleading 'Transitional LHIIIB2-LHIIIC Early'' and retains the term LHIIIC Phase 1. This is followed by Gauss (in Deger-Jalkotzy and Zavadil 2003, 253). As for the early appearance of LHIIIC features, Demakopoulou (2003, 91) suggests that pottery types 'hitherto assigned to LHIIIC Early, actually appeared earlier than had been believed, evidently in the latest LHIIIB2 period' and really some overlap is only to be expected since these are modern definitions imposed on a continuous tradition.

There remains the problem of relating the widespread destructions that mark the end of the palatial period and beginning of the postpalatial period to each other. Jung (in Deger-Jalkotzy and Zavadil 2003, 254) suggests that 'this revolutionary change... should be recognised by a change of chronological labels' and this is certainly helpful. He makes the assumption that the palaces of the Argolid 'met their final destruction at approximately the same time' but cautions that 'to assume that all Mycenaean palaces of the Aegean and even other sites in remote regions (Kastanas) were destroyed within a short period of time, i.e. more or less contemporarily... is surely an oversimplification', albeit one that would make the synchronisation of chronology easier to deal with (Jung in Deger-Jalkotzy and Zavadil 2003, 254). However, even to assume simultaneity for the destructions within the Argolid, based merely on proximity, may be begging the question, and perhaps unduly favours certain interpretations of their cause (this is discussed in more detail in chapter 3).

Dates of individual destructions themselves are also sometimes problematic. The destruction of the palace at Pylos has been placed early in LHIIIB, mid-LHIIIB late and at the end of LHIIIB and LHIIIC (Popham 1991; Mountjoy 1997, 109). This difficulty follows from using pottery style to date the destruction, since at Pylos the more easily dated painted vessels are rare and seem to have features of LHIIIA2, LHIIIB and LHIIIC Early. A similar difficulty seems to be apparent at Nichoria, where the 'later part of the LHIIIB sequence... diverges considerably from that of the Argolid', although a late LHIIIB2 date is likely, and Transitional LHIIIB2-LHIIIC types were present (Thomas 1994, 167). At Thebes too a similar problem has been encountered.

This is due to the difficulty in understanding the relationship of buildings on the acropolis, which could be either two contemporary or successive palaces (Demakopoulou and Konsola 1981, 25-26; Shelmerdine 2001a, 340). It seems that several destructions affected Thebes from LHIIIA onwards (Dakouri-Hild 2001), but also it is argued that some of the Linear B tablets belong to LHIIIB2 (Shelmerdine 2001a, 373 n.276) and that the final destruction belongs to the end of this phase (Dickey 2005). The final destruction of the palace at Thebes, followed by some LHIIIC reoccupation, should fall at the end of LHIIIB2 or in Transitional LHIIIB2-LHIIIC, with the Pelopidou Street archive dating to that phase (Shelmerdine 2001, 356, 373 and n.276).

Nevertheless, some progress seems to have been made. Mountjoy (1997; 1999, 36) argues that the palace at Pylos was destroyed somewhat later than Mycenae and Tiryns, since it contained material of her Transitional phase, and this has been accepted by Rutter and Jung (in Deger-Jalkotzy and Zavadil 2003, 254-255), and seems correct. Further, a destruction of 'whatever in the way of a Mycenaean palatial establishment may once have existed on the Athenian Acropolis' has been argued to be roughly contemporary to that at Pylos (Rutter in Deger-Jalkotzy and Zavadil 2003, 255). These took place after the destructions in LHIIIB2 of Mycenae, Tiryns and Midea. Rutter (in Deger-Jalkotzy and Zavadil 2003, 255) further notes that 'there is every reason to believe that the Menelaion in Laconia, Thebes and Orchomenos in Boeotia, and Dimini in Thessaly will turn out to have fallen victim to similar disasters within the time period marked by the destructions... at Mycenae, Tiryns, Midea, Pylos and Athens.' Indeed, Adrimi-Sismani (2006, 474) has recently

confirmed a Transitional LHIIIB2-LHIIIC date for the destruction of Megarons A and B at Dimini.

It may be that what has seemed to be an apparent simultaneity in the major destructions has been given too much significance, for example in Kilian's hypothesis (1988a, 118, 134, 137, Fig. 10) that earthquakes were responsible for widespread and simultaneous destructions. Destructions dated to either side of adjacent ceramic phases could have taken place closer together than destructions within a given ceramic phase. Even within the Argolid, to assume that a single earthquake could have simultaneously devastated every major site is questionable, since very local geological characteristics, as well as the orientation of individual buildings, will have affected the potential destructiveness of any seismic activity. Nevertheless, some scholars, such as French, do see this as possible for the destruction of Mycenae, Tiryns and Midea (see chapter 3).

It is tempting and perhaps inevitable to assume that since the destructions appear to have been close together, and were undoubtedly significant events, they must therefore have been connected, and this chronological perception affects any collapse hypothesis. Thus Rutter (in Deger-Jalkotzy and Zavadil 2003, 255) states 'the fiery catastrophes that marked the end of most Mycenaean palatial centres were not strictly contemporary, but rather extended over two ceramically recognisable subphases. This fact should neither surprise us nor cause us to alter our definitions of what we agree to be ceramically differentiable slices of time.' Even so, it must be recognised that these

destructions could have taken place over a period of some 25 years or more (Popham 1994, 281).

Destructions[4]

LHIIIA1 (1400-1375BC)

Tiryns: House 49 in the west Lower Town; Mycenae: Ramp House; Phylakopi: Megaron; Kea: Houses A, AB, C and F; The Menelaion: Mansion 2; Nichoria: large building; Krisa: Building F; Athens: indicated by domestic pottery dumped in wells; Korakou; Pylos;

At the end of LHIIIA1 there were several destructions at major sites, often following new construction, although these did not lead to the total abandonment of the sites (Mountjoy 1993, 11-13). At Mycenae the Ramp House was reconstructed, indicating some kind of prior disturbance. In the Lower Town at Tiryns, House 49 was abandoned and not rebuilt. The dumping of domestic pottery has also been taken to indicate disturbances at Korakou, where LHIIB pottery was dumped into the East Alley. This also occurred at Athens, where pottery of LHIIB/LHIIIA1 was dumped into nearby wells, although normal clearing may be a perfectly valid explanation. In Lakonia, Mansion 2 of the Menelaion was abandoned in LHIIIA1 and there is no LHIIIA2 pottery, although there is some from elsewhere on site and it was later reconstructed to a new plan in LHIIIB, so the whole site may not have been abandoned (Catling 1977, 32; Dickinson *pers. comm*). The large building at Nichoria in Messenia was also abandoned. At Pylos, there was a destruction

[4] This outline and approximate dates follow Mountjoy (1993, 11-25, 140), with additions.

at the palace. In Phokis, Krisa, a floor deposit of LHIIIA1 pottery in Building F suggests a disturbance. On Kea, at Ayia Irini several houses were destroyed, as was the large building beneath the megaron at Phylakopi that may belong to this phase (Renfrew 1978).

LHIIIA2 (1375-1300BC)

Mycenae: Pillar Basement/Palace; Tiryns; Thebes: House of Kadmos (?)

Later building overlying earlier structures makes it difficult to draw conclusions about construction sequences during this phase (Mountjoy 1993, 15). At the end of LHIIIA2 the Pillar Basement and possibly the palace was destroyed, perhaps by earthquake (Mountjoy 1993, 15; French 2002, 59-61). Houses outside the citadel such as Petsas' House, the Second Cyclopean Terrace House, the House of the Wine Merchant, and the House of Lead (Atreus Ridge) were also destroyed at this time. Buildings at Tiryns were remodelled at this time. It is also possible that the House of Kadmos at Thebes was destroyed late in LHIIIA2 or early in LHIIIB, while other parts of the Kadmeia were in use later (Dakouri-Hild 2001, 101, 106-107). At Pylos, the palace was remodelled during LHIIIA2 or early LHIIIB1. At Mitrou, in the Euboean Gulf, there may be a destruction horizon at LHIIIA2 early, which may be significant in explaining the lack of evidence for LHIIIB occupation, although there is occupation from LHIIIC onwards, including a megaron (Building B) (*AR* 2006, 64-65).

LHIIIB1 (1300-1225BC)

Zygouries; Mycenae: Cult Centre, East Wing buildings, House of Oil Merchant and houses on Atreus Ridge such as Panaghia Houses I and II. – Earthquake evidence of body; Tiryns: early in IIIB1 and mid-IIIB

During LHIIIB destructions occurred at many sites (Mountjoy 1993, 19). In the Citadel at Mycenae, the newly constructed Cult Centre, Great Stair and East Wing Buildings (including the House of Columns and the Artisan's Quarters) were destroyed at the end of LHIIIB1. Outside the citadel, the Panayia Houses I and II were destroyed in mid-LHIIIB, perhaps by an earthquake, since the body of woman crushed by falling stones was found in the doorway of Room 5, House I (French 1996, 51). At Tiryns there were two destruction phases, one early in LHIIIB1 and the other mid-LHIIIB and, as at Mycenae, bodies were found under buried a wall of the early LHIIIB Building X (Kilian 1996, 65). There was also a destruction at the end of LHIIIB1 at Katsingri in the hinterland of Tiryns (Kilian 1988a, 133). Zygouries has been thought to have been destroyed around this time (Mountjoy 1993, 20, 161) but there is a small amount of LHIIIB2 pottery present (Rutter 2000b) and reported activity in LHIIIC Middle (Morgan 1999, 365-366). Rutter further comments that both Zygouries and Tsoungiza appear to have become less intensively occupied after LHIIIB1, although again there was some LHIIIC Middle presence (Morgan 1999, 365-366). French suggests that Zygouries was destroyed earlier than Mycenae, and the destruction by fire was centred on a major building: the so-called Potter's Shop (Dickinson *pers.comm.*). At Thebes, there were destructions in several areas, the Arsenal, the Loukou plot,

the Lianga-Christodoulou complex and the Koroupouli workshop, which have been dated to the end of LHIIIB1 (Dakouri-Hild 2001, 106-107).

End LHIIIB2/beginning LHIIIC Early (1225-1190BC)

Mycenae; Tiryns; Pylos; The Menelaion; Midea; Korakou; Thebes; Athens: north slope houses; Dimini: Megaron A, B and associated workrooms and storage areas (not earthquake (478) + IIIC early reoccupation, Adrimi-Sismani 2006, 468, 474); Pefkakia: settlement destroyed and abandoned (Adrimi-Sismani 2006, 476).

The widespread destructions and abandonments that took place c.1200 mark the collapse of the palatial system of the previous two centuries. In the Argolid and Corinthia there were destructions at Mycenae, Tiryns, Katsingri, Korakou and Iria (Katsingri: Kilian 1988a, 133; Korakou: Mountjoy 1993, 20; Iria: LHIIIC Early according to Rutter 2000b); in Lakonia at the Menelaion; in Messenia, at Pylos; in Achaea, at Teikhos Dymaion; in Boeotia and Phokis, at Thebes, Orchomenos, Gla (Iakovides 1990, 610) and Krisa, while the following sites appear to have been abandoned without destructions: Argolid and Corinthia: Berbati, Prosymna, Zygouries, Gonia, Tsoungiza; Lakonia: Ayios Stephanos; Messenia: Nichoria; Attica: Brauron; Boeotia and Phokis: Eutresis (Shelmerdine 2001a, 373 n.275; Morgan 1999, 365). At Korakou there was a major LHIIIC phase, including the multiphase House P (Dickinson *pers.comm.*). Thomas and Conant (1999, 16) note that while many buildings of the citadel at Mycenae were destroyed, the Granary, the North-east Extension and even the palace may have escaped destruction. At Dimini, megarons A

and B and their associated workshops and storerooms were destroyed at this time, as was the nearby coastal site of Pefkakia (Adrimi-Sismani 2006, 468, 474, 476). The North Slope Houses at Athens may also have been destroyed (Mountjoy 1993, 20).

LHIIIC Early (c.1190-1130)

During LHIIIC Early there were further destructions at various sites. At Mycenae, Phase IX floor deposits were covered by fallen boulders, perhaps from an earthquake (French 1999, 223). Settlement in the Lower Town at Tiryns has at least 5 phases down to LHIIIC Middle (Maran 2002, 223). Phase 2 is characterised by courtyard houses, which were destroyed by fire at the end of LHIIIC Early and some of which show curvature in the walls, which may indicate earthquake damage (Maran 2002, 223; Kilian 1996, 63). At Lefkandi the settlement (Phase 1a) was destroyed by fire, the destruction deposit being part of the subsequent Phase 1b (Popham and Milburn 1971, 333-334). On Salamis, the important site of Kanakia, with its corridor type building (Building 1A) paralleling others from Mycenae, Tiryns, Thebes and Dimini, suffered destructions and was permanently abandoned sometime during LHIIIC Early (Lolos 2003, 107-108). In Lokris, the site of Kynos, storerooms were destroyed perhaps by an earthquake, possibly indicated by later shifting in the walls (Dakoronia 1996, 41).

LHIIIC Middle (c.1130-1070)

At the end of LHIIIC Middle the Granary and possibly the Palace at Mycenae were destroyed by fire but the houses over the former cult area were not

harmed. In the Lower Town of Tiryns there were three destructions in this period, the middle one reportedly an earthquake. The final destruction at the end of LHIIIC Middle occurred on the Citadel and destroyed House W in the Lower Town. The new buildings at Lefkandi, constructed on a new alignment after the LHIIIC Early destruction were partially destroyed (Phase 2a) and restored (Phase 2b) but their end is uncertain (Mountjoy 1993, 140). At Kynos, the repaired storeroom was again damaged by fire and the site may have suffered a tsunami, possibly following an earthquake, reportedly not unusual for the area (Dakoronia 1996, 42). The buildings were repaired and used in LHIIIC Late and Submycenaean.

LHIIIC Late (c.1070-1050/30)

At Lefkandi, recent excavations seem to indicate that, contrary to what had previously been thought, there was no decline or abandonment of the settlement in the LHIIIC Late phase (Phase 3) (Lemos 2007a). Indeed, it seems the site was used continuously into Submycenaean and into PG.

As this compilation of data shows, the number of destructions that occurred over time indicates that such events were not unusual in the Late Mycenaean period. However, it should be noted that the term 'destruction', can be a loaded one, and as noted above, buildings can be destroyed for many reasons, and destruction could be considered a normal event in the history of site use. Dumps of earlier material could be part of normal clearing for continued use of parts of a site, and partial site destructions, especially when a site has not been fully excavated, are difficult to interpret but need not have been catastrophic or

representative of hostile actions. The notable feature in terms of identifying the collapse of palatial Greece is that, following the destructions around the end of LHIIIB2 or in the Transitional LHIIIB2-LHIIIC Early phase, particular important sites identified as palaces were not reconstructed in the same fashion, or to the same extent, whereas previously they had developed in a palatial tradition, for example with successive megara.

Population decline

One of the most notable features of the postpalatial period is the apparently drastic drop in population. This is reflected in the number of datable sites able to be plotted onto distribution maps between LHIIIB and LHIIIC (see chapter 5, Figure 5.1; Popham 1994, 282-283; Osborne 1996, 20-21). Snodgrass (2000, 364) noted around 320 sites occupied in the thirteenth century but only some 120 for the twelfth, and Desborough (1972, 18) thought the population reduced to a tenth of what it had been by the end of the twelfth century. Similarly high estimates have recently been made by Morris and Tandy (Dickinson 2006a, 93). Survey data, which plays a role in determining population is discussed in more detail in chapter 5. Whether these estimates are accurate, how rapidly any reduction occurred, and whether it should be interpreted as catastrophic are unclear.

Desborough (1972, 240) noted that 'to suppose a complete blank in habitation would be unnecessary and unrealistic.' Some have suggested that fewer sites may indicate a transition to pastoral nomadism, in which the population would be difficult to detect, but this seems unlikely (Dickinson 2006a, 94). This

argument, when not based on questionable assumptions about Dorians and their lifestyle (see chapter 3), is based on the apparent increase in cattle bones at Nichoria, but this has also been interpreted as due to elite activity or could simply be a local phenomenon due to the good pasture available; otherwise the crops grown in the postpalatial period seem to be essentially similar to those raised in the LBA (Foxhall 1995, 244-245, 248). Undoubtedly some of the reduction in sites can be ascribed to the nucleation of people at certain sites, but this could not compensate entirely for the supposed demographic changes, since most remaining sites are no bigger than in earlier phases (Dickinson 2006a, 63). Conversely, there may also be problems in identifying small sites that would represent a scattered population, but there is no evidence for the existence of such small sites (Dickinson 2006a, 93-94).

There may be problems with the evidence itself and the occurrence of other small 'dark ages' testify to this. One notable example is the sixth century hiatus on Crete, where temples became disused, monumental architecture and sculpture were largely absent, and pottery and other arts decrease in quantity, at least in so far as they are less archaeologically visible (Prent 1996-1997, 36). Many settlement sites appear to have 'skipped' this century, although the presence of legal inscriptions testifies to the existence of organised societies (Prent 1996-1997, 36, 45). Despite continuities as the archaeology becomes visible again, 'several distinctive characteristics of the preceding age were lost' (Prent 1996-1997, 45). Evidently people were present, however visible or invisible they are to archaeologists.

Ward-Perkins (2005, 142) strikes a cautious note concerning population decline after Roman collapse in the west, suggesting that 'we cannot take the apparent lack of post-Roman sites at face value, as unequivocal evidence for a cataclysmic collapse of population in post-Roman times. But of course the same evidence does not compel us to assume that population levels remained constant.' This applies equally to the situation in postapalatial Greece and 'it is very dangerous to assume that the extremely marked drops in the number of identifiable sites... represents a proportional drop in the population' (Dickinson 2006a, 70).

Nevertheless, it seems that although as Osborne (1996, 19) suggests 'there was no wide-scale abandonment of the Greek peninsula' it is hard to dismiss the idea that the there was population decline, and indeed this is to be expected in the aftermath of the destruction of major local sites, which probably had promoted some degree of stability and population growth over and above subsistence levels (Dickinson 2006a, 70). Indeed, the palatial region of Messenia appears to have experienced the most severe depopulation, with very little visible activity in LHIIIC (Mountjoy 1999, 301; Dickinson 2006a, 55, 90). Some other areas, either non-palatial regions or those more distant from palace centres seem to have fared somewhat better with little or no apparent population decline, and in Achaea and the Ionian islands an increase of population is often suggested (Foxhall 1995, 244; Dickinson 2006a, 64). The situation was different from region to region, and it may be that what we are often discussing is actually the tendency of groups to utilise particular aspects of material culture that remain visible to archaeologists. While this in itself

marks an important difference in habits, it is difficult to talk with any certainty about population levels.

Population decline itself could have had many natural and anthropogenic causes, although mass emigration has been rejected here for many reasons (see chapters 2, 3 and 5) and has been rejected by Snodgrass (2000, 365) and others. In a discussion concerned with Archaic Greece, but possibly relevant here, Vink (1996-1997, 9) has shown that during their peak period of founding colonies, archaic Corinth and Eretria also produced their biggest settlement assemblages. Argos did not found colonies but experienced a decline in settlement remains, and at Athens too, settlement did not seem affected by the founding of colonies (Vink 1996-1997, 9). Declining settlement evidence need not therefore suggest mass emigration and significant settlement evidence need not preclude emigration. However, ancient claims that colonies were founded by individual cities are probably unreliable, since they appear to be later constructions with a political bias, and the archaeology indicates a more complex picture (Osborne 1996, 8-17).

Warfare may be a better explanation, since it can explain the destruction and abandonment of settlements and the relocation of population (Vink 1996-1997, 10). According to Vink (1996-1997, 3 Fig. 1, 15), the continuity demonstrated in settlement assemblages at archaic Corinth, which contrasts with discontinuities at Argos, Athens and Eretria, may be explained by the fact that it seems not to have been involved in a war. Warfare and instability may also render agriculture, or habitation of certain areas, difficult or dangerous. That

warfare or conflict on some level was normal in the LBA, and perhaps became endemic, at least in some areas, may possibly be suggested by the destructions outlined above. Changing settlement patterns can also be explained by economic changes (Vink 1996-1997, 15), and changing social practices can also cause a population decline, as can factors such as plague. The political fragmentation of collapse must in itself have been an important factor affecting population levels.

Conclusions

This chapter has attempted to give a brief outline of the culture and archaeology of late Mycenaean Greece in the palatial period. Particular attention has been paid to the palatial culture that developed and the socio-political complexity of different regions in Greece. Communities in LBA Greece, while sharing aspects of material and presumably also non-material culture, chose to organise themselves in different ways. While in a few areas it is evident that quite powerful local kingdoms with literate bureaucracies and links overseas developed, and that the palaces at their centres made efforts to integrate outlying sites into their sphere of interest, there appears to have been a mix of more and less significant local centres throughout Greece. While buildings at sites such as the Menelaion and Kanakia are not regarded as true palaces, presumably they shared at least some of the 'central place' functions of palaces, while sites like Krisa and Teikhos Dymaion also may have functioned as the royal or chiefly centres of a different kind. In areas such as Elis, there is no positive evidence (as yet) for any major local centre of any kind (Dickinson *pers.comm.*). It is plausible that the bigger and more complex

polities may have sought to extend their reach across the Aegean, although the existence of 'diplomatic' links between Mycenaean kingdoms and the Great Kingdoms of the east, the Hittites, and to a greater degree Egypt, remain largely speculative.

The frequency of destructions has also been touched upon, and a list of LBA destructions given. While destructions were normal, and need not indicate anything other than rebuilding, the widespread destructions of major centres, palatial and non-palatial, around c1200 does suggest that they were in some way targeted. Finally, the apparent decline in population after c1200 was discussed and some possible causes outlined; further discussion of survey evidence is given in chapter 5.

Inevitably many of the issues touched upon in this chapter are controversial and difficult to offer firm conclusions about. The approach taken here therefore has been very deliberately not to attempt to suggest more certainty in conclusions than the evidence itself warrants. While this may be frustrating, caution is thought preferable to overconfidence.

2 Collapse theory

Introduction

The collapse of societies has long been of interest to scholars, historians and the wider public, although Yoffee (2006, 132) notes that many of the beliefs people have had about collapse are extremely questionable, in particular those based on long held notions about the organic growth, maturity and decline of societies. Undoubtedly the increased close study of the collapse of societies has brought about a new recognition of its complexity. Archaeologists and social scientists have also committed more effort to researching collapse and this is marked by the increasing number of both general studies of theory and specialised studies of a variety of regions, not least the LBA Aegean. This chapter will examine the nature of collapse theory in recent archaeological and historical writing by critically reviewing key publications and attempting to discern trends in recent thought on collapse. Both general works on collapse and works referring to specific examples will be considered. This offers a broader theoretical context for the discussion of the collapse of palatial Mycenaean society, which follows in chapter 3, as it will be seen that many themes are of direct relevance.

Notable publications in the recent discourse on collapse that will be reviewed here are as follows: Tainter (1988) *The Collapse of Complex Societies*, which offers a general theory making use of evidence from a number of societies, Yoffee and Cowgill (1988), *The Collapse of Ancient States and Civilizations*, an edited volume containing papers on theory as well as specific case-studies

of collapse in Mesopotamia, of the Maya, Teotihuacan, the Roman Empire and the Han dynasty, Ponting (1996), *A Green History of the World: The Environment and the Collapse of Great Civilizations*, and Diamond (2005) *Collapse: How Societies Choose to Fail or Succeed*, which makes use of various historical societies, as well as contemporary data. Most recently, Yoffee (2006) has returned to the subject of collapse in *Myths of the Archaic State: Evolution of the Earliest Cities, States, and Civilizations.*

While the above publications have been selected as significant contributions to the general theory of collapse, it is also possible to examine recent publications in specific areas that offer useful comparative models for the Mycenaean collapse and which also help to identify changing trends in the archaeology and theory of collapse more generally. Since a study of any particular collapse may be assisted by an interdisciplinary approach considering other examples of collapse, it is considered useful to review some of the most recent studies. These concern the collapse of the Western Roman Empire, for which there are three recent publications, Heather (1995 and 2005)[5] *The Fall of the Roman Empire: A New History*, and Ward-Perkins (2005) *The Fall of Rome and the End of Civilization*, and the collapse of the Lowland Classic Maya. The Maya collapse has produced an enormous literature, but three recent publications are worth considering here: Lucero (2002), Gill (2000) *The Great Maya Droughts* and Webster (2002) *The Fall of the Ancient Maya: Solving the Mystery of the Maya Collapse.* Both of these fields are relevant here, not for direct

[5] Heather's 2005 book sets in a wider context his views on the collapse of the western Roman Empire already presented in an important article in 1995.

similarities between material or other aspects of culture, but because of the approaches taken to their collapse.

Tainter 1988

Joseph Tainter's *Collapse of Complex Societies* (1988) is a frequently cited volume in publications concerning collapse (Diamond 2005, 420). Tainter (1988, 4) defines collapse first of all as 'a rapid, significant loss of socio-political complexity' and is thus concerned with collapse as a political process, albeit often one with consequences in other areas, such as economics, art and literature. He distinguishes collapse from weakness or decline by its rapidity, taking no more than a few decades, with a substantial loss of socio-political structure. Societies that experience collapse must have been developing towards or have achieved a level of complexity for one or two generations. Complexity is regarded as a variable on a scale and is indicated by reference to such things as size, specialisation of groups and individual roles and the mechanisms of integrating these (1988, 23). He usefully identifies (Tainter 1988, 4) a number of manifestations of collapse that may be evident to differing degrees in collapsing and collapsed societies, and these will be returned to in the concluding chapter:

- A lower degree of stratification and social differentiation
- Less economic and occupational specialisation, of individuals, groups and territories
- Less centralised control; that is less regulation and integration of diverse economic and political groups by elites
- Less behavioural control and regimentation

- Less investment in the epiphenomena of complexity, such as monumental architecture, artistic and literary achievements etc
- Less flow of information between individuals, between political and economic groups, and between a centre and its periphery
- Less sharing, trading and redistribution of resources
- Less overall coordination and organisation of individuals and groups
- A smaller territory integrated within a single political unit.

Tainter's task is to identify a general explanation of collapse, since it is a recurrent feature of human societies (1988, 5). In order to do this, he selected 20 case studies ranging from the Western Chou, the Western Roman Empire, the Mycenaeans, Minoans and Hittites, to New World societies, including the Lowland Classic Maya, and some African examples (1988, 5-18). Brief narratives of their collapses are given and some general features of pre- and post-collapse disintegration are usefully noted (based on Renfrew 1979). As descriptions of potential scenarios, these seem applicable to various example of collapse, including the Mycenaean, and include:

- Breakdown of central authority and control before collapse, signalled by revolts and provincial breakaways. Declining government revenues may result in an ineffective military. Foreign challengers become more successful. The population become more disaffected as the hierarchy seek to meet new challenges by mobilising resources.
- Following disintegration, central direction fails and the centre loses prominence and power. It may be ransacked and abandoned. Smaller petty states emerge in formerly unified territories, of which the former

capital may be one. These states may contend for domination entailing a period of perpetual conflict.

- Law and the protection of the populace are eliminated and lawlessness may prevail for a time before order is ultimately restored. Monumental construction and publicly supported art largely cease to exist.
- Remaining populations in urban or political centres reuse architecture though there is little new construction and this is mostly concentrated on adapting existing buildings. Larger rooms may be subdivided, flimsy facades built and public space converted to private. Previous forms of ceremonialism may be continued although this is attenuated and former monuments are allowed to decay. Residents may use upper rooms and allow lower ones to deteriorate. Monuments may be used as sources of building materials and when buildings become uninhabitable, the residents move rather than reconstruct it.
- Palaces and central storage facilities may be abandoned, along with centralised redistribution of goods and foodstuffs, or market exchange. Long distance and local trade may be markedly reduced and craft specialisation end or decline. Local self-sufficiency meets subsistence and material needs. Local styles in widely circulated goods such as pottery also become more common due to decreased regional interaction. Portable and fixed technology (e.g. hydraulic engineering systems) reverts to simple locally, rather than centrally, maintainable forms.
- There is often rapid reduction in population, whether as cause or consequence. Both urban and rural populations decline and many

> settlements are abandoned concurrently. The level of population and settlement may decline to that of previous centuries or millennia (after Tainter 1988, 19-20).

These points are descriptive rather than explanatory, and Tainter's general thesis for explaining collapse can be encapsulated in the following key points (1988, 194). Societies exist as problem solving organisations that require energy for their maintenance. Increasing complexity carries with it increased costs per capita, while increasing investment in socio-political complexity as a response to problem solving often reaches a point of declining marginal returns. At some point maintaining or increasing complexity become unsustainable and collapse to a simpler level follows. In essence then, Tainter's explanation is an economic one.

While Tainter's book remains an often-cited work on collapse (e.g. recently by Dickinson 2006a; Diamond 2005; Demarest *et al.* 2004a), contains much useful discussion, and presents useful summaries of the indicators of collapse, it has not been received uncritically. Bowersock (1991) does not find its arguments persuasive for various reasons. In particular the accounts of individual societies and Tainter's reliance on older modern historical sources rather than archaeological evidence for his description of the Roman Empire, used as a major example of his theory of declining marginal returns (Tainter 1988, 148-152), are problematic. As a result, there are factual errors and questionable generalisations, and these must affect any evaluation of his general thesis. This is also the case in his description of Mycenaean society,

which is extremely brief and general, and relies on older sources and perspectives. It also contains the basic error that settlement increased in the south-west Peloponnese after the collapse; this should surely read north-west, on the assumption that there was some movement into Achaea (Tainter 1988, 10-11).

Blanton (1990) is also critical of Tainter's conclusions, as well as other specific points. He suggests (Blanton 1990, 422) that some examples given by Tainter actually run counter to his thesis, and this in what Bowersock (1991, 120) suggests is the most original chapter of the book. For Tainter's examples of declining marginal returns in agriculture (Tainter 1988, 96-97), he also notes an over-reliance on one not unbiased publication, and a failure to mention conflicting data (Blanton 1990, 422). The shrinkage to survivors in post-collapse societies is also questioned and it is noted that in fact in the Valley of Oaxaca, 'regional boundaries were more open during periods of relative political decentralization' (Blanton 1990, 422).

In fact, Tainter's own description of China following the Western Chou collapse (1988, 6) also seems fairly positive, 'the period of conflict produced some of China's major philosophical, literary, and scientific achievements... In addition to many technical and economic achievements, Chinese political thought in its classical form emerged during the worst of the breakdown'. It is also unclear from this example how rapid the process of collapse was, since weakening control is observed by Tainter over two centuries from 934BC ending in the death of the last Western Chou emperor and the sacking of his

capital in 771BC (Tainter 1988, 6). However, according to Tainter, collapse should take place within a few decades (1988, 4), to distinguish it from the vague and difficult concepts of weakness and decline, yet this is unclear here.

Furthermore, complex political organisation still existed since, as Tainter himself points out, the Chou capital was moved east and the Eastern Chou dynasty resided there for over 500 years, although he observes that 'Chinese unity effectively collapsed' (Tainter 1988, 6). This example of collapse seems to rest entirely on the notion of the political unification of some regions under the Chou and its later breakdown, but this may in any case have been overstated. Higham (1996, 60) states 'the Zhou, even during the apogee of their power, never directly controlled the area nominally within their boundaries. Rather, great overlords who acknowledged the supremacy of the central ruler, exercised considerable local sway which, as the Eastern Zhou progressed, saw the development of increasingly independent states.' Of course, for Tainter collapse is, in the context of his book, solely a political phenomenon, but it seems clear at least that the identification of a collapse is sometimes a question of perspective or degree.

As noted, Tainter's approach is essentially that of an economist, and both Myers (1989, 1065) and Bowersock (1991, 119) observe that it follows the processual approaches of Renfrew and Sabloff. He focuses on internal mechanisms of change, and argues that economic explanations come closest to success in explaining collapse (Tainter 1988, 90). He dismisses mystical explanations out of hand, those that rely on intangibles or biological analogy,

but allows some partial merit to those that rely on resource depletion, new resources, catastrophes, insufficient response to circumstances, other complex societies, intruders, conflict/contradictions/mismanagement, social dysfunction, and chance concatenation of events, so long as they can be subsumed into a more general explanatory framework (Tainter 1988, 90). Diamond (2005, 420) notes that Tainter remained sceptical about collapse due to resource depletion because he thought people were unlikely not to adequately manage their environmental resources. However, individuals and groups do in fact make bad decisions, which may have serious effects on society, and this is in fact a well-known and widely discussed phenomenon in organisational theory (Diamond 2005, 420).[6] Despite this favour shown towards economic explanations, claimed as 'structurally and logically superior' (Tainter 1988, 90), Blanton (1990, 422) notes that 'in the numerous instances of collapse... there is not one calculation of an average or marginal product. Instead, declining marginal returns to 'investment in complexity' are invoked simply when convenient, based largely on circumstantial evidence'.

While Tainter should be commended for attempting to collate data from and compare the collapses of many societies, it is perhaps inevitable that for specialists his accounts will be unsatisfactory, and this casts doubt on his general thesis. Any attempt to produce a monolithic and universally applicable explanation of collapse is perhaps misguided, and does not pay attention to locally specific and unique situations. Furthermore, the insistence on the

[6] Sutherland 2007 (especially 70-72) presents a wide-ranging discussion of irrationality. Although archaeologists and historians often argue for, or attempt to interpret evidence as reflecting rational behaviours, individuals and groups often act irrationally for a number of reasons. Environmental mismanagement is only one of many such behaviours.

primacy of economic explanations may reflect a modern concern, and is not universally accepted. It must also be said that Tainter's hypothesis suffers from an overreliance on process and structure, as opposed to personal agency and individual decision making, which cannot be easily dismissed as key factors in the operation of societies, as well as unique historical circumstances. Similarly, the specific processes of collapse, how a society actually breaks down to a simpler level, seem secondary to advancing the particular thesis. Nevertheless, the work remains a stimulating contribution to collapse theory, in particular in its summaries of the features of collapse, and contains much that is of value in stimulating further thought.

Yoffee and Cowgill 1988

This edited volume contains eleven essays, five of which are case-studies on Mesopotamia (Adams 1988; Yoffee 1988b), Mesoamerica (Culbert 1988; Millon 1988), the Roman Empire (Bowersock 1988) and China (Hsu 1988), while the others are theoretical and deal with the notion of collapse (Yoffee 1988a), the role of barbarians (Bronson 1988), the role of organisation (Kaufman 1988), continuity (Eisenstadt 1988) and a review chapter (Cowgill 1988). This publication, like that of Tainter (1988) is aimed at an academic readership yet rather than aim to produce any unified or general theory of collapse the focus on case-studies and theoretical issues contributes to the discourse on collapse. Indeed, Myers (1989, 1066) notes of Tainter (1988) and Yoffee and Cowgill (1988) that 'the current state of the discipline seems to favor the more modest aims of case studies.'

Two chapters in particular highlight the difficulties of understanding collapse (Yoffee 1988a; Cowgill 1988). The concept is usefully divorced from 'the death of great traditions (civilizations)' which should be 'dissociated from the failure of ancient states' (Yoffee 1988a, 18). Thus there is an implicit acknowledgment of certain kinds of continuity despite collapse, and the volume focuses on political fragmentation (Yoffee 1988, 15). The collapse of great traditions is considered to be rare, and is exampled by Mesopotamia, which experienced several political collapses following brief periods of unity. Collapsed societies such as those of the Lowland Classic Maya were part of great traditions which still exist in some areas, despite numerous political and other changes. Rather than offer a detailed review of each chapter, it is perhaps of most use to select aspects of Bronson's chapter on the role of barbarians in the fall of states, Kaufman's comments on collapse as an organizational problem and Eisenstadt's contribution on collapse and continuity for comment.

Barbarians

Bronson discusses the role of barbarians in collapses and adopts a usefully vague definition of states as 'any organization that exercises major political authority in a relatively centralized and institutionalised form over a relatively large and contiguous population,' which is therefore widely applicable and contrasts with his 'barbarians,' who are simply members of non-state political units in contact with states (1988, 196, 200). He also offers a definition of collapse that does not include coups or dynastic changes nor gradual shifts in socio-political habits or the ethnic make-up of elites, but is made up of necessarily rapid, simultaneous and substantial changes in such features

(Bronson 1988, 197). While admitting that states may fall for internal reasons, Bronson disputes the necessary relation of declines with falls, since often the definition of states in decline is quite subjective and his caution of the danger of circularity in arguments for decline and fall is important. Did all states that collapsed experience decline first? It may certainly be tempting for historians to identify a decline where a subsequent collapse is apparent, but whether this was in fact the case is often unclear.

Bronson (1988, 198-200) rightly notes the difficulty of identifying decline and its causes. Particularly valuable are his comments on the evident corruption, inefficiency and manifold shortcomings of bureaucracies and governance during periods when no decline is identified, for example Restoration Britain. Signs that can be taken to indicate decline can thus equally be present in rising states, on their way to dominance. In particular, these factors are difficult to quantify and not clearly connected to collapse (Bronson 1988, 199). This sounds a note of caution against essentially economic theories of collapse, like that of Tainter (1988), in that what may seem like 'waste in government' or other seeming inefficiences may not even be relevant. 'Explanations that focus on bureaucratic bloat are also... suspiciously relevant to modern partisan political beliefs and should be received with caution on those grounds alone' (Bronson 1988, 199).

More significant for Bronson (1988, 199) are the importance of successful military campaigns, and perhaps the avoidance of unsuccessful ones, and the effects of these on increasing and reducing resources. As for internal causes of

collapse, he notes that these include economic recessions, revolution and civil wars (Bronson 1988, 200). External reasons include environmental and epidemiological factors, as well as warfare. In Bronson's (1988, 213) view, barbarians are not the main cause of collapse, which he argues probably derive from internal factors and the actions of other states.

Moving on to his essential argument about barbarian involvement, Bronson (1988, 201) suggests that it is inherently plausible that barbarians could have played a role in the collapse of states because they have so often been associated with them: 'large numbers of barbarians are much more likely to be conspicuously present at the time of death than either natural catastrophes or demonstrably unusual levels of inefficiency and corruption.' However, it is not clear whether this is always a cause rather than an effect of collapse, and in fact a range of scenarios is possible. To this end, he suggests four self-explanatory analogies for barbarians: 1) vultures, 2) jackals, 3) wolves and 4) tigers. Of these, only the tigers unilaterally cause the demise of states. Many examples of successful barbarian groups are discussed by Bronson and their potentially complex and successful organizational capacity and military skills and abilities is well emphasised (Bronson 1988, 202-213). It is clear that barbarians could field large armies, as well as be a match for the armies of states, although while Bronson correctly considers the conventional wisdom that 'the theoretical advantage of centralized over noncentralized polities is neither invariable nor insuperable' to be wrong, there are some problems with his argument.

He contends that it is cheaper for barbarians to assemble an army than for states (Bronson 1988, 204). While states have a variety of costs and expenses to account for, a barbarian war chief, on the other hand 'has none of these concerns. His initial expenses are minimal and the cost of maintaining his army non-existent' (Bronson 1988, 204). However, this surely underestimates the practical and logistical difficulties that would be encountered, especially by large groups, and the failure of a leader to ensure the well being of his group would undermine his authority. Dickinson (2006a, 47) has noted a lack of historical analogies for large groups of pirates able to live by raiding alone. A lack of institutionalised power structures could also provide an added destabilising factor for chiefs to contend with, and they might have greater problems ensuring loyalty while they were away. Furthermore, the other factors Bronson adduces are more concerned with advantages that barbarians may have had in defending themselves against states, rather than in attacking them, and there is a rather dubious focus on acephalous barbarian societies, which in any case he resolves in favour of the advantages centralised states probably had in mobilising resources for their defence (Bronson 1988, 205).

Another major problem is the rather sweeping characterisation of barbarians as raiders, who are 'poor and aggressive' which is 'a logical consequence of their outside status' (Bronson 1988, 200). This conjectures a psychological motivation for barbarian behaviour based not on barbarians' self-image but on an externally ascribed identity, one which is essentially a modern convenience following ancient habits. This kind of view follows from classical portrayals of barbarians, which owe as much or more to defining the in-group rather than

realistically describing different peoples. It is doubtful that entire populations of barbarians viewed themselves only in comparison to those in state societies. This follows also for the notion that barbarians were somehow inherently warlike or aggressive in a way that those in states were not. Inhabitants of states like Sparta were trained and prepared for war and even in Athens most male citizens would have served in a military capacity at some point. But neither barbarians nor citizens need have been necessarily aggressive in any unusual sense. This, and many other characterisations of barbarians, seems rather based on notions culled from literary stereotypes. Also, while it is quite clear that the article mainly refers to the Western Roman empire and its barbarians, it seems that it presents no widely applicable general model, since there are too many specific variables concerning the nature of individual states and their neighbours. The only fair conclusion is hardly a surprising or novel one, that neighbouring populations of differing levels of complexity and/or lifestyle may have engaged in different levels of mutual raiding and warfare when it seemed appropriate to do so and this may have caused or contributed to collapse in some cases.

Organisation

Kaufman (1988, 219) follows up one of the points made by Bronson (1988), noting that the 'disintegration of overarching governmental organizations was a prominent feature of the process' of collapse and thus may have been a cause of collapse, although admitting that this is difficult to identify or to differentiate as cause or effect. In the first place, Kaufman (1988, 220-223) describes the role that government, or the organising power, would have played

in the daily life of individuals and society and emphasises the role of local figures: 'in ancient polities most regional and central officials were in all likelihood distant, dimly perceived figures, while community leaders were familiar, lifesized individuals.' Nevertheless, more centralised institutions played a key role in fostering the development of local areas in a diverse range of roles, from infrastructure projects such as dams, roads and irrigation to maintaining some level of security for agriculture, trade and communication to take place (Kaufman 1988, 220). The maintenance of these systems benefited the population at large and at all levels (Kaufman 1988, 221). An interesting point is made that, although central and local authorities would need to work together on specific projects, individuals:

> would not usually see direct evidence of the central structures and might therefore have regarded most of the governmental services and constraints he encountered as local. And indeed, local leaders may well have had broad discretion in spheres not of concern to the central authorities (Kaufman 1988, 221).

This surely reflects a reality in the way that many ancient 'governments' operated, with a set of specific reactions, demands and targets, rather than broad policies, and on a much smaller scale. Indeed, it is unfortunate, if a necessary inconvenience, that some word other than government could not have been employed.

Organisational problems would have led to various scenarios, which are classic statements of collapse theory (Kaufman 1988, 221). The pattern usually involves some kind of problem, e.g. with water, which leads to decreased

productivity and a decrease in revenue. This in turn leads to increased taxes or demands for production and labour so that the central authority can maintain its revenue and try to solve the problem. Productivity and revenue may increase, but the cost is a greater burden on the workforce and their increased resentment. If revenue does not increase and the problem is not solved, the central authority continues to experience difficulties that, in turn, make it less able to cope with further difficulties. In this scenario a spiral into catastrophe is envisioned, with each problem setting off other problems in turn that may lead to conflict between local areas themselves and between local and central authorities (Kaufman 1988, 222). This is reminiscent of Bronson's (1988, 197) analogy of a collapsing society as a broken machine, flying apart. Furthermore, it is argued that this would probably cause a breakdown of security, with neighbouring peoples and states 'tempted to invade and seize territory, making war a normal state of affairs in the border regions,' and these themselves will have had a knock-on effect both on agricultural production and exchange, thus Bronson's scavengers could play a role (Kaufman 1988, 222-223; Bronson 1988, 213).

As for causes, Kaufman (1988, 223-230) identifies both exogenous and endogenous factors. These are familiar enough, with exogenous factors including natural disasters, environmental problems, factors outside their boundaries, such as trade partners finding new resources, or the disruption of trade through war. Endogenous factors include problems in the internal dynamics of political structures, such as divisions between or within factions. These could operate on different scales, resulting in civil war or weakness and

inability to govern effectively. Cleavage could also occur between central and local authorities. Since central authorities relied on the cooperation of local authorities, their decision to opt out of the system would have been serious. Indeed, these are plausible interpretations of the failure of the imperial system in the Western Roman Empire (see below and chapter 4). In fact, Kaufman (1988, 230) is describing a systems collapse: 'any of the factors could have occurred independently in the first instance, but once it did, its effects rippled through the polity in question, tripping other factors until they were all activated and reinforced each other.' This inevitably suggests that polities that may appear to be quite resilient, stable, and long lasting, may actually have been quite fragile systems, and also that chance may have played a considerable role in their long-term survival (Kaufman 1988, 233). This fragility applies more to the 'overarching political entities' rather than the component parts that comprised them, which may have been more 'unified and durable,' due to the increased damage that cleavage could cause to the system as a whole (Kaufman 1988, 234).

Collapse and Continuity

Implicit in Kaufman's argument is that local organisations are more stable than supra-local power structures and this suggests that collapses may entail a degree of continuity, at least in the fact that some social relationships will continue. Despite the fact that many relationships may be broken, particularly on a supra-local level, this is certainly often the case. Eisenstadt (1988, 243) has offered a particularly interesting discussion, concentrating on the social process at work in collapse, which he suggests 'presents... not only the end of

social institutions, but almost always the beginning of new ones.' In fact, collapse can be seen as the reformulation and restructuring of social boundaries (Eisenstadt 1988, 237).

Emphasised in this study are the nature and dynamism of social processes and social systems, which are neither static nor natural, and are always 'in the process of being constructed' (Eisenstadt 1988, 237). Within any given society, the population may be involved in a variety of different systems, political, economic, social and ideological, and while these systems are connected they may change in different ways and at different speeds (Eisenstadt 1988, 238). These may be bound together through mechanisms of social control and integration 'by a combination of organizational structures (e.g. bureaucracies, legal symbols) and systematic restructuring – through processing of socialization, communication, and public and semi-public rituals' (Eisenstadt 1988, 239). Elites are characterised as 'institutional entrepreneurs' who 'compete to articulate the interests of the various groups, and so to mobilise their resources (Eisenstadt 1988, 240-241).

This setting of social processes is also a venue for competition and conflict, which is inherent because of the individuals involved and the variety of 'principles of cultural orientation' within it (Eisenstadt 1988, 241). Eisenstadt (1988, 241) thus identifies the possibility that 'antisystems' may exist or arise and that these may sometimes be focussed around secondary elites. The 'Stoic resistance' in imperial Rome may constitute one kind of antisystem while emergent Christianity may represent another kind. These do not necessarily

present problems, they could in fact act to galvanise an elite system, but they may 'constitute, under propitious conditions, important foci of systemic change' (Eisenstadt 1988, 241). This can happen when power shifts occur or demographic patterns change, or through contacts with other external groups, such as barbarians or trading partners. What actually happens is not reducible to a pattern but depends on each specific society. Prime amongst Eisenstadt's (1988, 242) concerns, therefore, is that 'the investigation of collapse in ancient states and civilizations really entails identifying the various kinds of social reorganization in these types of societies and so viewing collapse as part of the continuous process of boundary reconstruction.'

Discussion

The three chapters discussed above present some very useful ideas for considering collapse. In particular, it is useful to highlight the nature and interaction of elites and governance and to set this within a dynamic social context that accepts a degree of faction, divided loyalties and competing motivations as normal (Wright 2001). The possible existence or development of various kinds of antisystem and their possible effects should also be borne in mind. It is also useful to note how problematic the notion of decline actually is; in particular it is difficult to identify without a degree of subjectivity or circular arguments. It is significant that what are sometimes identified as features of decline may be present in successful societies, or societies that do not or at least have not yet collapsed.

It is clear however that while these chapters sometimes seem to suggest generally applicable models for or descriptions of collapse, in fact this is rather difficult given the variety of specific factors involved, and indeed this is recognised by the authors. While processes and even causes and effects may appear to be superficially similar in any specific examples of collapse, they may actually have been very different in terms of what was experienced by people at the time. Attempting to create general models may thus be unwise since from the perspective of archaeology and history they tend to ignore the specific and real experiences of individuals and groups, which culture specific research rightly retains as its focus.

Ponting 1996

Ponting's book is aimed at the general public rather than a scholarly audience and its aim is to look at world history from a 'green' perspective (1996, xiii). It does not claim originality and, as with Tainter (1988), suffers from the author's reliance on secondary material referring to various societies and periods from remote prehistory to modern times. As a result, there are many generalisations that scholars may find questionable, such as the reliance on forced labour to create the great monuments of antiquity, such as the great pyramids of Egypt (Ponting 1996, 269). An example, pertinent to the Aegean and Egypt, concerns the Sea Peoples (Ponting 1996, 86). It is argued that a fall in food production, caused by lower Nile flood levels after c.1150BC caused political and social problems due to difficulties in supplying food to non-producers, the army in particular. This occurred at a time when Egypt was under external pressure from the Sea Peoples, who were attempting to settle in the Delta. However, the

Egyptians defeated the Sea Peoples attacks, so the specific point that Ponting is trying to make is unclear. It cannot be doubted that food shortages have caused problems in many societies, but before a generalised model can be created the extent to which particular societies were made up of dependent non-producers requires more detailed analysis. In the LBA Aegean, as in many other preindustrial societies, it is likely that the greater part of the population were subsistence farmers.

Ponting distances himself from the position of Tainter and emphasises the effects of resource depletion and environmental mismanagement. He cites the difficulty in balancing the need for production and the ability of the environment to sustain intensive agriculture over long periods (Ponting 1996, 87). This imbalance, he argues, caused overstretch and, focussing on Mesopotamia, he follows a similar line to Tainter: 'the demands of an increasingly complex society began to overstretch the capacity of the agricultural base of society to support the large superstructure that had been erected. In the end, the unwanted, and unexpected, side effects of what at first appeared to be solutions to environmental difficulties became problems themselves' (Ponting 1996, 87). Responses to these problems seem to have involved internal revolt and strain as the elite attempted to siphon off more produce for themselves. Ponting (1996, 87) further comments that there were only a few cases of the collapse of whole societies, for example the Maya, or wholesale abandonments of land. However, few Mayanists would now be so sweeping in their view of the Maya collapse, and Ponting's views follow Culbert (1973 cited in Ponting's Further Reading, 409; see also Culbert 1988),

who argued for overstretch and the failure to maintain an appropriate population-subsistence balance, thus increasingly intensive agriculture failed to cope with unexpected stresses.

While Ponting usefully sets out to use such examples to focus present day readers on the effects humans have on the environment, his conclusions as concern historical collapse are sometimes vague. He reminds us that environmental degradation may, but does not always, lead to social breakdown (Ponting 1996, 401). When it does happen, it may be prolonged and with regard to Mesopotamia, the example cited above, he concluded that 'the decline and eventual collapse... came about gradually over at least a thousand years' (Ponting 1996, 401). It is difficult to understand in this case, over such a prolonged period of time, exactly how this is to be regarded as an example of collapse, and as noted above, it is difficult to accurately identify decline, as opposed to chronic corruption, inefficiency or irrationality (c.f. Yoffee 2006, 140-160). Although undoubtedly correct in focussing attention on the relationship between the environment and human societies, there is no generally applicable theory developed.

Diamond 2005

Diamond (2005) combines the approaches of Tainter (1988) and Ponting (1996) in producing a popular yet scholarly work that attempts to incorporate theory, as well as detailed and up-to-date case-studies of ancient societies, and that has an environmental focus. For Diamond, collapse means 'a drastic decrease in human population size and/or political/economic/social complexity,

over a considerable area, for an extended time' and amongst other societies, he cites the collapse of Mycenaean Greece as an example of a fully-fledged collapse (Diamond 2005, 3). Although the book was intended to focus on anthropogenically caused environmental damage, he admits that he knows of no 'case in which a society's collapse can be attributed solely to environmental damage: there are always other contributing factors' (Diamond 2005, 11). However, despite the comment that 'it would be absurd to claim that environmental damage must be a major factor in all collapses... It's obviously true that military or economic factors alone may suffice' (Diamond 2005, 15), the arguments detailed in the book retain an environmental perspective to which other factors are connected. Accordingly, he devised a five-point framework of factors that may contribute to environmentally caused collapse (Diamond 2005, 11):

- Environmental damage
- Climate change
- Hostile neighbours
- Friendly trade partners (all of which 'may or may not prove significant for a particular society')
- Societal responses to environmental problems.

The first two factors essentially cover human caused environmental damage and natural climate change. The third suggests that 'collapses for ecological reasons or other reasons often masquerade as military defeats' (Diamond 2005, 13). This may be because a weakened society is no longer able to feed an army to hold off its enemies and is defeated and collapses. Among possible cases

both the Western Roman Empire and the Mycenaeans are cited, though Diamond (2005, 14) draws no definite conclusions here. The fourth factor refers to the notion of interlinked systems, whereby if a friendly trade partner is weakened or becomes hostile, this will have a knock-on effect, especially if imports are essential for maintaining either physically or ideologically necessary systems. The fifth factor concerns society's responses to problems, environmental or otherwise, in which some societies respond successfully whereas others do not. This final factor, involving human choice and agency may be regarded as an improvement on theories that are restricted to processes.

Although the case-studies are regarded by some as the most valuable part of the book (e.g. Tainter 2005) they are not entirely beyond bias. Since Diamond's intentions are to provide a warning to the modern world (Qirko 2005), he tends to place more emphasis on incorporating research that supports this into his syntheses. Like Ponting (1996, 1-7), he begins his case-studies with the story of Easter Island (Diamond 2005, 79-119), an often used parable of potential global catastrophe through misuse of finite resources and failure to respond appropriately. Indeed, like Ponting (1996, 7), he makes this metaphor explicit (Diamond 2005, 119). Kirch (2005) agrees that the historical outline is fairly accurate and that Diamond is right to conclude that through population increase and clearance of woodland for agriculture, coupled with environmental fragility, 'the Rapa Nui gradually followed a pathway leading to societal terror and collapse not because they were 'eco-vandals' but because they lacked critical understanding of how their island's environment functioned and thus failed to take steps which might have averted their fate'. This is

perhaps not surprising since Diamond makes use of Kirch and his colleagues' research (Kirch 2005). However, other perspectives on Easter Island are equally admissible. Rainbird (2002) sets Rapa Nui in the context of other Pacific islands, and argues that ecodisaster and collapse really took place after European contact, pointing to the evidence for successful subsistence strategies up until 1804. Nevertheless, the comments of Qirko (2005) are pertinent when he states that 'Diamond's own analysis makes it clear that, in many cases, societies are not choosing at all but, rather, are at the mercy of processes which they can have no awareness of control over.' Diamond's point of seeking to explain the role of choice is thus vague since it is not clear why some societies do succeed while others do not and what role choice plays in this (McElreath 2005).

Another criticism levelled by several scholars concerns Diamond's choice of the society as a unit of analysis (Demeritt 2005; Hornborg 2005). Hornborg (2005, S94) notes an absence of the role of cultural specificities and social structure, which must play a part in shaping historical processes and events. Cultural groups like the Maya are treated as units, where more rightly they were independent, if interlinked, polities within a culture zone, and it is unclear how or to what extent these units could choose without more reference to their internal dynamics (Demeritt 2005, S94). On a comparative level, it is also questionable as to how appropriate or useful analogies between Maya kings and modern American CEOs or the Bush administration can be, although they serve the author's purpose of engaging the reader (Hornborg 2005, S94). Tainter (2005, S98) in particular criticises the book for a lack of argumentation,

especially when Diamond is unable to prove that the environment has been the central factor in societal collapses. This failure is significant, since it was the author's express aim. Apart from that, Diamond's contribution to the scholarship on collapse is perhaps most useful for its synthesis of recent research on collapsed societies and for its readability, rather than any real theoretical advance in this field.

Yoffee 2006

Yoffee (2006) has contributed most recently to the literature on collapse and suggests specific ways in which collapse must be studied. He suggests that in studying the rise of societies, social change is seen as 'a succession of levels of holistic sociocultural integration' and collapse 'requires that levels be broken down into institutional groupings of partly overlapping and partly opposing fields of action' which allow for instability as well as stability in social institutions (Yoffee 2006, 131). Thus, the forces that drive social integration must be seen as reversible and subject to flux and this concurs with the notion of social groups as potential cleavage points. Yoffee (2006, 132) notes that collapse theorists have challenged the view that human systems tend to persist or expand, and have argued that early states were not necessarily in harmonious adjustment, nor victims of extraneous disturbances or developmental deviations.

These are valuable perspectives which emphasise that emergent and early states were not necessarily stable or long-lasting socio-political structures and equally that there was no necessary need for external factors to cause their

collapse or failure to endure indefinitely. He further emphasises that early states were little understood by their occupants and were far from perfect institutions; they functioned with 'a good deal of bungling and by generating considerable conflict' (Yoffee 2006, 132). Thus states could exist whilst exhibiting what some would identify as factors of decline. Furthermore, faction and conflict of interest must be seen as dynamic factors in the rise and collapse of societies, and the level of objective individual or group awareness of how societies functioned should not be overestimated.

Perhaps most importantly, Yoffee (2006, 134) notes that when collapse occurs, it does not constitute 'a total institutional breakdown'. This conclusion he reaches by suggesting that a neo-evolutionary paradigm, one that suggests holistic changes to institutions in the rise of complexity, and therefore total collapse, is inadequate (Yoffee 2006, 134). Particular issue is taken with Flannery's (1972) notion of hypercoherence, where a centralized authority bypasses local authorities and creates new social possibilities. These mechanisms can become 'pathologies' that disrupt stable systems by creating special systems, which then cannot cope with the same success as the previous stable systems. Total failure through hypercoherence happens when any part of the system fails because all the systems are so 'integrally connected' (Yoffee 2006, 135). Other similar notions are also dispensed with.

On the other hand, Yoffee sees utility in Simon's notion of 'near-decomposability' (Simon 1965). Complex systems, it is argued, are hierachically composed of many stable lower and intermediate level units that

have strong horizontal but weaker vertical connections. In collapse, it tends to be those more strongly linked intermediate and lower level, or localised units, that predated the novel higher-level units, which survive. Post-collapse continuity, or regeneration, not necessarily identical to the collapsed form, is clearly possible, since there are social units present that can form new hierarchical arrangements (Yoffee 2006, 137). This perspective seems useful and plausible, as, in the absence of the total annihilation of the population, and thus every social system, there must be continuities, and these are bound, in some way, to involve existing relationships.

In contrast to an explicitly systems based approach, which may tend 'to invite increasingly elaborate abstractions,' Yoffee (2006, 137) suggests that our task in investigating collapse is 'to delineate the patterns of social roles and identities that were created, manipulated, reproduced and reconfigured in ancient states and to understand the circumstances in which identities were altered and even relinquished.' Thus his approach rightly takes more account of the actions and motivations of individuals and groups as well as accepting that times of collapse may be appropriate for changes in constructing identities and involves appreciating that there are inherent structural tensions within states, for example between rival factions. However, such investigations may encounter problems in terms of evidence, as is the case in postpalatial Mycenaean Greece, although it seems possible at least to observe some changes in material expression.

So for Yoffee, collapse is never total, rather it means 'a drastic restructuring of social institutions, usually in the absence of a political center' (Yoffee 2006, 134). This is seen within the context of early states as experiencing tension between centre and periphery. Centres seek to detach political action from peripheries, made up of aristocracies, kin groups, peasants, craftspeople and merchants, which try to retain local autonomy. At the same time, centres recruit from peripheries independently of traditionally ascribed roles while at the same time, in order to command resources, it must offer something to peripheries, for example juridical and cultural systems or increased territory or goods (Yoffee 2006, 138-139). Stability occurs when this balance is successful for each group but instability and collapse may ensue when this balance is disturbed. This may happen if peripheral needs or the needs of specific groups are not met and the centre is unable to secure resources from the periphery. Thus centralised institutions may collapse when no longer supported by the periphery. Yoffee (2006, 140) notes that one critical factor for stability is 'the transformation of a loyal and personally ascribed cadre of supporters into a bureaucratic hierarchy in which organizational self-perpetuation is subservient to the establishment of political goals'. However, success in creating such a system does not guarantee its maintenance in the long term, which must be achieved by creating widespread support for the system and constantly meeting a range of demands from different groups.

Yoffee's views are certainly important for considering collapse, and although others have adopted different approaches, his may be considered as representing important progress. He does not advance any general theory to

explain societal collapses, but rather offers a useful way of approaching the phenomenon, in particular as a social process, whilst offering constructive contextualising ideas about the notion of ancient societies themselves. These ideas will be returned to in the subsequent chapters.

Recent approaches to specific examples of collapse

The section above has focused on notable contributions to the wider field of collapse studies. This section will briefly examine some very recent approaches to the collapse of the Western Roman Empire and the Lowland Classic Maya.

The Western Roman Empire

One trend in the scholarship of the end of the Western Roman Empire noted by Ward-Perkins (2005, 3-10) is the increasingly positive characterisation of the period, which has traditionally been defined by violence, decline and fall. He notes that Peter Brown, in defining the period of Late Antiquity, from the third to eighth centuries AD, suggested that catastrophe and decay could be omitted from the history of the period (Ward-Perkins 2005, 4). The language used to describe the period has also changed and terms such as decline and crisis, common in the 1970s, are now rare and have been replaced by transition, change and transformation. Although these are shifts in terminology, they undoubtedly affect perceptions of collapse and characterisations of historical processes and events.

The role of barbarians has also changed, with violence and disruption transformed into peaceful accommodation (Ward-Perkins 2005, 5). As representative of this, he cites Walter Goffart (1980, 35) in particular, who stated that 'what we call the Fall of the Western Roman Empire was an imaginative experiment that got a little out of hand.' He further notes that much of the violence and catastrophe once associated with the collapse has been erased by scholars who have expanded Goffart's views, with comments about barbarian settlement occurring 'in a natural, organic, and generally eirenic manner' (Mathisen and Shanzer 2001, 1-2, quoted in Ward-Perkins 2005, 10).

While rightly accepting that there are positive aspects to this revisionism, Ward-Perkins seeks to challenge this position, stating that 'the coming of the Germanic peoples was very unpleasant for the Roman population, and that the long-term effects of the dissolution of the empire were dramatic' (2005, 10, 180-181). In order to do this, he demonstrates through texts, that violence and the threat of violence was a reality of the period (Ward-Perkins 2005, 13-31). He also successfully demonstrates a significant decline in material living standards, showing that the relatively widespread prosperity of Roman times, indicated by such things as the common use of roof-tiles, even on low status agricultural buildings such as sheds in Italy, disappeared in the fifth and sixth centuries, when only a few elite buildings used tiles (Ward-Perkins 2005, 95, 109). Pottery in the west also shows an equivalent picture of declining material standards, especially when compared to the development and diffusion of new styles in the east (Ward-Perkins 2005, 88-93, 104-108). Handmade and badly

fired wares became the norm, even for elites, and pottery was no longer produced or traded on a large scale in Britain and Spain (Ward-Perkins 2005, 104). Other examples also reinforce the picture of significant material decline.

Ward-Perkins (2005, 117) suggests that the collapse meant no mere recession or reduction of the fourth century economy, but a qualitative change to a 'very different and far less sophisticated entity.' He further suggests that in many areas the level of complexity fell to a lower level even than in pre-Roman times, with only isolated examples amongst elite groups (Ward-Perkins 2005, 117-120). None of this happened at one particular point of collapse, but at different times and rates across the Western Empire (Ward-Perkins 2005, 123). In North Africa and Italy there may have been periods of decline and recovery, whereas in Britain complexity seems to have reduced much more rapidly with the withdrawal of Roman power in the early fifth century (Ward-Perkins 2005, 128). It seems that different trajectories were possible, and that decline need not have been inevitable everywhere.

According to Ward-Perkins (2005, 136), the collapse of the ancient economy was due to overspecialisation, a complex and interlinked system that was fragile and not adaptable to change. Skilled manufacturers, a sophisticated network of exchange, and a large number of consumers were all necessary for the successful continuation of this system, as was the maintenance of an infrastructure of coins, roads and so on. Disruption of parts of this system and the end of security meant its failure and a reversion to local skills and self-sufficiency.

This may also have had an effect on population (Ward-Perkins 2005, 138-139). Survey reveals a change from a densely settled Roman landscape to one that was only sparsely settled in post-Roman times and evidence also seems to show declining urban populations. Rightly, however, Ward-Perkins (2005, 142) notes that survey evidence is not always a reliable guide to population, since settlements and buildings or signs of habitation may have become archaeologically invisible.

He suggests that there was no inevitability about the fall of the Western Empire in the fifth century, and emphasises the number and scale of military expeditions, some of which were successful, but all of which show that major projects were still possible (Ward-Perkins 2005, 57-58). Had particular individual events turned out differently, the history of the period could have been very different. Nevertheless, this suggests a fragility to the overarching socio-political and economic system engendered by the empire. This fits with the notions of early states describe by Yoffee, and mentioned above.

Peter Heather (1995; 2005) has also focussed on the fundamental role of Hunnic and Germanic population movements and local reactions to them in causing the collapse of the Western Roman Empire. Like Ward-Perkins, he argues that this process was one that took perhaps a century to work through and affected different areas at different rates. He specifically develops three arguments (Heather 1995, 37). Firstly, he argues that the presence of the Huns on the fringes of Europe caused the Germanic invasions of AD376 and 405-08

and that this provides a coherent explanation of Rome's frontier problems at this time. He then links this with the eventual deposition of Romulus Augustulus, since the invasions and their after-effects eroded the power of the state in a variety of ways, both economically and in terms of prestige and loyalty to the state. When the state could no longer provide, local Roman elites sought to deal with the new political realities created by groups with different political agendas, siding with the new powerful military groups or asserting themselves militarily and politically (Heather 1995, 22, 37). The third aspect is the disappearance of the Huns as a political force, leaving the Western Empire without outside military assistance (Heather 1995, 38).

Heather (1995, 38-39), in opposition to Tainter (1988, 128-152), thus sees the collapse of the west as a 'foreign policy crisis' that created a new and different internal political situation to which local elites accommodated themselves and, like Ward-Perkins, suggests that without these events, there is 'not the slightest sign that the Empire would have collapsed under its own weight'. Collapse in this case depended on the effect of particular historical events and the way in which people adapted to the results of these events.

The Lowland Classic Maya

Differing views of the Lowland Classic Maya collapse still abound, thus only a brief and selective overview of recent mono- and multi-causal approaches will be given here. What has particularly transformed the study of the Classic Maya is the decipherment of their writing system, which reveals a mass of

specific historical data that sheds light on political and military history and Maya culture and society (Fash 1994, 193-195).

Lucero (2002) has focussed on the role of water control as a central aspect of political power in major Maya centres, with kings monopolising artificial reservoirs and water sources. She argues that a reduction in the amount of water as a result of climate change undermined the position of rulers and the institution itself, and that this caused the political collapse of regional centres (Lucero 2002, 820). Her argument is particularly interesting because it offers a model that explains the variability present in the Maya collapse. Major royal centres such as Tikal, Calakmul and Caracol relied heavily on artificial reservoirs while their elites projected their ability to guarantee water supply and used this to maintain their position and receive tribute (Lucero 2002, 818). When the water supply declined, much more intensively populated royal centres were abandoned, but this did not necessarily affect hinterlands, where subsistence practices were maintained. This decline of royal centres in turn affected secondary centres, whose rulers participated in regional politics by interacting with other rulers in alliances, marriages, exchange and warfare (Lucero 2002, 819). At this level, there were varying responses to the collapse of major centres; closely linked secondary centres were largely abandoned by the ninth or tenth centuries AD, while other secondary centres asserted their independence and even prospered and the hinterlands of some collapsed secondary centres also continued in use. Some major centres continued without royal ideology. Tertiary centres tended to survive the collapse of major centres (Lucero 2002, 820).

This argument usefully applies evidence of climate change or shifting weather patterns to political ideology, showing how changing circumstances may have affected the royal ideology of leaders at major centres and the knock-on effects of their collapse on smaller centres that were reliant on different elite maintenance strategies. It is notable that royal ideology at major centres and at some closely connected secondary centres, where it was most closely associated with water control, ended, while different royal ideologies sometimes continued at secondary centres, and hinterlands and some other centres continued without royal ideology.

Lucero (2002, 821) also gives a modified picture of population change during and after the collapse, usually thought to have been a period of devastating decline and migrations. She suggests that, in the hinterlands, many people may have reverted to (or continued) building non-platform houses, invisible in the archaeological record, and that there may have been some migration. New forms of community level organisation developed, and various regions, such as Petén Itza Lakes area, remained inhabited, although with new traditions (Rice and Rice 2004). Furthermore, her approach is deliberately only intended to provide a 'general organizational framework' rather than a model which fits and explains all situations of political history (Lucero 2002, 814).

Gill (2000) has focussed on megadrought as the single exogenous cause of the Maya collapse. He argues that a series of megadroughts, prolonged periods of severely reduced rainfall, can be associated with Maya collapses around

AD150-200, the Classic 'hiatus' of AD530-590, the Classic collapse of the seventh and eighth centuries and the postclassic abandonment around AD1450. In the Classic collapse, he envisions crops failing and even rivers and lakes drying up, 'when the rains failed, the reservoirs dried up, and the people had no water to drink' (Gill 2000, 271). Much scientific evidence has been interpreted to suggest droughts associated with these collapses. Hodell *et al.* (1995) used temporal variations in oxygen isotope and sediment composition in core samples from Lake Chichancanab, Mexico, to construct a history of climate change in central Yucatan. They suggest that the period from AD800-1000 was the driest period of the last 8000 years (Hodell *et al.* 1995, 393). More recently, data derived from the titanium content of sediments in the Cariaco Basin of the southern Caribbean has been interpreted to show an extended dry period, punctuated by more intense multi-year droughts around AD810, 860 and 910 (Haug *et al.* 2003).

However, this evidence is problematic in its explanation of the Maya collapse, since it ignores the complex link between large scale and local climatic events (Webster 2002, 243). The evidence is used to explain the collapse in the wetter more fertile and better watered southern lowlands, but cannot at the same time explain why areas much closer to the sources of evidence (central and northern Yucatan), much drier and more difficult to farm, appear to have prospered precisely at the time of the alleged drought (Webster 2002, 244-245).

Webster (2002) accepts that drought may have played some part in Maya history, but in contrast to Gill, he offers an excellent multidimensional, multi-

causal and thus more realistic view of the Maya collapse, or collapses, which occurred over a long period of some 200 years. He emphasises that the Lowland Classic Maya 'never embraced some monolithic political or cultural identity that was everywhere vulnerable to some sudden disastrous disruption...' and that 'the patterns of collapse or decline are so different from one place to another that no single, simple cause will ever explain what happened to the Classic Maya...' (Webster 2002, 294). This is supported by Demarest (2004) and others (see papers in Demarest *et al.* 2004a).

The interrelations between regions and sites are also highlighted, so that collapse becomes 'a communicable phenomenon: what happened to one kingdom or population or local ecosystem affected others in non-random ways' (Webster 2002, 294). Webster also notes, importantly, that conclusions about the Maya collapses are conditioned by the nature of the evidence at particular sites, which may or may not comprise epigraphic data, palaeoenvironmental data, settlement and architectural data (Webster 2002, 294). Thus any apparent explanation is affected by the data from which it is inferred and differences in evidence may obscure similarity in causes; meanwhile while similar data may lead to similar conclusions even though actual causes of collapse could have been different. This is a notion applicable in a wide range of collapses.

Webster (2002, 327ff.) himself suggests that three factors in particular triggered collapse. The most important of these was the vulnerability of the Maya population to the deterioration of agricultural and other resources (Webster 2002, 328-337). While sometimes being reasonably productive

agriculturally, there were risks, bottlenecks and limitations, related to cultural and environmental factors. Webster (2002, 330) notes that several areas experienced deforestation and erosion and experienced periodic cycles of growth and abandonment before the Classic collapse and that mobility was an early solution to this. Assuming even optimal weather conditions and land quality, Maya agriculturalists could produce only small surpluses. A range of natural hazards such as climatic variation, drought, hurricanes, locusts and plant disease also prevented optimal conditions, though Webster (2002, 331) notes that as long as populations were relatively low, the Maya survived these.

Agricultural intensification, the use of marginal land, increased land use and decreased fallow time, terracing and drained fields have all been suggested as solutions and adaptations, and Webster (2002, 335) suggests that what may have been successful short-term solutions to coping with population increase were unsuccessful in the long-term, increasing production shortfalls and decreasing environmental quality. This is somewhat similar to Culbert's (1988) notion of overshoot, where an increasing population creates increased pressure on resources and carries an inherent risk if factors such as climate, land quality or other environmental factors change. Inevitably some of these factors do change since human expansion affects its local environment.

Webster's (2002, 338-343) second factor is warfare and competition. Evidence for the role of warfare in the Lowland Maya area has increased dramatically and displaced the once widely accepted notion of the peaceful Maya and warfare probably played an important role in the collapse of classic Maya

polities (Webster 2000, 112). Warrior ideology was central to royal ideology and more Maya fortifications are known than for Central Mexico, an area often considered 'warlike' (Webster 2002, 167, 224-228). Details of particular campaigns and the political events that they were embedded in are revealing, particularly about dynastic and inter-site relations and how these could cause instability and promote endemic warfare and collapse. Warfare seems to have provided political and economic benefits for rulers and to have concerned control over territory as well as more directly expressed elite concerns for tribute and elite prisoners. It is also possible, depending on the agricultural situation, that demands for foodstuffs were made between groups and this may have been a cause of warfare (Webster 2002, 341-342). The political landscape of the Late Classic Maya was thus extremely fragmented, made up of polities of varying sizes and influence. This fragmentation, and the often-violent rivalries that resulted, may have contributed to restrictions in land use in border or disputed areas, disrupting agriculture and exacerbating population pressure in other areas.

The third factor that Webster (2002, 343-347) cites is the failure of kingship. Like Lucero (2002), Webster notes the importance of the ritual role of rulers in maintaining 'balance, order, and success in all those aspects of life that affected his people, most importantly food production.' Such an ideology results in the cultural response of 'who' not 'what' is to blame (Webster 2002, 345). This is most clearly demonstrated at Copan, where royal ideology and kingship ceased, but noble families survived for a considerable time, some up to 200 years (Webster 2002, 311, 345). In northern Maya areas kingship continued,

although the style and ideology of kingship was significantly different from that of Classic Maya (Webster 2002, 346). Webster (2000, 112) has associated the failure of classic kingship with increased warfare in the late Classic period.

Webster successfully uses case-studies of individual sites to show different patterns of collapse at different sites and regions and with a range of causes and eschews a mono-causal and monolithic approach. Furthermore, he and Lucero convincingly show how problems could have had socio-political consequences, in particular on elite ideology, and take into account the variety of evidence, rightly suggesting that environmental factors may have been important in some instances but were not the exclusive or universal causes of collapse.

Conclusions

It is evident that collapse theories have undergone significant shifts, not least in the admission of the complexity of the problem. It is possible to identify some current trends. Monocausal explanations and explanations that fail to take account of individual and group agency are no longer widely accepted and there has been a failure to produce meaningful generally applicable explanatory models, as opposed to models which describe the effects of collapse. Gill (2000) is a notable exception to this trend in proposing a monocausal exogenous reason for the collapse of the Classic Maya, but his conclusions and the evidence on which they are based are widely disputed. While Tainter's work of 1988 remains widely cited, specialists have been largely critical of its specific conclusions, and this may be due to the attempt to create an all-embracing collapse hypothesis.

That collapses share common traits is not surprising since they involve the fracturing of certain established socio-political and economic relationships, which may lead to the formation of new identities and relationships. It is likely enough that similar kinds of changes may be found in the material record of collapsed societies. Even so, some continuity may often be apparent, particularly amongst the population at large and more locally based elites, and this may be based on preexisting social relationships.

Most pervasive in recent approaches to collapse is the rise of environmental considerations, especially climate change, whether natural or anthropogenic, although it has a long history in certain fields, particularly in Maya and even Mycenaean studies. A recent article even seeks to show that abrupt natural climatic events were the major cause of societal collapse in general, suggesting that only in the present and future will anthropogenic climate change come into play (Weiss and Bradley 2001). This may be the current fashion, as Webster (2002, 239) notes, owing to an increase in palaeoclimatological data and a current global focus on climate and environment abuse, although Diamond (2005), who sought, and failed, to demonstrate a strong link between collapse and the environment, admitted the importance of other factors. Barbarians also continue to play a role in collapse, but this is now seen as a more complex process of interaction between different groups at different levels in society. They are also seen as specific to particular collapses, rather than universal to all. Many scholars rightly focus on human systems, as well as responses to pressures environmental and otherwise.

Yoffee (2006) stressed the importance of appreciating the fluidity of identity and maintaining a successful balance in societies between centre and periphery. He demystifies collapse and sets it firmly in the context of social change and group interaction. Such themes were discussed successfully by Heather (1995; 2005) and Webster (2002). Heather (1995) noted the presence of new powerful groups within the Western Roman Empire, which led to new responses and behaviours amongst local elites, thus collapsing the centralised imperial system. Webster (2002) pointed to the failure of kingship and the social responses to that, which resulted in new political realities and ideologies. These are the kind of features of collapse and continuity identified by Eisenstadt (1988). Heather (1995; 2005) Webster (2002) and Yoffee (2006) offer multi-causal and integrative theories and explanations of collapse which rely on the interrelation of specific factors including individual and group motivations and the competition and tensions inherent in maintaining a particular system.

Another important conclusion that can be reached concerns the time span in which collapses occur. Heather (1995) notes that the processes of the collapse of the Western Roman Empire took over a century to play out, while Webster (2002) sees the Maya collapse as a drawn out and varied process taking place over some two centuries, though more rapidly in specific regions or at individual sites. This inevitably suggests the awkward conclusion that collapse is often a process, something criticised by Bowersock (1991). While this may be conceptually difficult, we must remember that societies are not monolithic

or static entities, but comprise many dynamic groups and tensions. Instances of collapse are both events and parts of processes, since their effects cannot be separated from the societies they are embedded in. This exposes the difficulty in terminology noted by Cowgill (1988) and suggests that the ('negative') process of collapse, or political fragmentation, must be seen within a context that admits ('positive') change and transformation. While Ward-Perkins (2005) criticised the overly positive spin placed on the fall of the Western Roman Empire and successfully demonstrated that a much poorer material world followed, both he and Heather (1995, 38) note that this political fragmentation must be seen within such a context of transformation.

Many of the themes and issues raised in this chapter will be taken up in chapter 3, which will discuss and analyse theories of the collapse of the Mycenaean palatial societies, and chapter 4, where the Hittite, Maya and Roman societies will be used to offer analogies for processes at work in the Mycenaean collapse. It will be seen that similar problems of the interpretation of collapse confront Aegean archaeologists.

3 Theories of Mycenaean collapse

Introduction

Schliemann's description (1880, 56-57) of the history of Mycenae suggests some continuity between the Mycenae of Agamemnon and the classical polis that sent 80 men to Thermopylae and, with Tiryns, 400 to Plataea, before the population was dispersed by the Argives in 468BC. In archaeological terms, he argued that the 'Agora', the area now known as Grave Circle A, was kept clear until 468BC and that debris only started accumulating in it after this date (Schliemann 1880, 341). However, he followed Pausanias and Strabo in observing a decline in the fortunes of Mycenae after the death of Agamemnon, suggesting that only 'a fearful political revolution and catastrophe can have prevented Orestes from becoming king' (Schliemann 1880, 56). According to Pausanias, the causes of this could have been the Dorian invasion or, Strabo, the return of the Heraclidae. Schliemann (1880, 343-344) later emphasised his belief that the presence of royalty at Mycenae ceased at the Dorian invasion, which he suggested happened much earlier than its traditional date of 1104BC.

In this early interpretation of the history of LBA Mycenae, Schliemann attempted to combine the varied Greek traditions, from Homer to later classical travel writers, in which he placed great faith (Schliemann 1880, 334ff.), with archaeological evidence, to produce a meaningful narrative. Thus a picture of continuity and change was established. Such attempts have continued to this

day, although, as it will be argued, they may, for several reasons, have proved misleading.

As work continued revealing the Mycenaean culture of LBA Greece, it became clear that significant changes occurred in its later stages, indicated by a seemingly simultaneous series of destructions at major sites. In the 1890s, Tsountas (quoted in McDonald 1967, 106-107) could write:

> The palaces... were destroyed by fire after being so thoroughly pillaged that scarcely a single bit of metal was left in the ruins. Further... they were never rebuilt;... How are we to account for this sudden and final overthrow otherwise than by assuming a great historic crisis, which left these mighty cities with their magnificent palaces only heaps of smoking ruins? And what other crisis can this have been than the irruption of the Dorians? And their descent into the Peloponnese is traditionally dated at the very time which other considerations have led us to fix as the lower limit of the Mycenaean age. Had that migration never been recorded by the ancients nor attested by the state of the Peloponnese in historic times [generally an area of Doric dialect], we should still be led to infer it from the facts now put in evidence by the archaeologist's spade.

For Tsountas, Mycenaean influence continued in some ways, although the coming of the Dorians 'marks the beginning of a long dark ages,' from some time in the twelfth century (quoted in McDonald 1967, 108, 208, 209). Petrie's work in Egypt synchronised the destruction of the Greek palaces with the Nineteenth dynasty, and provided a date of around 1200, with a subsequent

'Dark Age' lasting until around 700 (Morris 1997, 97). This basic interpretation has in one form or another remained a commonplace of Mycenaean and Greek archaeology to the present day and forms an omnipresent backdrop to all theories of Mycenaean collapse (McDonald 1967, 407-417; Eder 1998).

The series of destructions and abandonments around 1200BC, already noted by Tsountas but now including sites discovered subsequently, mark what has been labelled the 'Catastrophe' (Drews 1993, 4) or most recently the 'Collapse' (Dickinson 2006a, 24). Destructions at major sites were accompanied by the loss of the limited literacy that was a feature of the palatial bureaucracies, which had formed the 'organizing centres of this civilization' (Dickinson in Hornblower and Spawforth 1996, 1014), and other palatial features including the distinct architectural form of the palaces themselves and the frescoes that decorated them (Sherratt 2001, 214-215). Skills in creating jewellery, seal engraving and ivory carving, as well as the production of glass and faience objects seem also to have been lost (Deger-Jalkotzy 1998a, 122). These are taken to indicate the collapse of the palatial system.

Nevertheless, it has become increasingly clear that despite these losses, there was no immediate 'dark age' and the culture that followed the collapse remained Mycenaean (Morris 1997; Rutter 1992, 70; Dickinson 2006b, 116; Thomatos 2006). Twelfth century Mycenaean society, though, was fundamentally different in many ways. Primarily, it lacked the degree of social complexity that the palaces had represented in some areas, although there was

much variation in developmental complexity throughout the Mycenaean culture zone (Dickinson 1994, 78; Deger-Jalkotzy 1996, 726-727) as well as in Mycenaean material culture (Rutter 1992; Dickinson 2006b, 115) during the palatial era. The clearly elite palaces, their organisation and structure, their ability to mobilise and command resources for large and impressive architectural works, and their influence over wide regions, had no comparable twelfth century successors. Other areas, however, did not have these systems to lose.

Quite what the collapse meant for those who experienced it is difficult to grasp. A variety of perspectives is possible and much depends on the chosen context, for when considering such matters, it must be remembered that individual responses may have varied widely and any modern characterisation of the period is subjective. Much of course depends on the theory of collapse that is supported; social, physical and psychological responses to catastrophic environmental phenomena may have differed significantly from responses to invasion or internecine warfare. Although they may be difficult to avoid, it must be borne in mind that modern characterisations are limited, subjective and potentially misleading.

Despite these problems, some scholars have ventured such comments about the collapse. Drews (1993, 3) maintains a negative view of collapse in the Aegean and around the eastern Mediterranean, suggesting that, it:

> was one of history's most frightful turning points. For those who experienced it, it was a calamity... the twelfth century ushered in a dark

> age, which in Greece and Anatolia was not to lift for more than four hundred years... Altogether the end of the Bronze Age was arguably the worst disaster in ancient history, even more calamitous than the collapse of the Western Roman Empire.

Others, for example Muhly (1992, 70) and Deger-Jalkotzy (1996, 728), have seen the collapse in a more positive light, and their views are more politicised. For them, the collapse removed what they characterise as a heavy-handed and stifling palatial bureaucracy. Others note that it at least allowed different areas to prosper (Sherratt 2001, 234-235).

Rutter (1992, 70) states that 'despite some major shifts in how people were distributed in the landscape and what was probably a substantial decline in the overall population, the Aegean world weathered the actual palatial collapse of ca.1200BC well enough' and Thomatos (2006) has recently demonstrated this for the LHIIIC period, although it has been noted that perhaps the significance of these shifts for people can be underemphasised. Although positive aspects can be found, the negative aspects of such a disruption should not be underestimated, for the destructions and abandonments represent events that were experienced by people and surely represent death, violence and dislocation.

Of course, the years before c.1200 may also have been difficult, depending on the specific causes of collapse. It is notable that while LHIIIC Middle is now seen as highpoint of postpalatial Mycenaean culture (Thomatos 2006), LHIIIC Early may have been a more troubled and unstable time, while attempts at

recovery and continued destructions and abandonments throughout the 12th century are thought to mark it generally as a less stable and perhaps more militaristic period than before (Dickinson 2006a, 58-61, 69-72). It is likely that in some areas the significant destructions, movement of population away from previously occupied sites and changes in the structures and traditions of life resulted in negative psychological effects, which may have been exacerbated by living in the ruins of largely abandoned and run-down areas (Dickinson 2006a, 66, 72). It is highly significant that the palace system that had operated for perhaps two centuries was not reconstructed, even in LHIIIC Middle, and Deger-Jalkotzy (1998a, 122) states that 'the Mycenaeans of LHIIIC were either not able or not willing to uphold the high cultural achievements of the preceding periods.'

The purpose of this chapter is to review the main theories developed to account for the collapse itself. Several syntheses dealing with these exist, notably Drews (1993, 33-93), Rutter (2000b) Shelmerdine (2001a, 374-376) and Dickinson (2006a, 43-57), but all support different reasons and differ in their final conclusions. Drews (1993, 97-225) sees changes in warfare as responsible, Rutter (1975; 1990) argues for invaders from outside the Aegean, Shelmerdine (2001a, 376) favours systems collapse, while Dickinson (2006a, 54-56) notes a variety of likely factors that may have acted in combination.

Explanations should seek to deal with several key questions that determine the nature of the collapse itself, primarily the cause of the destructions and abandonments, and why the palaces were not rebuilt and the system they

represented came to an end while much of Mycenaean culture continued (Shelmerdine 2001a, 376). The theories will be dealt with thematically here, since many authors have taken similar approaches, but even so these divisions are broad, since many explanations include reference to more than one factor and it is considered unlikely that one single factor was to blame. A degree of overlap may be inevitable.

Economic Explanations

Economic arguments for the collapse of palatial society have been and remain popular. A variety of approaches have been adopted and two main styles of argument appear. The first strand is based on external trade factors, the second on the internal organisational style of palace states themselves. To both these approaches other factors are usually added, such as the actions of particular groups, the climate or the occurrence of natural disasters. Often with these additions, an economic argument is extended into a hypothesis of system collapse, where problems in one part of society affect the whole, so this will merit discussion here. It may be noted initially that these approaches suggest that scholars hold quite different views of the palace societies themselves and their success, which inevitably affects any conclusions they make concerning the collapse. There is also a danger in arguing backwards from the collapse to suggest that it was somehow inevitable or probable, and fitting the available evidence into such a model.

Vermeule (1960b) argued that the Aegean trade was disrupted in the late 13th century by the incoming 'Sea Peoples' and that this disruption, more than any

invasion or migration, was responsible for the collapse. However, this assumes that the palaces were reliant on international trade for their survival and that such a disruption occurred. While the palaces may have relied on controlling access to prestige items from overseas to reinforce their own position, it is far from certain that the 'Sea Peoples' of the Egyptian texts were active in the Aegean itself. The Aegean islands, arguably most vulnerable to such problems, do not provide the evidence of disruption that could be expected in such a scenario (Vlachopoulos 1998; see chapter 5 for a fuller discussion of the Sea Peoples and the Aegean islands). It is often argued that there was an Aegean component to the Sea Peoples, but the increased mobility, which is often suggested for post-collapse Greece and the Aegean, may be more a consequence of collapse than its cause (Sandars 1978, 200-201).

Furthermore, if some part of the Sea Peoples were Greek, it is also unclear why they should have undertaken such a systematic destruction of the palaces, and why the palaces did not recover. While it is fair to imagine some battles could have been lost, elites were not above leaving their capitals and maintaining themselves elsewhere until it was safe to return, as the Hittite kings did (see chapter 4). Unless we imagine total annihilation, it is hard to credit this view. Although they are often characterised as 'aggressive, well-armed, efficient and ruthless raiders' (Popham 1994, 228), this owes much to the development of historical factoids about the Sea Peoples rather than the limited evidence itself. This traditional view of the Sea Peoples, their origins and role in the Aegean, based on difficult and often highly circumstantial evidence is highly questionable (Dickinson 2006a, 47).

Even if we accept the existence of piracy and raiding, neither of which are implausible, it has been noted that 'land-raiders and pirates in the Aegean and elsewhere have historically tended to operate in relatively small groups, whose basic tactic would be fast sweeps to gather up what could easily be taken, whether human captives, livestock or portable loot' (Dickinson 2006a, 48). Palaces would have been capable of mounting some defence, and naval arrangements of some kind at Pylos are hypothesised from the Linear B tablets, but would be expected anyway, and even the reference to enemy ships causing great destruction at Ugarit show that this happened because Ugarit's ships and military were in fact absent (Bryce 1998, 367). It is questionable to what extent such groups could have systematically disrupted trade to the extent that palace societies would have been unable to function. Even though the literary evidence highlights the existence of such groups at particular times and places, it might be expected that they were a normal and ever present feature, and in fact they would have been able to make a better living when trade was good. The view of sea borne opportunists in the *Odyssey* in fact suggests that there was perhaps sometimes little difference between traders and pirates (3.72-74).

It seems unlikely that there was any unusual large-scale sea borne disruption within the Aegean, although Amarna Letter 38 shows that elsewhere in the Eastern Mediterranean there was sea borne raiding in the LBA (Moran 1992, 111; Bryce 1998, 56 and n.24). Iakovides (cited in Rutter 2000b) acknowledged this and argued that it was this disruption of trade in the eastern Mediterranean that was responsible for the collapse of the palaces. If it is

accepted that Ahhiyawa was a Mycenaean kingdom, then there is some indication that the Hittites in fact tried to ban trade between a part of Mycenaean Greece and Assyria at some time towards the end of the thirteenth century (Bryce 1998, 343). Depending on the interpretation of this, and if such a ban were successful, it need not have affected the whole of Mycenaean Greece, nor trade that was in the hands of intermediaries. Indeed, many argue that the Mycenaeans themselves did not play a significant role in international trade, much of which may have been in the hands of Cypriots (Sherratt 2001, 222-224).

Sherratt (2001; 2003) has recently made a similar case to Vermeule, though differing importantly in detail. She too suggests that palaces were dependent on international trade and their involvement in trade routes for their survival (Sherratt 2001, 226-227). Unlike Vermeule, however, she suggests that shifting trade routes brought about the demise of palaces. She argues that in LHIIIB Cypriot ships began to operate around the Greek mainland and into the central Mediterranean, and notes that Pylos may have been being actively bypassed in LHIIIB, seeking to retain its involvement in trade routes by extending its control over the Further Province at that time (Sherratt 2001, 232-234). Smaller ships may have cut through the more established trade routes and created new non-palace focussed markets and mechanisms, all of which may 'have increased the edginess of the palatial authorities in general' (Sherratt 2001, 234). To this may be added an increasing tendency for import substitution: the local production of Mycenaean inspired pottery in Italy, as well as possibly Aegean inspired shifts in agricultural practices, Cyprus and the

Levant, as well as oil and textile production on Cyprus from LCIIC (Sherratt 2001, 237; 2003, 40). In this scenario, 'the palaces (even those favourably placed in relation to continuing long-distance routes) simply became irrelevant... they disappeared – or at least were forced to abandon their palatial facades and join the rest of the post-palatial world' (Sherratt 2001, 237).

Another aspect of this argument is concerned with the use of bronze and iron, and the continuation of interregional trade into postpalatial times. It has been thought that increased iron use may have been stimulated by shortages of bronze or tin (Sherratt 2003, 39). However, Sherratt (2003, 41-42) argues that in fact not only was there much more bronze in circulation from the thirteenth century, but also that it 'was circulating more widely, reaching social groups whose access to it had previously been restricted or relatively tightly controlled.' This devaluing of bronze may have stimulated the use of iron as an expensive and rare prestige substance for producing items and shapes that were already produced in bronze (Sherratt 2003, 43-44). Furthermore, it seems that international trade did not stop around c.1200 but continued into the twelfth century and beyond with Cyprus playing an important role linking Greece and the eastern and central Mediterranean (Sherratt 2003, 51; Crielaard 1998).

These changes in the availability and circulation of materials and goods would have had social consequences over the short and longer term, affecting both palatial and non-palatial areas. In fact, Sherratt (2003, 43) sees this reflected in the settlement patterns of parts of Greece, in particular the Argolic, Euboean,

Saronic and Corinthian gulfs, which often have eastern connections reflected in material culture. Crielaard (1998, 198-199) sees this long-distance trade as small scale and loosely dominated by local elites in a world of socio-political fragmentation, which may fit the scenario for the styles of postpalatial rulership and society (discussed in chapter 6).

While some aspects of Sherratt's argument on the nature of the palace societies, particularly in regard to their militarism, lack of 'depth' and development over time and aterritorial nature have been questioned (Dickinson 2006a, 36), the model of change she presents is appealing in accounting for palatial redundancy, with populations believing that 'they could do better without them' because they were offered new opportunities stemming from a wider access to goods and ideas (Sherratt 2001, 238). It is attractive to see the changes marked by the collapse as part of longer term processes which could have caused social changes that palace societies were unable to adapt to or control.

Nevertheless, there are problems with this model; in particular it fails to explain the destructions and abandonments themselves, which feature as the violent and visble indicators of palatial collapse. Rutter's comments (2000b) on Vermeule (1960b), that the theory 'is a better response to the question of why the palaces were not rebuilt than it is to that of who destroyed them and why', also hold good for Sherratt's hypothesis. However, perhaps in this view, the actual destroyers and destructions, which could have happened over some thirty years and for various localised and specific reasons, are less important

than the failure to rebuild in particular locations. This failure represents the redundancy of the system itself, which perhaps could not be completely or even partially reconstructed.

It is plausible too that in such a scenario palaces came into more direct or more serious competition with each other, in an attempt to assert their authority and control access to goods. These conflicts may have been violent and destructive. However, if trade routes were shifting northwards, and some palaces remained favourably placed, as Sherratt (2001, 237) admits, it is unclear why they failed to do better rather than worse than before and why these palaces were destroyed and not rebuilt. Tiryns, for example, appears to do better after the destruction c.1200, expanding in LHIIIC, but it is no longer palatial. Dimini, on the other hand, was destroyed in LHIIIB2 and abandoned early in LHIIIC, in favour of Volos (Adrimi-Sismani 2006). It is unclear why the palace authorities in these places should have fared worse because of a northern shift of trade routes. Furthermore, if, as Sherratt (2001, 234) argues the collapse of the palaces was merely a 'cardboard collapse' why does Messenia, in her words, take 'on the general appearance of an underpopulated backwater'?

In Sherratt's model, it is possible to see the Eastern and Central Mediterranean as a region of potential entrepreneurial opportunity, and the palaces, shippers and middlemen as competitive companies or businesspeople, vying for the trade essential to the maintenance of their lifestyles, and it is indeed, as she admits, a model appropriate to contemporary concerns (Sherratt 2003, 53).

The palaces, and those who ran them, are presented as rather inept businesspeople, who failed to comprehend the complexities of the palatial system, with its administrative habit, which they 'clumsily grafted' onto a client-based warrior society (Sherratt 2001, 238). While this view underestimates the capacity for cultural and intellectual development over some 150-200 years of the palaces' existence (Dickinson 2006a, 35-36), it may be right to suggest that in fact, to continue the analogy, the *wanaktes* and their fellows were bad businessmen, or were in fact largely disinterested in any business beyond simply producing something to exchange for the goods they desired.

For example, many have argued or assumed that the palaces directly exerted great control and influence over the lives of their subjects and the economies of their territories (e.g. Betancourt 2000), but there are considerable problems with this view (Dickinson 2006a, 36-41). There is no evidence to suggest that palaces acted as a 'central clearing house for all goods and commodities manufactured in its territory'; pottery production may not have been directly controlled by palaces and bronzesmiths may have been independent, while agriculture seems to have remained largely unspecialised (Dickinson 2006a, 37). The palaces may have been 'in large part dependent on the contingencies and activities of a surrounding world over which, fundamentally, they had little real control' with international trade carried out at 'arm's length' and with 'little systematic interest in where... goods eventually go to, or who and where imported goods originally come from' (Sherratt 2001, 215, 222, 224). If this is the case, the palaces, confronted with changing geo-economic realities, which

they may not have clearly perceived, and a reduced market for their products, failed to react appropriately, failing to assert themselves in trading terms or to create new viable commodities.

These economic failures were compounded by political failures, specifically the failure to create and exploit a new viable ideology to maintain the prominence of the palatial elites. It is possible to extend this scenario to hypothesise one in which alternative value systems would be created, in order to replace the traditional palatial ideology, with its reliance on some kind of external trade, and militarism could have been part of this. It is these values that may have undermined the palaces' place in society and led ultimately to their physical destruction and that of the system they represented. In such explanations, economics alone is not enough to explain the collapse. However, economic changes would have had effects on other parts of society, and linking these factors can provide interesting scope for argument.

The second kind of economics-based collapse theory emphasises internal, structural problems, which caused an inability to cope, rather than outside forces, although external forces do play a role in these arguments and one might argue that palaces reliant exclusively on overseas trade were also fundamentally flawed institutions in themselves. The influential view that the palaces were the all-powerful centres of a redistributive economy and social system, as mentioned above, goes back to Finley's early analysis of the Linear B tablets, and was followed by Renfrew and others (De Fidio 2001, 15-16). Thus Betancourt (1976, 44) believed that 'the Mycenaean economy seems to

have been particularly subject to destruction' because of overspecialisation, which meant that it 'held the seeds of its own destruction.' Similarly, Deger-Jalkotzy (1996, 716-718) has also argued for the extreme centralisation and specialisation of palace states and their inherent fragility. Betancourt suggested that this, in combination with an overlarge population led to an inability to cope with shocks, such as crop failures (Betancourt 1976, 44).

Some kind of regional agricultural disruption thus initiated a 'systems collapse', where problems in one part of the system affected the operation of the whole (Betancourt 2000, 301). The population, without guidance from 'local, disorganised forces,' would have been unable to cope, resulting in panic, flight and destruction (Betancourt 1976, 44-45). This was despite the fact that he suggested 'the economic structure was directed and administered by the palaces who efficiently coordinated the whole system' (Betancourt 1976, 45). Deger-Jalkotzy (1996, 717-718) further noted that palatial territories were too small to cope with expenditure, particularly in the form of monumental architecture and their ability to support and feed 'the masses of dependent personnel' while the 'general population was suppressed and impoverished by overload of taxes and labour obligations.'

However, there is little to suggest that the population of LBA Greece was ever burdensomely large or particularly impoverished, although population levels are difficult to estimate at any time, unless we take it as argued for by the occurrence of the collapse itself: a dangerous circularity. While Betancourt (1976, 42; 2000, 299) follows a population estimate for Messenia of up to

100,000, many suggest a rather lower figure of up to 50,000 (e.g. Whitelaw 2001, 64), but even if a higher figure is adopted it is not clear that this would be beyond the carrying capacity for the land, especially if the population was at a similar level as in classical times (Betancourt 2000, 299). Rather than impoverishment, a spread of small, undefended sites might indicate 'that a mild degree of prosperity was spread through much of Mycenaean society' (Dickinson 2006a, 40).

It is likely enough that periodic droughts, other weather events and crop failures will have affected Greece from time to time, but one notable factor of classical famines and food shortages, and indeed modern ones, is not the lack of food itself but the failure to use available food to feed the worst off. The effects of any suggested 'regional disruption of agriculture' would also depend on the degree of agricultural specialisation, which Betancourt (1976, 44) believes was extreme, and involved mutual support between palaces (Betancourt 2000, 299) but the evidence for this is extremely limited (Sherratt 2001, 218). Local specialisation seems to be a modern myth and the greater part of the economy, as represented by ordinary settlements, remained unspecialised with a range of crops and livestock (Dickinson 2006a, 37).

Similarly, since the gaps in what Linear B suggests about the economy and organisation have been more closely scrutinised in recent years (Halstead 1992, 1999a and 1999b), it seems most unlikely that the palace societies represented anything as oppressive, totalitarian and monolithic as suggested by Betancourt (1976; 2000) and Deger-Jalkotzy (1996). In fact, recent interpretations of the

Pylos polity suggest that it was not at all state-like, but rather composed of competing lineage units, one of which managed to rise to a position of dominance but that failed in, or was not concerned with, forming an integrated state (Small 1998; 1999). It has even been argued that Mycenaean polities were not truly territorial states, in the wider sense, but were more interested in controlling trade routes (Sherratt 2001). Even if the palace states were territorial, and had far reaching interests in small communities, the role of the palace need not have been negative or problematic. Palaima (2004a, 269-270) recently stated what is becoming increasingly recognised:

> the influence of the palatial center would be felt by most inhabitants of the territory only intermittently and indirectly. Most inhabitants would be directly affected by clan chieftains, local big men (*basileis* in the plural), or even socially and economically prominent 'aristocrats' who occur in the tablets without any title, by personal name only.

In any case, the extreme view in which everything is controlled from the top down, and in which the population at large or even local authorities are unable to function at all without central direction, seems inherently unlikely and fails to credit individuals and groups outside the palace with any sense at all. Similarly, the notion that the palatial form of government, interpreted essentially as an 'oriental' and 'despotic' system, was 'not a suitable kind of government for Greeks' (Deger-Jalkotzy 1996, 728) is reminiscent of a rather romantic, old-fashioned and distasteful view of the inherent superiority of classical Greek culture and the 'Hellenic spirit'. A variety of power structures will have existed with much activity, economic and otherwise relying 'upon

traditional transactional arrangements between individuals and groups' (Palaima 2004a, 286). Thus it must be concluded that these kind of economic arguments are unconvincing.

Environmental Explanations

Environmental explanations of the collapse have a long history and are often mentioned as factors that may have triggered systems collapse or mass migrations or invasions. There are three main environmental hypotheses: drought, climate change and earthquake and these shall be examined here after some brief but necessary introductory comments.

The climate of Greece in the LBA was perhaps slightly warmer and drier than now with zones experiencing typical Mediterranean conditions of long, hot, dry summers and cooler, wetter winters (Dickinson 1994, 25). Sandars (1978, 21-22) pointed out the 'desperate poverty that prevails and the precariousness of life around these shores' and characterised the Mediterranean coastlands as 'subject to periodic drought and endemic want' though while fluctuations in climate and rainfall and poor agricultural years may be constant dangers, a degree of stability and prosperity is nevertheless attested in the archaeological and historical records (Dickinson 1994, 29).

There is also a degree of local and regional variability due to the geographical features of Greece, which create a patchwork of microregions, including islands, mountains and plains. Sandars (1978, 21) notes that the plains experienced the danger of floods, which would have been increased by any

significant deforestation. Nevertheless, the population of LBA Greece were not passive victims of their environment and at Tiryns and possibly on Rhodes measures for flood defences have been found (Maran 2006, 126; Deger-Jalkotzy 1998b, 120). Around Gla, major hydrological work was undertaken, presumably to increase agricultural land (Loader 1998, 101-109). These surely reflect a degree of understanding of local environmental processes and a capacity to deal with them through large-scale construction projects, although that capacity seems to have been lost in the collapse. Use and abandonment of exhausted land, which was then able to regenerate (Dickinson 1994, 25), may also be reflected in the occupation and abandonment of sites, with episodes of punctuated nucleation occurring. Such a settlement pattern may be difficult to detect archaeologically and this may affect interpretations of particular periods, such as the postpalatial period, where such trends could coincide with other evidence.

Drought and climate change

The drought collapse hypothesis was first cogently presented by Carpenter (1966) in acknowledgement of the lack of evidence for any migration into Greece c.1200 and the widespread abandonment of sites as opposed to their destruction (Drews 1993, 77). It became an influential view, particularly in English language scholarship, although it has not been as prominent elsewhere. In this view, around 1200, a megadrought affected the southern Peloponnese, Boeotia, Euboea, Phocis and the Argolid while other areas, Attica, the north-west Peloponnese, Thessaly and the Dodecanese escaped the worst. This was caused by a change in winter winds from wet north-easterly winds to drier

westerly winds and Carpenter suggests that this pattern prevailed for some 300 years. This extended and severe drought inevitably caused crop failures and drove people to leave their homes and attack those places where grain could be stored, while later destructions could be explained by lightning strikes or accidents. A group of environmentalists and climatologists sought to demonstrate that such a pattern of drought was possible and suggested that Greece had in fact experienced similar conditions in winter 1954-1955, which could have lasted longer than one year (Bryson *et al.* 1974).

Critics of this view have suggested that the pattern of depopulation Carpenter suggested does not match what would be expected if his hypothesis was accurate (Desborough 1972, 22: Dickinson 1974). More recent research has also shown that many of the areas Carpenter thought experienced extreme depopulation may not have done so, and increased nucleation of population at particular sites is a valid alternative (Drews 1993, 80). Such may be the case in the Argolid (Drews 1993, 80), and the Euboean Gulf region (Crielaard 2006), while there is also continuity in Phocis (Mountjoy 1999, 745-746; Dickinson 2006a, 76, 179). Certainly the growth at Tiryns and renewed building at Korakou, Midea and Mycenae argues against the presence of any kind of serious agricultural or environmental problems hindering settlement (Dickinson 2006a, 60-61). Deger-Jalkotzy (1998a, 122) also notes that grain from the LHIIIC Argolid was larger and better quality than during palatial times.

Of all the regions of Greece, Messenia seems to have suffered the most significant levels of site abandonment and presumably depopulation, and a localised drought and famine could certainly have played a part in this. Against this, however, is that 'the Linear B texts of Pylos give no clear hint that there is anything wrong in the agricultural system' (Dickinson 2006a, 55). Rather, Drews (1993, 81) notes that quite adequate rations were being disbursed by the Pylos palace to its workers, while the flocks were also thriving. Another problem with Carpenter's hypothesis is that it fails to explain the destructions of sites in the north-west Peloponnese, such as Teikhos Dymaion and in Thessaly at Dimini and Pefkakia, outside the area of his drought. The prolonged nature of this drought scenario also obscures the postpalatial recovery and flourishing now evident in LHIIIC Middle (Desborough 1964; Rutter 1992; Thomatos 2006).

Another problem has been in securing positive evidence for the drought hypothesis (Dickinson 2006a, 55). Various studies have shown conflicting results (Drews 1993, 78). Tree rings in California, falling water levels in Swiss lakes and the behaviour of Himalayan glaciers have been interpreted as showing that there was a hotter drier phase throughout the northern hemisphere from 1400-900 while others have suggested a peak of dryness around 1500 followed by a colder and wetter spell and a little ice age beginning c.1200. As Drews (1993, 79) rightly notes, 'the geographical and chronological frames of reference are here so vast that they do not help very much.' Given the regional variations possible just within Greece itself this is certainly the case, and, even if any of the suggested climate scenarios is generally correct, it is unclear what

significance it would have given the more positive picture of postpalatial Greece now held.

There is some evidence for drought from elsewhere in the Eastern Mediterranean although how this may relate to particular regions of Greece is unclear. There may have been an episode of drought in west central Anatolia, as indicated by tree rings from Gordion dated to around 1200 (Drews 1993, 79). This site is some distance from Greece and its location on the inland Anatolian plateau gives it a somewhat different, non-Mediterranean climate (Macqueen 1986, 11; Bienkowski and Millard 2000, 18, 230-231). Even if there was a drought here around 1200 there is no certainty that one would have affected Greece.

Other evidence suggests that the Hittite homeland may have experienced drought, or at least that for some reason it may have come to rely on imported grain from Egypt and Canaan from the mid-13th century, although the precise nature of and reasons for this arrangement are not known (Bryce 1998, 356-357, 364-365). Libya too may have suffered from food shortages perhaps due to drought towards the end of the 13th century, as the Great Karnak Inscription of Merneptah could be taken to imply. However, this inscription emphasises the wealth and fertility of Egypt, giving this as a reason for the Libyan attack, as well as noting the shipment of grain to the Hittites 'to keep that land alive', and this contrast between the wealth of Egypt and the poverty of its enemies is surely not accidental (Drews 1993, 79). Nevertheless, Hittite texts do suggest

that arrangements for grain shipments were made at a high level and involved the presence of a Hittite prince (Bryce 1998, 357).

Climate change, rather than episodic drought, has also been blamed for the collapse in Greece and the Eastern Mediterranean (Weiss 1982; Neumann 1993). Weiss (1982) followed Carpenter (1966) and Bryson *et al.* (1974) and suggested that drought caused the collapse and widespread population movements, and he even extends this to Anatolia, where he associated it with the Sea Peoples' invasion of Egypt. Neumann (1993, 231), on the other hand, suggested that increased rainfall in central Europe caused more frequent crop failures and that these initiated 'major and violent migrations' from Hungary and central Europe towards the south and south-east as far as the Nile Delta. These migrants, he suggested, could be linked with the destruction of the Mycenaean centres. However, Neumann's (1993, 241-243) acceptance of the veracity of an 'age of 'great migration'' relies on older archaeological works in which mass migration as an explanation of archaeological change was more unquestioningly accepted than it is today. Indeed, the historical reality of any 'migration of the sea peoples' must now be seriously doubted (Drews 2000). Migration is discussed in more detail below.

Although the drought hypothesis as a cause of LBA collapse has been extended from Greece to the entire Eastern Mediterranean, its application on such a wide scale seems problematic in that regional variations are not sufficiently dealt with and there is a lack of positive evidence for drought in Greece. Both older and more recent studies have yet to find any positive evidence of megadrought,

although it is generally accepted that drought may have played some role (Wright 1968; Shrimpton 1987). There may be some evidence for food shortages in some parts of the wider eastern Mediterranean, although no cause is stated in the relevant texts and drought is only one possibility; labour shortages or too much rain could have had much the same effect in disrupting agriculture, as could internecine warfare (Bryce 1998, 357). Models that rely on mass migration are unreliable and there is no evidence for mass migration into Greece around 1200, whatever climatic changes may have occurred in other regions (see below). Drews (1993, 82-83) has also dismissed the notion that a starving, and in his view unarmed, populace could have caused the destructions of major centres, noting that there are no examples of this in modern or ancient times. More plausible is the idea that general unrest and disorder stemming from shortages could have disrupted the functioning of society (Dickinson 2006a, 55). Overall, the drought hypothesis for Greece is unconvincing on a general level as the sole cause of collapse, though no one would deny that drought could have played a role and was undoubtedly a feature of Mycenaean Greek life.

Earthquake

Earthquakes are normal features of life in Greece, lying as it does in an area of high seismicity (Nur and Cline 2000, 45). Papadopoulos (1996, 205) has argued that there is a high probability, based on observations of 20th century seismic data, that destructive shocks may be expected to occur at one or more sites approximately every thirty years, although Stiros (1996, 133) observes that earthquake intensity can be considerably different at nearby sites, and

depends on local conditions. Given that more has become known about postpalatial Greece, with continued habitation now known at many sites notably in the Argolid at Tiryns, it is not surprising that earthquakes, as destruction 'events', have become a popular explanation for destructions at particular sites, regions and also for the collapse itself both in Greece and more widely in the eastern Mediterranean (e.g. Papadopoulos 1996; c.f. Drews 1993, 33). Drews (1993, 44) notes that the earthquake hypothesis fits the changing view of LHIIIC in that continued habitation contradicts a drought hypothesis, and also makes any destructive invasion seem less likely.

Stiros (1996, 129) notes that earthquakes have been used by archaeologists as a *deus ex machina* for explaining destructions and abandonments[7] but has nevertheless presented some criteria by which they can be identified and differentiated from other natural or anthropogenic causes. These criteria, relevant to the following discussion, are as follows (Stiros 1996, 152):

1. Ancient constructions offset by seismic faults.
2. Skeletons of people killed and buried under the debris of fallen buildings.
3. Certain abrupt geomorphological changes, occasionally associated with destructions and/or abandonment of buildings and sites.
4. Characteristic structural damage and failure of constructions.

[7] French (1996, 51) comments that 'archaeologists of my generation, who attended university in the aftermath of Schaeffer's great work (1948), were brought up to view earthquakes, like religion, as an explanation of archaeological phenomena to be avoided if at all possible.'

5. Destruction and quick reconstruction of sites, with the introduction of what can be regarded as 'anti-seismic' building construction techniques, but with no change in their overall cultural character.
6. Well-dated destructions of buildings correlating with historical (including epigraphic) evidence of earthquakes.
7. Damage or destruction of isolated buildings or whole sites, for which an earthquake appears the only reasonable explanation.

Earthquakes at Mycenae

Mycenae itself is situated directly on a series of fault lines and the Argive Plain is bounded by prominent faults (Nur and Cline 2000, 48). Earthquakes and seismic activity must have formed part of the normal experience of living in the area. An earthquake in mid-LHIIIB2 has been proposed, based on the discovery of skeletons found crushed under debris from Panagia House I and the House room north of the Citadel at Plakes (Mylonas 1977, 61 Figure 27, 63; Nur and Cline 2000, 50). The remains of a young man, crushed under debris, were also discovered in the South-west House of the Citadel (Nur and Cline 2000, 49; French 2002, 93). Destructions at this time inside and outside the citadel are therefore suggested to belong to an earthquake horizon and changing construction techniques and strengthening measures may have resulted (French 1996, 51, 54). Affected areas included: the Cult Centre, the South House on the Citadel, the South-west House on the Citadel, House room north of the Citadel, Panagia Houses I, II and III, the House of the Oil Merchant, and possibly the Ramp House, the house of Sphinxes, the House of the Wine Merchant and Petsas' House (Nur and Cline 2000, 49-51). Most of

these buildings show structural deformation in their walls, as well as signs of falling debris, and some show fire damage (see Table 3.1). Even so, French (1996, 54) notes that there is some evidence against earthquake destructions, such as the survival of certain architectural features such as the Lion Gate and the Treasury of Atreus, adjacent to the Panagia Houses. This may be due to the higher quality of their construction, given their functions.

Area	**Period**	**Structural deformations and debris**	**Fire damage**	**Skeletons**	**Reconstruction**
Cult Centre	LHIIIB2	Bulging of walls near entrance to the shrine with idols; fallen roof slates	Yes	No	New wall built over original; original doors walled up and new doors and windows made; reinforcement of wall in nearby room
Cult Centre	Later LHIIIB2/early LHIIIC	Destruction and subsequent fire burning walls	Yes; intense fire	No	
South House on the Citadel,	LHIIIB2	Building collapsed; south-east corner of Room 8 shifted off stone socle	Yes	No	
South-west House on the Citadel	LHIIIB	North and south walls of Room 2 collapsed; large pieces of fallen plaster	Yes	Yes – crushed under burned debris of collapsed north wall	
House room north of the	LHIIIB2 c.1250	Tilted and collapsed walls	No	Yes – 3 adults and a child	

Citadel (Plakes)				crushed under fallen stones in the basement	
Panagia House I	LHIIIB2 c.1250	Collapsed doorway; south wall of Room 2 leaning outward to south; stones and rubble debris including a chimney pot and smashed vessels	No	Yes – a middle-aged woman with skull crushed in the doorway	
Panagia House II	LHIIIB2 c.1250	Wall between Rooms 11 and 12 skewed with north and central sections buckled and shifted off foundations	No	No	Some walls strengthened and renewed while others abandoned
Panagia House III	LHIIIB2 c.1250	Damage weakening house	No	No	Some walls buttressed and reinforced, new walls added and a doorway blocked

Table 3.1 Evidence for Earthquakes at Mycenae in LHIIIB and LHIIIC (after Nur and Cline 2000).

As can be seen from the data summarised in Table 3.1, there is positive evidence of earthquakes at Mycenae, however, the strongest evidence of this is from the middle of LHIIIB rather than later. Nevertheless, a major earthquake has been proposed as the explanation for the destruction c.1200. Iakovides (1977, 134) proposed that a violent earthquake, for which he saw 'firm, incontrovertible excavation evidence,' was responsible for the destruction at

Mycenae at the end of LHIIIB, although this did not disrupt the evolution of its Mycenaean culture, which continued. French (1998, 4) notes a 'massive conflagration that so covered areas of the site that the debris was not removed' and suggested that this marked the end of the palatial administration, although admitting that some areas produce no such evidence of burning. Nevertheless, following Kilian's (1980; 1996) attribution of destructions at Tiryns and Mycenae to earthquake, French (1998, 4) suggested that 'it seems probable that this destruction too is the result of earthquake.' In a later statement French (2002, 135) seems more cautious, stating that the major fire destructions throughout much but not all of the Citadel at the end of the palatial period 'may be the result of an earthquake' though 'at other centres there seems to be more evidence of earthquakes.' The devastation was notable in the Citadel House Area, where nonetheless debris was cleared into terraces and some surviving wall were reused, but French (1996, 135; 1999, 223) suggests that possibly another earthquake caused some of these walls to collapse sealing in LHIIIC Early (Phase IX) material. Even after this, there was further reuse and occupation before the area was abandoned, as in other parts of the site (Taylour 1981, 11; Thomatos 2006, 179-186).

Tiryns

The classic case for earthquake destructions comes from Tiryns. Kilian (1996) suggested that earthquakes had caused the destructions at the end of LHIIIB1 and LHIIIB2, as well as earlier and later. These periodic destructions allowed or encouraged alterations in the site, including changes to building styles, and 'in the aftermath of an earthquake, a natural and necessary process of

rebuilding and reorganisation took place' (Kilian 1996, 67). They are also linked, by Kilian, to changes in pottery style, with which they appear to coincide (Kilian 1996, 63).

Several skeletons have been found crushed beneath walls, one in a LHIIIB1 house and those of a woman and child buried beneath the walls of the LHIIIB2 Building X (Kilian 1996, 65). Two skeletons apparently killed and covered by debris from a fallen wall were found amongst burned wooden beams, fresco fragments and LHIIIB pottery (Nur and Cline 2000, 53). Building X also had curving walls with corners not at right angles, deformation which Kilian (1996, 63) suggests is due to earthquake. Similar features are noted for Building VI where antithetic tilting of walls is present. This kind of evidence occurs within the Citadel (the Upper and Lower areas) and the Lower Town. One complex in the Lower Town shows evidence of earthquake in LHIIIC and in an earlier, possibly LHIIIB2 stratum (Kilian 1996, 63; Nur and Cline 2000, 53).

Midea

Midea experienced a major destruction, with fire and collapsed walls, buildings, gates, at the end of LHIIIB2 (Åström and Demakopoulou 1996, 36). The West Gate was particularly affected, being 'buried beneath its own remains' over a thick layer of debris and with 'a very pronounced destruction layer due to fire' (Åström and Demakopoulou 1996, 38). Evidence of burning was also prominent within the Citadel in the remains of buildings next to the Citadel wall and there was much debris, including fallen stone and broken tiles and pots. Many of the buildings also show signs of collapse, distortion and the

curvature and tilting of walls (Åström and Demakopoulou 1996, 39). The skeleton of a young girl 'whose skull and backbone were smashed under fallen stones' was found in a room near the East Gate, and this also suggests that an earthquake caused the destruction in LHIIIB2 (Åström and Demakopoulou 1996, 39). Åström and Demakopoulou (1996, 39) state that 'the collapse of the West Gate and the buildings inside the Acropolis cannot have been the result of war.'

Thebes

Several earthquakes have been suggested as causing destructions at Thebes. An early earthquake in LHIIIA2 has been proposed and one in later LHIIIB1 followed by a prolonged fire (Nur and Cline 2000, 54). Perhaps the best evidence, from a palatial workshop on the Kadmeia, is the skeleton of a young woman who appears to have been killed by a sharp blow to the head, which, in the context of her discovery within a destruction layer characterised by fallen debris from the walls, is thought to have been from a fallen roof beam (Sampson 1996, 114). It seems that she may have been trapped on the first floor of a two-storey building, since her remains were some distance above the floor level.

The Menelaion

The discovery of a skeleton in the collapsed monumental terrace wall of LHIIIB2, indicates a sudden and unexpected destruction, which could have been an earthquake (Nur and Cline 2000, 55). Another building on the lower terrace was damaged possibly at the same time.

Pylos

Kilian (1996, 65) notes that 'walls deviating from a straight line have been excavated in the Palace of Pylos, while in the main workshop (NE building) of the same complex the corners of the foundations had opened by about 1.4m.' He suggested that these were clear indications of earthquake.

Kynos: Livanates

At Kynos: Livanates there are storerooms of an LHIIIC complex, which reveal at least two destruction episodes thought to have been caused by earthquake (Dakoronia 1996). The LHIIIC complex overlies LHIIIB architectural remains, and these earlier buildings may also have been destroyed by an earthquake with fire; skeletons were also found buried under stones but it is unclear from the report which destructions they were associated with (*AR* 44 (1998), 73). The earlier LHIIIC destruction seems to belong to the end of LHIIIC Early, indicated by sherds found around clay storage bins (Dakoronia 1996, 41). The mudbrick walls shifted from their stone foundations while mudbricks were dislocated and some fell into the clay bins. This may indicate 'a high acceleration event, probably an earthquake' rather than deliberate destruction or weakness of construction (Dakoronia 1996, 41). The building was subsequently repaired and continued in use. A second destruction with structural deformation accompanied by fire, less than 100 years later may also have been due to earthquake (Dakoronia 1996, 42). This is suggested by the a spread of LHIIIC Advanced/Late pottery fragments together with pebbles and rounded marine fossils all over the site, which may have been swept over the

site by a tsunami following an earthquake (Dakoronia 1996, 42). These are not uncommon in the area. Even so, the building was again repaired and continued in use into Submycenaean, and Dakoronia (1996, 42-44) concludes that although frequent in East Locris and destructive, earthquakes 'were not critical events for its settlement history from Mycenaean times onwards.'

Other sites

According to Nur and Cline (2000, 56), earthquakes have also been suggested during c.1225-1175 for Lefkandi, Korakou, Gla, Nichoria, Krisa (Phocis) and Kastanas (Thessaly), although the evidence is inconclusive. The destruction of Gla is thought to have taken place sometime in the second half of the thirteenth century (Iakovides 1983, 105; 1990, 610; Shelmerdine 2001a, 372).

Discussion

Clearly it has become acceptable to attribute destruction events to earthquakes, and this is only right given the known seismological character of Greece (Shelmerdine 2001a, 381). Nevertheless, while destructions and abandonments themselves may be attributable to earthquakes, and though many of them fit the criteria outlined by Stiros (1996) it does remain difficult to be certain of this, whether the wider social and political effects of the collapse can be explained by them, as suggested by Kilian (1988a; 1996) and Papadopoulos (1996), has been doubted. Stiros (1996, 143) notes the potentially catastrophic results an earthquake could have had on the existence of the Spartan state in 464. In that case, it was linked with a slave revolt and affected the internal situation and external relations (Powell 1988, 109-110), which suggests that earthquakes at

particular times could exacerbate an already difficult situation or even cause one; but this must depend on individual circumstances. No similar helot class seems to have existed in Mycenaean Greece, so it is doubtful that it experienced the same threat of social upheaval, although difficulties could have been caused. Ambraseys (1996, 32) warns of creating 'catastrophe theories' by associating what seem to be simultaneous earthquakes which occurred at some distance from each other, for example in the Argolid and Pylos, and even associating geographically close destructions to single earthquakes is problematic since damage may differ significantly due to local geological conditions, the alignment of buildings and so on.

Shelmerdine (2001a, 375) rightly asks why it was at this point that the megarons of Mycenae and Tiryns were not rebuilt and why palatial administration collapsed c.1200 rather than after the earthquakes at the end of LHIIIB1. French (2002, 135) suggests that 'the bureaucratic administration which had been fully stretched to deal with the expansion of the first half of the century followed so soon by a devastating earthquake was not able to cope with another disaster on this scale.' She blames not the disasters themselves but 'rather the cumulative effect of them on an overstretched economy that may indeed have already been suffering from a diminution of trade or a lack of the raw materials sought in trade' (French 2002, 135). Others have also observed decline in the second half of the 13th century (Muhly 1992, 11). However, it is difficult to square this apparent late weakness with ability of palaces to engage in large-scale construction in the late thirteenth century (Dickinson 2006a, 42). That said, a similar situation with extensive late

building work occurred at Hattusas, which was also destroyed shortly afterwards (Bryce 2002, 256), and this indicates that the ability to perform such activities was no guarantee of long term stability.

Drews (1993, 37-47) also has doubts. In discussing proposed earthquakes at Mycenae, Tiryns and Midea, as well as Knossos, Troy and Ugarit, he was surprised 'that none of the six quakes, presumably the most severe that those particular sites ever suffered, resulted in casualties' (Drews 1993, 39). However, what may plausibly be victims of earthquakes have been found at Mycenae, Tiryns, Midea, Thebes and the Menelaion. Although these are few, they match what Drews states he would expect from a site destroyed by earthquake, and where clearing took place, bodies could have been recovered (Drews 1993, 40). It has been noted that not all destructive earthquake events need necessarily cause excessive casualties and often this may depend on the time at which they take place (Ambraseys 1996, 32). Drews (1993, 40) also notes a lack of buried valuables, which might be expected of naturally destroyed palaces, but again such items as existed could have been recovered.

More significantly, Drews questions the ability of earthquakes to destroy cities, which he notes was extremely unusual in antiquity, and the common association of earthquakes with devastating fires (Drews 1993, 38). He argues that towns that burned throughout history were by and large burned deliberately, often after looting, and cites the elder Pliny as not mentioning fire as a danger linked with earthquakes (Drews 1993, 39). Tacitus, on the other hand, did mention 'fires shining out from among the ruins' of the 12 cities in

Roman Asia 'shattered' by an earthquake in AD17 (Drews 1993, 39). It should be noted that Drews actually emphasises the lack of evidence for devastating 'city-wide' fires, since even he cannot completely deny that fires could be associated with earthquakes in the ancient world. This qualification may be important, since as French (1998, 4) noted for Mycenae, burning though widespread was not universal. Furthermore, citadels and palaces may have stored quantities of oil and other flammable materials that would make them, or areas within them, more vulnerable to fire. Åström suggested that oil lamps may have caused fires at Midea (Demakopoulou and Divari-Valakou 1999, 214). During a recent earthquake in the ancient city of Bam, Iran, some 15,000 people were crushed to death as they slept and 70% of the houses, as well as much of the 2000 year old mud brick citadel were destroyed, but fire does not seem to have played a role (BBC 2003).

A further problem may lie in the relative chronology of these earthquake horizons. Muhly (1992, 11) notes that there are serious disagreements regarding the precise dating of particular destructions, and it certainly may be questioned whether apparently simultaneous destructions at a particular site were in fact so when some areas have revealed no datable material. Extending synchronisms based on pottery to destructions between sites can be even more problematic, even when the sites are fairly close by, as was discussed in chapter 1 and mentioned above. In fact there is no reason why all destructions in any one pottery phase should have to have coincided, since the phases can last for some decades, and it seems that there has rather been a tendency to look for a catastrophic event. Even though single catastrophic quakes affecting

the whole of southern Greece are unlikely, the collapse does not require such a dramatic scenario. As has been noted, Popham (1994) suggested the destructions could have occurred over some 25 or more years and Nur and Cline (2000, 61) have plausibly suggested that an 'earthquake storm' over a 50 year period c.1225-1175 could have been responsible for at least some destructions. This tentative claim seems to be valid, and it seems likely that earthquakes played some role in LBA destructions, as they have done at other times. Even so, the strong evidence for continuity at sites which provide evidence for earthquakes suggests that the collapse was not caused directly by them, but that there were other factors which prevented a continuation of palatial organisation along previous lines.

Resource depletion

The depletion of the environment and natural renewable resources has been cited as a consequence of the palatial system, one that was possibly related to its collapse, with 'relentless exploitation of the soils and... excessive wood-cutting which had been performed in order to meet the demands of the hydrocephalic palace centers' (Deger-Jalkotzy 1998a, 122). Deger-Jalkotzy (1996, 717-718) further believes that palatial territories were too small to meet the demands of the palace systems in terms of 'supporting and feeding the masses of dependent personnel listed in the Linear B texts,' although this view is highly debatable. While suggesting that agricultural products arguably deteriorated in quality, she notes that in the Argolid grain became larger and better after the demise of the palaces (Deger-Jalkotzy 1996, 718; 1998a, 122). Sandars (1978, 184, 187) also combined the arguments of overpopulation and

resource depletion with problems in overseas trade, suggesting a shift to raiding, which she suggests may have been linked with the origin of some of the Sea Peoples.

However, even if the environment in Messenia, the region usually discussed in this context, was affected by deforestation, there were no discernible problems from the Linear B evidence in feeding the limited number of palace dependents, and in the Argolid, as in other areas, agriculture evidently continued as the basis of support for the population (Dickinson 2006a, 55; Foxhall 1995; Drews 1993, 81). It is conceivable that the wider population in Messenia could have been affected by problems related to the environment, but to some extent this depends on believing that the population was excessively high. It is by no means certain that all identified sites were occupied simultaneously in any one period, and there may have been invisible changes in settlement patterns related to land use. A long-term pattern of expansion and contraction of land use has been suggested that would see visible increases and decreases in total site numbers without any necessary population decrease, although postpalatial sites do seem generally to have been smaller and fewer (Dickinson 2006a, 84, 88).

Dickinson (2006a, 81) rightly observes that 'the LBA population must have built up a great store of knowledge about the environment, its resources and the methods of exploiting them.' Despite this caveat, it is still possible that overexploitation could have taken place, especially if other factors, including social factors and those that alter the environment, were involved (Diamond

2005, 9-10). Diamond (2005, 421) notes a number of reasons for this, such as a failure to anticipate or perceive a problem, or failure to solve it. For example, Janssen and Scheffer (2004) argue that what may seem to be bad decisions that lead to overexploitation of resources are affected by the role of sunk-costs. Effectively, decisions are based on past investments rather than future returns, leading to an unwillingness to abandon particular courses of action that may not or may no longer be beneficial. This is an interesting explanation for why seemingly irrational decisions may be made. Nevertheless, continuity of population in most areas suggests that serious overexploitation did not occur.

While overexploitation of natural resources may be able to explain the abandonment of some sites and even areas, in itself it does not explain the demise of palace society despite the continuity of Mycenaean culture. It could be argued that, as with climate change or drought hypotheses, environmental problems disrupted agriculture and caused unrest, which could have resulted in the destructions. But, many destroyed centres show immediate rebuilding, suggesting there were no such major problems in those areas. Bloedow (1995) has explicitly questioned the role of any environmental decline in the collapse of the Mycenae region. This hypothesis is not convincing with relation to the collapse in Mycenaean Greece.

Invasion and Migration

As noted above, invasion and migration have long dominated discussion of the collapse (Dickinson 2006a, 47). To some degree, this is due to the basic acceptance on some level that much later Greek traditions contain an

extractable 'kernel of historical truth'. This is shown by the widespread and long accepted notion of a Dorian invasion or migration from the north, conflated with the Return of the Herakleidai, who led them, most recently supported by Eder (1998). This and associated population movements were thought to explain common social factors such as tribal groupings, as well as the distribution of dialects, in the later Greek world (Hall 2007, 45-48). The known historical population movements affecting the Greeks in the Hellenistic period and later the Romans have also been thought, explicitly or otherwise, to provide adequate analogues to hypothesised prehistoric population movements. Indeed, it is likely that these episodes, familiar to ancient historians and archaeologists studying the Aegean, are often unconsciously in the minds of those arguing for them. The influence of these factors is shown by the desire to find invaders into the archaeological record, despite the difficulties in doing so. For example, Desborough (1972, 22-23) was forced to conclude that invaders, 'Dorians led by Mycenaean kings' from outside the Mycenaean world had destroyed the palaces and retreated rather than settling in Greece, as might be expected.

The Dorian hypothesis

The Dorian hypothesis has not remained static but has changed over time. Drews (1993, 62) notes that it was considered, until the late nineteenth century, that the Dorians entered the Peloponnese and Crete from the mountains of Thessaly in a fairly peaceful fashion. However, Maspero developed an influential theory of invasions and traced an invasion from the central Balkans into Greece, which was held responsible for the destructions at the end of the

Late Bronze Age (Drews 1993, 62-63). This deviates from the Greek myths, which in no way suggest an origin for the Dorians outside Greece; Hammond's suggestion that they were from Epirus has been influential, but is a purely modern theory (Dickinson 2006a, 4, 53). This Epirote origin theory may relate to the speculation that the Dorians were a pastoral people, and that this way of life was preserved in north-western Greece, which would arguably render the Dorians archaeologically invisible. Dickinson (2006a, 51) notes that a similar situation would hold true if the Dorians were from within Greece itself, as the myths suggest. It is difficult to resolve this argument. Since no traces of archaeologically invisible settlers or invaders would be found, the absence of positive evidence cannot be cited against this hypothesis. In fact, Winter (1977) has argued that invaders at a lower cultural level may leave no trace, and makes an analogy with the Galatian invasion of Anatolia and the Slavic invasion of Greece, known historically but not archaeologically. However, there are also features which are argued to provide positive evidence of newcomers, and these are discussed below.

From another perspective, it has been argued that the linguistic evidence often cited in support of an influx of Dorians does not in any case match with the Dorian hypothesis. This is because the Achaeans, displaced by the incoming Dorians, should have had a dialect akin to that of the Linear B tablets, whereas it was closer to the West Greek that the Laconian and Argolic Dorian dialects were also related to (Hall 2007, 45). The dialect closest to Mycenaean Greek was Arcadian, and the myths cannot be used to explain this. Hall (2007, 45) notes that, in any case, there is no need to associate linguistic change with 'a

massive wave of immigration.' Rather the distribution of dialects in Greece and the Aegean in:

> three broad strips of contiguous territories stretching from west to east... raises the possibility that linguistic features shared by the dialects in these groups need not all be the inheritance of a proto-dialect, originally spoken in a primordial homeland, but rather the product of diffusional convergence between speakers who came into continuous and repeated contact with one another (Hall 2007, 45).

Thus the Doric dialects of the Argolid were most likely produced by contact with both West Greek and other dialects (Hall 2007, 45). Chadwick (1976) and Hooker (1976, 173, 179) had suggested that the Dorians were in fact a submerged class already present in Mycenaean Greece who revolted against their Mycenaean masters, but this has not been widely supported and does not seem to be indicated by the archaeological or linguistic evidence (Drews 1993, 63 n.47; Dickinson 2006a, 53-54). While they need not have been a distinct class, or even have existed as an ethnic identity in the LBA, the ancestors of the people who later became Dorians may indeed have been the inhabitants of Mycenaean Greece. In any case, 'the history of a language or dialect is not necessarily the same as the history of those who speak it' (Hall 2007, 45).

The best solution to the use of later Greek traditions as evidence for invasions or migrations at the end of the LBA, or indeed much else about the LBA, is to dismiss them (Hall 1997, 65 and 2007, 43-51; Dickinson 2006a, 54). This seems a more sound approach than favouring some stories or parts of a story over others for quite arbitrary reasons, adapting them, or trying to force them

into a narrative dictated by interpretations of material evidence. Many of the myths concerned with population movements probably functioned as origin legends and charter myths and should be seen as the active media through which ethnicity and identity were expressed rather than as conflicting and contradictory recollections of a true historical past (Hall 1997, 41). On the arrival of the Dorians and the Herakleidai, Hall (1997, 64) states that the tradition 'is best regarded as a composite and aggregative system of beliefs which had evolved from disparate origins and for the purposes of defining discrete ethnic groups.' Indeed the description of the stages of the Dorian wanderings before settling in the Peloponnese, as recorded by Herodotus (1.56.3), is remarkably similar in character to descriptions of the arrival of Nahuatl speakers in the Valley of Mexico, and may have had a similar purpose in mediating a new and successful ethnic grouping and relating them to the surrounding peoples.[8] The Dorian identity may have only been formed much later than c.1200 (Hall 1997, 65) and none of the significant Dorian centres were prominent in postpalatial times (Dickinson 2006a, 51). The mixed origins of what became Dorian populations also seems indicated by one of the three standard tribal names, Pamphyloi, or 'people of all tribes' although in some Dorian areas some or all of these standard names were not present (e.g. Corinth) and in others extra tribal names appear (e.g. Corcyra) (Dickinson 2006a, 54; Hall 2007, 47).

[8] Although Smith (1984) argues for the 'essential' historicity of these myths. However, he notes a particular cultural difference, in that accurate calendrical recording was an important feature in Mesoamerica (180).

Archaeological invaders

Regardless of the myths, some archaeological evidence has been adduced as evidence for new populations in Greece, which have sometimes been thought responsible for the collapse and/or subsequent changes, including a possible later Dorian migration argued by Desborough (1972), who attempted to identify it with a new 'Sub-mycenaean culture,' and most recently Eder (1998). Rutter (2000b) has also argued for newcomers in postpalatial Greece, who were responsible for the destruction of the Mycenaean centres and Troy VIIa, and linked to south-eastern Romania by their pottery. Deger-Jalkotzy (1983) suggested that small groups of Viking-like newcomers from the Danube entered Greece and other areas, such as southern Italy and Sicily, Romania and Troy, and may have formed the nucleus of the Sea Peoples. Popham (1994) seems to imply a degree of 'Italian' responsibility for the destructions c.1200 and settlement, also identifying groups, the Sherden (Sardinians) and Shekelesh (Sicilians), with at least some of the Sea Peoples, on the basis of the similarity of the words.

The archaeological evidence presented for these movements consists of a new class of handmade burnished pottery (HMB), first identified at Lefkandi, that does not belong in the Mycenaean repertoire, sometimes known rather pejoratively as 'Barbarian Ware' or even 'Dorian ware,', violin bow fibulae, the Naue II sword type, as well as cremation and single inhumation in cist graves (Hall 2007, 48; Rutter 2000b). These appear combined in a variety of ways, for example Deger-Jalkotzy (1983) associates fibulae, Naue II swords and HMB as representing one phenomenon, while Popham also associates

weapons and HMB pottery as evidence of an Italian presence (Popham 1994, 285, 287, 288, 290-291, 295, 303). Rutter (2000b) notes that 'most authorities see no compelling reason to accept such a connection' between the three categories of evidence. Dickinson (2006a, 205) has noted that HMB and Italian bronzework in fact have different distributions, with bronzes found more in Achaea and Eastern Crete, suggesting that items diffused through trade and more complex social networks. Desborough (1964, 54-58) thought that bronze fibulae and Naue II swords appeared around 1200, but that the Mycenaean contexts in which they appeared suggested they did not belong to intrusive groups.

Although the Naue II type itself may have originated in central Europe and northern Italy, its introduction and adoption in Greece and the eastern Mediterranean, eventually becoming the only sword type in the Aegean and the standard sword in the Near East and subsequently continuing as an iron sword type, does not require any mass migration (Drews 1993, 64, 194). Rather swords of this kind could have been used by mercenaries, as Catling has suggested, or arrived through normal trade and contacts (Drews 1993, 64-65). The violin bow fibulae may also have come from Italian types, with early concentrations at Mycenae, Tiryns and western Greece, but likewise require no mass migration to explain their adoption and development (Dickinson 2006a, 161-162). Sherratt (2003, 41-44) in fact has argued that the increase in 'status-defining categories of personal ornaments and weapons – fibulae, pins, knives, and weapons' in the Aegean, Cyprus and eastern Mediterranean from the second half of the thirteenth century is a reflection of the increase in bronze

working in the 'Urnfield' area and their distribution through maritime trade routes, particularly connected with Cyprus.

It remains difficult to interpret the significance of HMB, which has now been found in a range of contexts in Greece and the eastern Mediterranean (Belardelli and Bettelli 2007; Rutter 1990; Small 1990; Dickinson 2006a, 52; see chapter 5 Figure 5.11a). At present, HMB is known in Greece especially from Mycenae, Tiryns, Midea and Korakou in the Argolid, Aigeira in Achaea, Nichoria in Messenia[9], the Menelaion in Laconia, Dimini and Volos (Palia/Kastro) in Thessaly, Lefkandi, and in Crete where it belongs to LMIIIA-B at Kommos and Khania, although it always forms only a small proportion of the total pottery assemblage (Rutter 1990, 36; Adrimi-Sismani 2006, 475; Dickinson 2006a, 52). While in central Mycenaean areas and Crete it is not found in funerary contexts, it is known in peripheral areas, such as Kephallenia and Epirus, although these may be local handmade wares, but no HMB is known from well-excavated sites in the Aegean islands (Rutter 1990, 36). However, caution has been advised in drawing any conclusions about the significance of its distribution as it is known so far (Rutter 1990, 36). In fact the classification itself may cover a variety of pottery types of different origins, and northern, Balkan and Italian links have been suggested (Belardelli and Bettelli 2007). Kilian abandoned his earlier idea of Epirote links for HMB, in favour of an Italian connection (Dicksinson *pers. comm.*). Others have posited the idea that the pottery marks a return to household production, but this has not been widely accepted (Small 1990, c.f. Rutter 1990, 29-34).

[9] But only 1 piece.

Significantly, HMB appears usually to have been locally produced at the sites where it has been found (Mountjoy 2001, 92), although this alone does not prove Small's argument (1990) for its production by local Mycenaean Greeks, for as Rutter (1990, 32) states:

> if *traditional* Aegean peasants were indeed producers of these HMB pots, why did they introduce so many *stylistic novelties*? Why should these novelties have been so similar at scattered sites throughout the Greek Mainland and as far away as Cyprus...?

It seems justifiable therefore to assume that it may represent 'trade links and possibly small groups of (specialised) immigrants' (Dickinson 2006a, 52). It is tempting, though admittedly speculative, to link these groups with the small-scale metalworkers that Sherratt (2003, 41) envisions as part of the economic and social shifts in the late thirteenth century. Given the HMB present at palace sites, it could be wondered whether the palaces would have been concerned with possible competition in production or access to finished goods and raw materials, or whether palatial control of such things may already have been weakened or whether some kind of palatial control or oversight may be posited.

Popham (1994) would seem to favour the earlier presence of Italians in Crete and the HMB from Kommos and Khania seems to have been imported, possibly from Sardinia and southern Italy respectively, where it is most closely paralleled (Rutter 2000b; Belardelli and Bettelli 2007). Italian parallels also seem to be closest for HMB from Tiryns, Lefkandi and Aigeira, so a mainland

Italian presence in palatial and non-palatial areas is possible, if the equation of pots and people is accepted (Dickinson 2006a, 52). Belardelli and Bettelli (2007) also link with Italy the presence of Pseudominyan ware (Grey Ware), which often occurs at Greek sites with Italian types of HMB (see chapter 5 Figure 5.11b). Kilian (1988a, 133 and Fig. 7) had noted that Pseudominyan ware continued to develop on the Greek mainland in LH (in Thessaly and the Argolid), and was probably exported to Italy, followed by some reflux.

Whoever made and used HMB, there is in any case no intrinsic need to see them as hostile, even if they were from outside the Mycenaean area, and surely the small proportions of this material, as well as its use in Mycenaean sites and incorporation into the Mycenaean ceramic repertoire, indicates peaceful contact. Features of HMB are used in LHIIIC pottery as well as vice versa at Tiryns (Rutter 1990, 37-39). Why would those who had come to live amongst Mycenaeans and presumably made their living through their involvement in the Mycenaean society and economy wish to destroy it – and in the small numbers that may have been present, how indeed could this have been managed?

All of these features, Naue II swords, fibulae and HMB, began to appear in Greece before the collapse, and may indeed be more likely linked to economic changes beginning in the thirteenth century and continuing in the postpalatial period, as argued by Sherratt (2003) and Crielaard (1998), than to massive population movements. HMB is present in pre-collapse Mycenae, Tiryns, Midea and Nichoria as well as parts of Crete from LMIIIA and after (Dickinson 2006a, 52). Naue II swords are now known to have appeared

before the collapse and violin bow fibulae also appeared at Tiryns before the destruction c.1200 (Dickinson 2006a, 72, 161). While the movement of small groups and individuals, skills and ideas, seems likely enough, as it would be in any period, it is extremely unlikely that these features taken together or individually can represent any significant change in population or that this would have been a reason for the collapse of the palaces.

Finally, Desborough (1972, 109-11) placed great emphasis on cist cemeteries as indicative of a new population from Epirus that 'fused with, and dominated, the surviving elements' in the second half of the twelfth century. But this view has never been entirely persuasive, as Snodgrass (2000 [1971], 314ff.) had already argued for local cultural developments. Deposited pots and metalwork found in cist tombs also appear in chamber tombs, blurring their significance as ethnic indicia (Dickinson 2006a, 51). As for single burials in cist and pit graves, these are known throughout the Mycenaean period in central and peripheral areas, while they are not found in later Dorian areas such as Laconia and Messenia, at least until much later (Voutsaki 2000). Notable examples do occur in Attica and Euboea, but according to tradition these areas did not receive new populations (Dickinson 2006a, 51). Cist cemeteries also have differences between them, and so are unlikely to represent one homogeneous culture (Dickinson 2006a, 52). Rather than any sudden shifts in material and burial culture there are gradual and 'spatially uneven' changes '(Voutsaki 2000, 232). Both Antonaccio (2000, 613) and Voutsaki (2000, 233) have rightly criticised Eder (1998) for the general attribution of changes in material culture or behaviour to immigrants, and this is surely correct. Neither pots,

swords, fibulae or burial practices are necessarily markers of ethnicity, and without the background of the Greek traditions themselves it is doubtful that this kind of model would have remained as influential as it has.

The current status of migration theory

Debate about migration theory itself, and its prominence in archaeological explanation, also leads to problems in accepting it even though it has enjoyed a long tenure in archaeology. Despite being a regular feature, as an explanatory device it has attracted criticism at least since the first half of the twentieth century (Renfrew and Bahn 1996, 36). In spite of its prominence 'migration has never been formally articulated as a general principle of historical explanation' yet 'it has nevertheless been invoked as an *ad hoc* explanation for cultural, linguistic, and racial change in such an extraordinary number of individual cases that to speak of a migrationist school of explanation seems wholly appropriate' (Adams *et al.* 1978, 483). Typically, migrations have been posited as mass movements of waves of distinct groups from homelands, which thus leave archaeologically identifiable traits (Adams *et al.* 1978, 486-487), and this is how they have often been envisioned in connection with the collapse of the Mycenaean palace societies, the postpalatial period and the occurrence of 'Aegean' or Aegean derived material culture elsewhere in the Mediterranean (see chapter 5 for further discussion).

However, it is now recognised that material culture, as well as ethnicity and the creation and maintenance of identity, operate in much more complex ways (Hall 1997). There is no simple equation between a material culture and

political, ethnic or linguistic groups, and those who share a political or ethnic identity may be diverse linguistically and culturally. Simplistic and untenable assumptions to the contrary, suppose 'an organic connection between social groups and the cultural property they disperse' (Burmeister 2000, 540). Thus Burmeister (2000, 540) rightly comments that:

> The conceptualisation of migration... as an invasion of foreign territories in the manner of a tidal wave (Rouse 1986, 177)... is based on unfounded assumptions. Mass migrations are extremely rare, and the improved state of research has often made it necessary to replace the supposition of prehistoric mass migrations with the recognition of a process of infiltration that took place over centuries...'

Migration theory has its origins in the traditions of many peoples, but that in itself does not make these traditions true, as the discussion of the Dorian hypothesis has shown. It became a particularly popular explanatory device in the nineteenth century (as noted with Maspero, above) and one factor in explaining its popularity, at least in the western Judaeo-Christian intellectual tradition, may be that it could be reconciled 'with a literal interpretation of the Old Testament' (Adams *et al.* 1978, 484). This desire to reconcile literary and mythical traditions, especially biblical or classical, with scientific archaeology is understandable. In the context of the Aegean and eastern Mediterranean, Drews (1993, 53-72) and Silberman (1998) have observed the development of migration theories as reflecting contemporary culture and intellectual trends. However, despite the constant and justified criticisms of migration theory 'not

only are many old migration theories still unchallenged, but new ones are constantly being proposed' (Adams *et al.* 1978, 486).

While it is certainly necessary and acceptable to involve the movements of people and groups in historical and archaeological interpretations, this must be achieved through the acceptance of demonstrated and well-known kinds of movement, rather than simply invoking mass migration as a convenient explanation. Indeed, these processes, while they may be difficult to identify archaeologically, are nevertheless well researched and widely published (Burmeister 2000; Anthony 1990). More plausible kinds of population movement are discussed in chapter 5.

Anxiety

Another pillar of invasion hypotheses more generally rests on the identification of 'anxiety' in the later thirteenth century, which it is usually argued is indicated by work on fortifications at major citadels, at Mycenae, Tiryns and Midea and the construction of Gla, measures taken to secure water supplies from inside citadels and the building of a wall across the Isthmus (Popham 1994, 280-281; Deger-Jalkotzy 1999, 128-129; Dickinson 2006a, 42; Broneer 1966). Popham (1994, 280) even suggests that the destruction of possibly walled Pylos,[10] which he places early in the thirteenth century, as against the more widely accepted c.1200 dating (Mountjoy 1997), was a catalyst for these developments in the rest of Greece. Early destructions at Thebes and possibly

[10] Recent investigations at Pylos revealing a 'linear feature' may indicate that the LBA site was fortified, although further investigation is required before this can be confirmed (Shelmerdine 2001a, 337-339, 378).

Orchomenos have been identified as signs of 'trouble' as have those at Mycenae, Zygouries and Gla (Popham 1994, 280; Dickinson 2006a, 42). The abandonment after LHIIIB1 of the 'Ivory Houses' outside the citadel at Mycenae, which had some administrative function, has also been considered significant (Dickinson 2006a, 42). Drews (1993, 217) has suggested that 'hordes' of 'northern Achaeans', Greek 'barbarians', attacked Thebes and Troy, as well working as mercenaries in the Argolid, and that it was this 'alarm about what was happening in the north' that stimulated increased defensive measures.

As well as a sense of physical danger, some argue that there was economic anxiety and a general sense of 'insecurity and impending crisis' (Voutsaki and Killen 2001, 7). Following what may have been a boom in exports for the palaces in LHIIIA2, there seems to have been a decline in exports throughout the thirteenth century, with an increase in local production of Mycenaean style goods elsewhere (Mountjoy 1993, 170-175; Dickinson 2006a, 41-42). Also at this time, the palace at Pylos seems to have been converted into a factory for producing perfumed olive oil, which may suggest concerns over controlling production and possible economic or other problems (Dickinson 2006a, 42). As noted above, Sherratt (2001; 2003) sees this in the context of import substitution while others have conjectured that trade was being disrupted either by the Sea Peoples or even that Mycenaean goods may have been boycotted or banned in certain ports of the Near East, although this relies on the Mycenaean interpretation of Ahhiyawa (Bryce 1998, 343).

Further evidence of a military threat and perhaps a threat specifically from the sea has often been adduced from the Linear B tablets at Pylos (Palmer 1961, 132-155; 1963, 147-163; Shelmerdine 2001a, 375 and n. 285). Tablet Jn 829 records the amount of metal to be given by various parties, including religious figures to palace officials and this 'temple bronze' is specified as for use in making light javelins and spear points. However, the problem in interpreting this as signifying immediate danger is that it cannot be known whether this was a normal activity or an unusual arrangement, nor if it was, what the motivations for it were (Palaima 2004, 290-292). This is likewise true for the *o-ka* tablets, which appear to show the mobilisation and arrangement of forces for watching the coast (Dickinson 2006a, 55). Shelmerdine (2001a, 375 and n. 286) notes that many Linear B specialists are not convinced that the tablets can be interpreted as showing any immediate crisis.

However, the interpretation of the thirteenth century as an 'age of anxiety,' is entirely speculative and the notion that some kind of serious military threat is indicated seems based upon the later occurrence of the collapse itself. A study of the construction of the fortifications casts serious doubt on whether they could have been built quickly, and the interest in access to water need not be considered merely as a response to the threat of siege as opposed to a basic improvement of site facilities (Wardle 1994, 229; Loader 1998, 65 n.16, 72-73). Rather these developments, as with constructions in the Aegean islands in the later thirteenth and twelfth centuries (see chapter 5) can more plausibly be seen as 'expressions of power and wealth, designed to impress subjects and rivals and to strengthen control over territories' (Dickinson 2006a, 42).

Driessen (1999, 16) too has noted that 'monumental buildings... are almost always constructed in critical periods of political consolidation' and this in itself must argue against the ineffectiveness or inability of the palaces in LHIIIB, although it could reflect various levels of competition. Voutsaki's interpretation (2001, 205) of these, along with the apparent restricted access to and palatial control of prestige goods, rather argues for the palaces' continued ability to control or mobilise certain resources at this late stage. Furthermore, it was not only fortifications that were extended, but also roads, bridges and dams (Voutsaki 2001, 204). The relevance of the putative LBA Isthmian wall is more problematic in that it is of uncertain date and purpose, and may not even be a single structure (Morgan 1999, 362-365). Given this, Dickinson (2006a, 42) suggests that it should be omitted from the discussion. Certainly, undue weight should not be placed on such difficult evidence.

To characterise palatial Greece in the period immediately before the collapse as experiencing an anxious or troubled time, or a period of decline, is to link together disparate evidence, all of which could have many other possibly more plausible interpretations, and to further link this with the collapse seems dangerously circular. While it may be a superficially attractive theory, one which fits often assumed notions of three-stage organic social development, declines are difficult to identify or quantify and their connection with collapse is far from assured; certainly, no decline is necessary even when a collapse occurs (see chapter 2). Although the factors outlined above may indeed have been real, and may have affected the Mycenaean world and individual polities, there is no unique, firm causal link between them and the collapse.

Changes in warfare

One problem with invasion hypotheses has been explaining convincingly how so many major sites could or should have been defeated within such a seemingly short space of time. Indeed, since the Mycenaeans are often characterised as warlike or militaristic,[11] 'it would almost seem as if they loved strife for its own sake' (Taylour 1983, 135), it may be thought surprising that their cities and fortified citadels, their well-equipped warriors and indeed their social system could have all been destroyed by the predations of 'barbarians' of any sort. Hence some have suggested invasions or migrations following some kind of weakening internal breakdown (e.g. Sandars 1978, 186, 197). Others may follow a tendentious view that matured societies experience 'decadence', which weakens their military capacity. Drews (1993) however, has recently offered a hypothesis that links changes in weapons and military tactics with social changes and the collapse in Greece and more widely in the eastern Mediterranean, and which purports to explain how so many LBA states could be brought down in one 'Catastrophe'.

Drews' hypothesis is based on the notion that LBA polities essentially relied on chariot borne archers and engaged in chariot warfare (Drews 1993, 104, 114, 119, 124):

[11] The persistent idea of 'warlike Mycenaeans' may stem from early associations with the Homeric epics and juxtapositions with supposedly 'peaceful Minoans'. Deger-Jalkotzy (1999) presents evidence for links between militarism and social status, and Davis and Bennet (1999, 106) argue for the importance of warfare in the rise of Pylos. While some degree of warfare and conflict is likely, actual militarism in the sense of an unusual propensity for warfare or violence should be disconnected to some degree from ideological militarism, which is not an unusual feature of elite self-definition (Dickinson 2006a, 36).

> The Catastrophe came about when men in 'barbarian' lands awoke to a truth that had been with them for some time: the chariot-based forces on which the Great Kingdoms relied could be overwhelmed by swarming infantries, the infantrymen being equipped with javelins, long swords, and a few essential pieces of defensive armor (Drews 1993, 104).

The archaeological evidence for these changes in weapons has been systematically reviewed (Drews 1993, 174-208) and unusually, Drews (1993, 221-222) also gives a vivid description of how he views the actual destruction of citadels and palace sites and who he believes the destroyers were. 'Raiders from Locris, Phocis and inland Thessaly' may have destroyed Boeotian palaces while sea raiders from coastal Thessaly and Achaea Phthiotis were responsible for other destructions, including Koukounaries on Paros (Drews 1993, 221-222). While suggesting that sieges may have played a role, he emphasises the role of thousands of 'swarming javelineers' who would allegedly have been difficult for chariot archers to target, and who stormed cities (Drews 1993, 222).

Although he has produced a wide-ranging and stimulating discussion, Drews' basic arguments have not met with widespread acceptance (Cline 1997; Dickinson 1999c; Rutter 2000b). In the first place, Rutter (2000b) rightly notes the difficulty in attributing a single cause as responsible for 'a very complex and multifaceted combination of events that involved a very large area over a century or more of time.' Similarly, Cline (1997, 129) disputes whether Drews' argument actually explains why the 'Catastrophe' occurred and suggests rather that we 'most likely must continue to look at a complex

multiple cause-and-effect series of events and processes' stating that 'his 'who' and 'how' are... problematic, while his 'why' is the least satisfactory.' In fact, the basic premise of Drews' hypothesis, the reliance of LBA polities on chariot warfare, is extremely doubtful as applied to Greece, and indeed other areas, and this seriously undermines his argument.

Firstly, on practical grounds alone, the topography and terrain of Greece would effectively prevent any reliance on chariots as the main instruments of battle, especially in the way that Drews envisions their use as mobile carts for archers (Drews 1993, 119; Rutter 2000b; Dickinson 1999c, 23-24). Drews (1988) has argued that the Mycenaean elite were in fact originally invading chariot-borne Proto-Indoeuropean speakers who used chariots to maintain their dominance, this is not convincing for various reasons (Dickinson 1999a), but in this context it should be noted that early representations of warfare from the Shaft Grave period 'consistently present warriors on foot' and the stele with chariot scenes 'derive important iconographical elements from the Near East' (Dickinson 1999c, 21). This is supported by the predominance of hand-to-hand weapons as opposed to arrowheads in graves, at least early on. This may represent a difference between ideology and practice – between how elites thought they should define themselves and what was actually done in practice, and, as interaction between Greece and the Near East became more intense, the importance to Mycenaean palaces of having and being seen to have chariots may have increased (Dickinson 1999c, 22). But as Driessen (1999, 14) comments 'we may argue whether its military role exceeded its symbolic significance.'

Drews (1993, 135-163) further argues that footsoldiers played an insignificant role, subordinate to chariot-warfare, as skirmishers or runners and dismisses the postpalatial 'Warrior Vase,' with its scene of marching footsoldiers, as a valid example of typical Mycenaean practices. However, he also dismisses from the argument the earlier and thus more relevant Pylos 'Battle Scene' fresco (Figure 3.1; Drews 1993, 140). He suggests that the scene shows high status warriors from the Pylos palace, clad in boar's tusk helmets, defeating skin-clad 'savages', but rather than an infantry battle, he suggests that it is a guerrilla, a set of individual duels. This fits with his notion that 'civilized' kingdoms would use footsoldiers when fighting barbarians, usually because they lived in places where chariots could not operate. In fact, a Hittite letter from the Maşat archive refers to the use of chariot corps and footsoldiers against the Kaska (Kuhrt 1995, 257).

Figure 3.1 Pylos Battle Scene Fresco. Source: Drews 1993, 141 Plate 2.

Drews is unsure whether the fresco shows a contemporary scene or a legendary event, but surely whatever the subject matter contemporary practices would

affect the portrayal, as in classical renditions of myths or Renaissance or any number of other paintings of historical scenes. Close examination of the Battle Scene must in any case affect Drews' conclusion since fragment 26 H 64 appears to show 'warriors and a chariot' advancing right and the combat frieze 'seems to have depicted both stationary chariot scenes and combats among infantrymen' (Davis and Bennet 1999, 109 and n.16). This combination could have been necessary in a variety of military encounters, since in attempting to take forts and towns through siege, chariots would have offered no advantage, and in fighting an enemy on foot, chariots may have looked impressive and threatening (Dickinson 1999c, 23). The Amarna Letters also show that in the Near East requests for archers and infantry were a priority, and in Greece hand-to-hand weapons remained prevalent, which may reflect the practical side of warfare rather better than any elite ideology, which may have been more focussed on chariots as a form of elite expression (Dickinson 1999c, 23-24).

The exact nature of LBA warfare remains somewhat unclear and in fact Drews (1993, 98) admits that much is guesswork, but it is sure to have included a mix of weapons and tactics, which were deployed as leaders saw fit, and these need in no way be accurately represented by any painting, poem or other text. As for the actual advantage that Drews' barbarian footsoldiers would have had over the forces that could be mustered by a state, this also remains unclear, although in chapter 2, it was noted that 'barbarians' could, under certain circumstances, defeat better-equipped modern armies. However, any recourse to numerical superiority of barbarian 'hordes' is purely speculative and we can also suppose a basic advantage of local knowledge and resources to defenders.

What can be noted is that it is unlikely to have been difficult to devise tactics to counter chariots, even if they had never been encountered, so any sudden revolution in tactics is unlikely (Dickinson 1999c, 23). Further, if Drews (1993, 153-157) is correct that barbarian contingents were hired as state mercenaries, then states would have already been familiar with and able to deal with their tactics. Even if there was a novel element to tactics, it is extremely difficult to see them as remaining unknown or successful for a period of perhaps 50 years (Dickinson 1999c, 24).

Overall, Drews' thesis cannot be accepted, since any sudden and devastating revolution in tactics is most implausible, and it is in fact a new variation on the theme of barbarian invasions. It is difficult to see why all those living outside or on the margins of more complex societies ('barbarians') throughout the eastern Mediterranean would suddenly wish to destroy them, even if they were able to, and this still relies on a rather basic and tendentious characterisation of barbarians (see discussion in chapter 2). For Greece specifically, Dickinson (1999c, 25) states of Drews' theory:

> I feel great scepticism about his notion that warlike 'barbarians,' in this case 'north Greek,' populations lived in close proximity to the most civilised parts of the Mycenaean world in the Peloponnese and Boeotia. Regions like Phocis, Locris, Phthiotis, Aetolia and Thessaly may not have been under the control of palaces with literate administration, but archaeologically they look very like the rest of the Mycenaean world, certainly no more warlike.

It may be though that, taken over a longer period of time, changes in access to weapons and in styles of fighting could quite plausibly have been involved in social change.

Plagues and epidemics

Significant decline and movement of population is one of the most notable features of the collapse (Dickinson 2006a, 67, 93-98). Although it is impossible to be precise about the level of actual population loss, given the fact that in some areas populations seem to have nucleated at certain sites and some regions (e.g. Achaea, Eubeoan Gulf) seem not to have experienced significant if any depopulation, it seems to be most notable in Messenia and perhaps the southern Argolid, given the level of abandonment of even small sites (Eder 2006, 557; Crielaard 2006; Dickinson 1994, 308; Van Andel and Runnels 1987, 98). However, older interpretations of massive population decline have been and remain influential (Dickinson 2006a, 93), and some scholars have sought to explain the collapse, long term population decline, as well as the introduction of cremation, by suggesting that repeated episodes of bubonic plague were responsible (Williams 1962; Walløe 1999).

Williams (1962, 109) linked together the collapses or significant changes in the Aegean, the Near East, Egypt and Anatolia, and dismissed political events, the adoption of iron and invasions or migrations as likely causes of such widespread change. He also doubted any superiority in numbers or weaponry that putative invaders might have had, for although he believed in the validity of a Dorian invasion, he saw it as taking place possibly over a century with

small numbers that were 'not militarily formidable' into an essentially depopulated land (Williams 1962, 110, 120). Walløe (1999, 121-122, 126) similarly dismisses other explanations for collapse and links the Mycenaean and Hittite collapses, as well as other disturbances in the eastern Mediterranean.

Williams (1962, 113) notes that plague is extremely infectious and often deadly, tends to affect large areas, can spread rapidly and linger for years and affects animals and humans. Indeed it is significant when considering the agricultural nature of ancient societies that many diseases humans are susceptible to are shared by domesticated animals and rodents, and McNeill (1998, 69-70) observes that 'probably all of the distinctive infectious diseases of civilization transferred to human populations from animal herds.' Large numbers of sheep are known to have existed from Linear B, with more than 100,000 recorded at Knossos and a sizeable amount from Pylos, while other domesticates were also known (Dickinson 1994, 48). It would seem possible that, with the development of large herds, some communicable diseases could have developed or come to affect humans more seriously.

Williams (1962, 111-112, 113-114) provides descriptions of many historical instances of plague from the classical world and medieval Europe, noting its devastating effects on human and animal populations. The Justinianic plague of 541AD, for example, recurred for over 200 years up to c.761AD and is reckoned to have killed some 200,000 people in Constantinople, 40% of its population, while an outbreak in 599-600AD killed 15% of the population of

Italy and southern France (Naphy and Spicer 2004, 14-15). The later Black Death may have killed a third of the population of Europe in three years and half the population of Britain between 1348-62AD (Williams 1962, 112). The effects on population may have lasted some centuries, reducing it until outbreaks eventually ceased (Walløe 1999, 122). Walløe (1999, 122) also notes these two pandemics and suggests that a similar pattern of events occurred in Greece between 1200 and 700.

These historical plagues had serious effects at local and wider levels. Famine is a noted short-term effect (Walløe 1999, 121-122). Another is population movement, with some people fleeing infected areas (Walløe 1999, 122). This feature is notable in England between 1350-1500AD with the abandonment of some 1300 villages and migration into urban centres, which were also affected, although there are competing explanations for the phenomenon of deserted medieval villages (Naphy and Spicer 2004, 35). Plague could evidently cause profound changes in settlement patterns and demography over time. Walløe (1999, 123) notes that in the aftermath of the Justinianic plague in Italy, there was some movement of a scattered population to 'concentrated settlements on nearby hilltops or to places which were more defensible,' which can be compared with changes in settlement patterns around c.1200 and after in Greece and the Aegean, but especially in Crete (Rutter 1992, 68-70; Haggis 1993; Nowicki 1998 and 2000).

Walløe (1999, 123) also notes that mortality was higher amongst the ruling classes, perhaps because they were a smaller proportion of society as a whole,

while another important effect of the Black Death in England was the impact on trades, with apprenticeships being shortened and recruitment taking place at a younger age and from outside traditional groups, thus plague 'at almost every level of society, increased opportunity and mobility' (Naphy and Spicer 2004, 35). If the plague hypothesis is valid, it may have affected the elite most seriously and this could have played a role in causing the demise of the palatial system and the skills and economy it supported both directly and indirectly. It could plausibly explain the loss of literacy, which was extremely restricted, presumably amongst the elite or a professional class, but could also explain the continuity and transformation in the artistic repertoire and the loss of certain probably quite limited skills in specialist craft production (Rutter 1992, 70; Dickinson 2006a, 72-73).

Plague also had a noted effect on the operations of organised power both central authorities and at local levels, disrupting incomes from taxation as well as causing organisational problems due to increased mortality itself (Walløe 1999, 123). Social unrest, disorder and civil war could result from this, due in part to the increased burden placed on the general population to create more revenue. Whilst the economies of the palace societies of Mycenaean Greece were very different in scale and complexity to those of the later Roman Empire and medieval England, it is easy to see that high mortality due to plague would similarly disrupt agriculture and the production and circulation of other goods and interrupt the functioning of society generally. Similar outbreaks of lawlessness and banditry could have occurred and Walløe (1999, 123) notes of Italy that the elite were no longer able to protect the population, leading to the

changed settlement patterns mentioned above. This lack of strong central power and instability seems to fit with the kind of unstable and more mobile society suggested for postpalatial Greece (Dickinson 2006a, 69-72). Furthermore, a younger society forced to adapt to new conditions and already dislocated might be thought more willing to engage in the mobility and opportunism that is suggested for postpalatial Greece (Dickinson 2006a, 66, 71). Taken together, these changes would initiate something of a new outlook on life that would remember the palatial past and material heritage but primarily seek to deal with present conditions with existing skills and knowledge.

Williams (1962, 114, 116, 122) also suggests that the rite of cremation may have been adopted because of the plague, as Thucydides noted occurred during the Athenian plague, although he also notes that it would only be possible 'where the attack rate was relatively low'. While cremation may have spread from Anatolia westwards to be used sporadically in Greece, as Williams (1962, 124) argues, it was also in use in Italy and could have been adopted from both regions. Nevertheless, cremations were rare and the pattern of early cremations does not follow the pattern of palatial destructions, with the exception of those at Khania (near Mycenae) and Thebes, which belong to LHIIIC Middle. Most early cremations occurred in the non-palatial regions of the western Peloponnese, Achaea, Elis and Arcadia, the Aegean Islands and Crete (Dickinson 2006a, 73). In the postpalatial period cremation was sometimes used but usually alongside inhumation and while it became more popular and was used in more sites in the EIA the regional trend continued.

Cremation only became standard in Athens in the PG period (Dickinson 2006a, 186). It seems unlikely that the selective adoption of cremation had anything to do with any plague that may have affected palatial regions.

The main problem with the plague hypothesis is the lack of positive evidence. Walløe (1999, 123-125) attempts to use a description of a plague amongst the Philistines from the Old Testament First Book of Samuel, which it is argued contains historical detail pertaining to the 11th century, as contemporary 'strong documentary evidence of bubonic plague in the same region at the relevant time'. But this evidence can only be analogical, since it hardly relates to the same region and falls too late to provide positive evidence of plague in Greece around 1200. Walløe (1999, 123, 125) also argues that the Philistines were of Aegean origin, although this not necessary to his theory, and he seems to suggest that plague may have been communicated between Greece and Philistia via ship borne rodents. It is perhaps implied that plague was carried from Greece to Philistia where it recurred subsequently.

There is evidence for plagues in the LBA (probably late 14th century) affecting Alashiya (Moran 1992, 107) and the Hittites (Bryce 1998, 223-225), which, according to the texts at least, had devastating effects on the copper industry in Alashiya, and religion and agriculture in Hatti, also laying it more exposed to attack. Since there were interconnections between all these regions, it is perfectly possible that any communicable plague of disease could have been transmitted to the Aegean region. A lack of textual evidence for plague in Greece is not surprising, given the restricted uses of literacy no explicit

mention would be expected, although some of the Pylian evidence often used to argue for an imminent military threat could be interpreted to suggest reactions to plague, but that is equally speculative.

Much about the plague hypothesis seems attractive in the way it can explain the changes in settlement pattern, material and social culture and long-term decline in population levels. The palace systems may have been unable to cope with any serious plague and those running them would have been directly affected, as would the wider population. In explaining the variability of collapse, it could also be suggested that if a plague entered Greece from outside, it would be more likely to enter and affect palatial areas with contacts abroad, although all of Greece was interconnected. Although absolute numbers are difficult to determine, palatial areas may have been more densely settled and thus more seriously affected, while possibly less populous peripheral areas may have been less affected, although it is the case that both rural and more densely settled areas can be affected by plague. Effects would simply be more archaeologically visible in palatial areas through the demise of the palace centres themselves. If Messenia was as densely populated as some suggest, it may best fit this scenario. It has been noted that the first occurrence of Black Death affected both rural and urban areas but in its second outbreak was more limited to the more densely populated places (Naphy and Spicer 2004, 34-35). Such a pattern could explain the prolonged decline of population in some parts of Greece, including those affected by the collapse but which enjoyed a degree of postpalatial prosperity, such as Tiryns. To explain the destructions

themselves, however, plague is not enough; it would have to have been coupled with violence, but in such circumstances that is not unimaginable.

Warfare, internal strife and competition

An alternative approach to a single wave of destructions was suggested by Mylonas, who thought that the contemporaneity of the destructions had been overemphasised (1966). This possibility has similarly been stressed in more recent approaches (e.g. Popham 1994, 281; see chapter 1). Rather than one wave of destruction, interstate warfare and/or internal problems could have been responsible for destructions at major sites at different times (Hooker 1976, 177). This suggests that there could be a variety of reasons for the destructions and that different groups could have carried them out at different times, and mitigates the requirement for the presence of any external enemy.

Mylonas's inspiration for his argument was the later Greek myths associated with Mycenaean centres such as Thebes and Mycenae and the stories of their ruling families. Even though the narrative and historical value of the later myths as relating to the LBA may rightly be questioned, they nevertheless suggest by analogy a plausible truth about the nature of Mycenaean palace society, that it may have been made up of a network of elites within and between regions. Palace states may have existed as 'centres of alliances and systems of subordination and dependence' (Dickinson *pers.comm.*). In the Argolid, with its high concentration of major sites, this may be especially true but links between palace states and non-palace state areas may also be expected

(Eder 2007) and some palatial interest in the Aegean islands, especially Rhodes, also seems likely.

Although little is known about their interrelations from Linear B, which contains few references, the archaeology and pottery does indicate that exchange took place between palaces on the mainland and between the mainland and Crete (Bennet 2006 201-204). Gift exchange between elites, as well as intermarriage and hospitality, would also have served both to link elites across regions, as well as to reinforce their different status within the local community (Voutsaki 2001, 206). However, these links need not in any way prevent warfare or competition between palatial elites (Driessen 1999, 19) and this may have taken the form of conspicuous expenditure on fortifications, often cited as a sign of anxiety. In fact, Tainter (1988, 202) has suggested the collapse was caused when 'Mycenaean petty states became... locked into competitive spirals, each had to make ever greater investments in military strength and organizational complexity' leading to 'essentially simultaneous' collapse.

Warfare itself has been identified as a 'most intensive way of peer polity interaction' (Driessen 1999, 20). The Linear B records clearly demonstrate that palaces had military interests, since they list military resources, weapons, armour and chariots, and possibly sometimes the mobilisation of forces (Palmer 1961, 172-182, 203 and Palmer 1963; 147-163, 314-337; Taylour 1983, 135-141; Dickinson 2006a, 55). By analogy with the classical period, with its mix of independent political units, we may expect that warfare was not

an unusual feature in LBA Greece (Deger-Jalkotzy 1999, 124), but even when warfare was more usual than peace, it need not indicate a 'militaristic' or 'warlike' society.

Although Rutter (2000b) criticises Mylonas's hypothesis because it fails to explain why the palaces were not rebuilt, it could be plausible that, should a dynasty have been dethroned by another, the replacement, whether it be the conqueror or a new local elite, may have chosen to express its power in a different way, rather than ape its failed predecessor. This depends on how they wished to express themselves and arrange society. Equally, if the elite of a given area suffered high casualties in battle, the infrastructure supporting the palace and linking it with its hinterland and region may have disappeared or at least changed substantially. This severance or dislocation would have precluded, reduced or hindered resource mobilisation through existing social links, and made it difficult for a palatial authority to continue to dominate. Altered social linkages may have resulted in a failure to replicate exactly palace ideology with its vertical hierarchy, and the case of Tiryns, with its elite housing, may represent such a restructuring (see chapter 6). Warfare could equally cause problems through rendering areas unsafe for agriculture and local populations, causing flight and/or nucleation. Thus internecine warfare could explain the physical destruction of palace societies over a prolonged period, as well as changed settlement patterns.

To these factors linked with warfare between polities can be added conflict within polities. This can act as a destabilising factor in itself or as an added

feature alongside other problems. Conflict within polities can take many forms and only a few will be mentioned here. Mylonas' (1966) notion of conflict within and between ruling families is hardly far-fetched, even if deriving from mythical examples. Competition within royal families and problematic successions can often provide destabilising factors that can lead to serious divisions within polities and civil war. The wars in England between Stephen and Matilda, following the death of Henry I, resulted in civil war, a divided England, revolt in Wales and the temporary loss of Northumbria (Gillingham and Griffiths 2000, 19-23). However, this of course did not lead to the collapse of England. In the Hittite kingdom, rival claims to the throne were evidently problematic due to the number of royal descendants and these concerns were expressed quite frankly by Tudhaliya IV (Bryce 1998, 332-334). In this case, these could have played a role in the Hittite collapse (discussed further in chapter 4). Rivals could provide alternative leadership and exacerbate existing problems, especially concerning the maintenance and integration of vassals within one overarching structure. Although we know nothing of the arrangements for the succession of *wanaktes* in LBA Greece, we may expect that similar situations could have arisen within any royal family.

The presence of other leading families could also pose a threat, and indeed faction and competition is cited as a feature of the formation of palace culture (Wright 2001; 2006, 41). Furthermore, it seems that in the course of palatial expansion, there was a military aspect (Davis and Bennet 1999, 106) as well as the incorporation of local elites into bigger power structures presumably through other means (Shelmerdine 2001b, 127, 128; Palaima 2006, 68-69).

These local elites will have continued to exist and the relationship between them and palace elites should be seen as reciprocal. However, the existence of local elites would have formed an ever present potential for social cleavage and in the context of palatial relations with local elites, this can be seen as a real threat to the maintenance of stability and palatial authority. The existence of other leading families at the centre would have had a similar effect.

Although the case for interstate warfare, internal strife and competition as causes or features of the collapse cannot be proven, they are 'eminently plausible' (Dickinson 2006a, 54). It is inherently likely that these dynamic palace polities, each containing a range and variety of individuals and groups with individual motivations, engaged in reciprocal relationships and balances of power and interest, did have the potential for instability and the breaking down of social structures at a variety of levels in themselves and between them. Local structures absorbed into an overarching hierarchy may have been more easily detached from it. If one polity was destroyed, and there is no need to see the destruction and utter failure of the polity necessarily as a conscious desire of the attackers, whether by a neighbour or by competing groups within it, this would have affected the situation in other areas. Any reactions to prevent such a situation in other polities, either by leading groups attempting to increase control, exterminate rivals or any number of other possible actions, could equally have fomented further antagonism thus precipitating problems that may not otherwise have arisen.

Such a situation need not necessarily have been present in all areas of Greece. In Corinthia, Morgan (1999, 365-366) has argued against both invasion and implicitly warfare, suggesting that there is 'no reason to assume anything other than a very gradual and peaceful transformation of community life' and Corinth 'gained in size and importance during LHIIIC'. However, even areas that were unaffected or uninvolved directly by warfare between palatial centres or internal problems within them, would have been affected by the general changes within the Mycenaean region as a whole.

Certainly, the merits of this hypothesis rest in the active role given to participants, who engage in realistic and historically well-attested behaviours. It accepts a more dynamic view of societies as venues for social action, cooperation and competition between groups and individuals. Perhaps, in the way that collapse could occur accidentally from such events, it also deals with the motivation so often lacking in generic theories of invasion, and migration or barbarians. Those competing for power or influence may not have set out to destroy their own world on purpose and likely would not have expected it as a consequence of their actions, even though these actions may have disrupted the very foundations of their own society. These active elements of the hypothesis could easily have combined with other problems to create a very different postpalatial world, yet one inextricably linked to its palatial predecessor.

Conclusion

This chapter has discussed the major theories that have been used to explain the collapse of Mycenaean palatial culture, yet it is impossible to prove that

any single one of them is correct. It might be suggested that monocausal explanations are inherently unlikely, and indeed this largely reflects current views of collapse. Shelmerdine (2001a, 376) notes that 'it is improbable that all these phenomena, at all sites, could have had a single cause. Indeed many now agree that a combination of factors must have been at work.' The three most recent summaries (Hall 2007, 51-55; Bennet 2006, 209; Dickinson 2006a, 43-56) follow this reasoning and all suggest a degree of scholarly consensus that represents valid progress in understanding the Mycenaean collapse (see Table 3.2).

	Dickinson	**Bennet**	**Hall**
Internal warfare/strife/conflict	Plausible factor, leading to dismantling of states and instability	Local phenomena directed against the palatial centres	
Economic	Possible – may involve competition. Also links between Near East and Aegean	Importance of long-distance trade in elite self-definition – disturbances in east would have affected Aegean	Links between palaces themselves and Near East were vital
System collapse	Cumulative effect of disturbances, perhaps from local to regional		Cause and result, explains widespread nature of collapse
Raiders, pirates and others	Instability in Near East, though Sea Peoples dubious. Raiding and some seizure of territory could have taken place		Effects on trade routes and sites, but not the same as Egyptian Sea Peoples
Earthquakes	Catalyst for	Possibly	Could have

	trouble or exacerbated existing situation		affected storage and otherwise caused problems, vulnerability and demoralisation
Climate and famine	Could have led to civil disturbances and conflict, not universal but perhaps in areas such as Messenia it would explain depopulation (though Linear B suggests no agricultural problem)	Possibly – would have been a destabilising factor	Could have been present as a trigger, or an extra problem
Plague/disease	Possibly	Possibly	
Rejection of ('Dorian' and other) migration theory	Yes	Yes	Yes

Table 3.2 Likely factors involved in the collapse, according to recent publications. Sources: after Hall 2007, 51-55; Bennet 2006, 209; Dickinson 2006a, 43-56.

Significantly, these three works reject migration from both the archaeological perspective and the use of Greek traditions. Rather than seeking to reconcile these two distinct categories of evidence, Greek traditions are appreciated for what they are and what they do and are placed squarely as evidence for how groups much later on perceived themselves, rather than anything to do with actual peoples or events at the end of the LBA (Dickinson 2006a, 51; Hall 2007, 43-51). Although there may be different emphases, for example Hall (2007, 55) stressed the interlinked economies of the palaces in Greece and between these and the Near East while Dickinson (2006a, 55,56) stresses inter-palatial and internal conflict, they both agree that many factors could have

played a role in triggering events or making a situation worse, and that a variety of individual local or regional scenarios are possible.

The collapse of the palatial societies is best explained as a complex set of interlinked processes and events that occurred over a period of perhaps three or more decades. It involved the internal structure of palace societies and their links with hinterlands and local elites as well as their relationships with the Near East. Palaces can be expected to have been competitive both internally and between themselves and it is not unlikely that this was expressed in warfare and combat. Localised environmental factors involving climate or earthquakes, as well as plague or epidemics, could easily have played destabilising roles and the severity and timing of these will have been significant, since if they coincided with other problems their effects could have been magnified, with different outcomes possible at different times. Since the palace-based societies seem to have been dependent on overseas links, any disruption of these links, either through actions far away or through competition for resources at home would have reduced the ability to maintain society in the same way and would naturally have resulted in restructuring. Seen in combination, the physical destruction of any palace in such circumstances would make it unlikely that it could have been rebuilt in the same way. The physical destructions and abandonments that mark the collapse simultaneously make clear and obscure the changing social relationships in Greece at the end of the palace period and into the postpalatial period. They show us the results of a problem but not the problem itself. The failure to rebuild the palaces and carry on as before suggests both rejection and inability,

which identifies social and ideological, as well as economic and organisational changes. Meanwhile, transformations in non-palatial Greece, which did not have palaces to collapse, indicate the wide effect of these changes. It is often suggested that these regions benefited from the demise of the palaces, but the increasing importance in the postpalatial period of regions that had not had palace societies, or had been peripheral to them, may in itself suggest a possible cause of the collapse that only becomes visible later.

4 The processes of collapse

Introduction

The aim of this chapter is to discuss some of the processes at work in other ancient societies that experienced collapses, in order to suggest by analogy the likelihood that similar processes were at work in the Mycenaean collapse. While Torelli (2000) notes that 'comparisons between cultures which are not themselves in contact are of uncertain significance and debatable value', he was concerned with interpreting figurative expressions, which may be expected to be laden with meaning unique to the cultures that produced them. Where instances of human interaction, the basis of all societies, are the focus, such comparisons are likely to be more useful, as Scarre (1994, 75) observes, 'some aspects of past human behaviour are naturally much more accessible to us than others.' It is altogether appropriate that, in the absence of texts, analogy can and should be used 'to stimulate your imagination' (Hawkes 1954, quoted in Scarre 1994, 75) even if it cannot be expected to provide proof of anything. As has been seen in the preceding chapters, incontrovertible proof and total consensus in archaeology are perhaps unachievable goals.

Nevertheless, for a non-specialist, such a task runs the risk of accepting conclusions in secondary sources that may be controversial or disputed, something for which Tainter (1988) and others have been criticised. However, what must be stressed here is that it is the social process and interactions that are the main concern, rather than the specific historical detail or conclusions about the ultimate causes of individual collapses. In order to avoid the

criticisms levelled at others for such syntheses, an effort has been made to make use of the most recent and authoritative research, some of which was introduced in chapter 2. Furthermore, there is no attempt to force this evidence into a single general explanation of the cause of collapse, rather the aim is to highlight the kind of problems that may have faced the Mycenaean palace states and been potential factors in their collapse.

This approach is necessary because of the difficulties observed in chapter 2, of applying any generic collapse theory to specific examples of collapse, and in chapter 3, of understanding the exact causes and process involved in the Mycenaean collapse. In fact, so little is known for certain of the operations of Mycenaean palace societies that these analogies can also prove useful for developing a deeper understanding of their dynamic nature. The three collapses chosen for discussion are those of the Hittites, the Classic Maya (hereafter Maya) and the Western Roman Empire. As outlined in the introduction and chapter 2, these have not been chosen for direct similarities either in material or non-material culture, and an obvious difference between Mycenaean palatial societies and the Hittites and Romans is the sheer scale involved. This is no necessary drawback in considering essentially human relationships. A major difference in our understanding of these societies and their collapses lies in the textual evidence they have left, which allows us to observe with far greater accuracy actual events and processes that were likely contributory factors to their collapse and fragmentation, features which can only be guessed at in the Mycenaean context.

The Hittites

The Hittite kingdom developed in the centre of the Anatolian plateau, in the Land of Hatti, early in the seventeenth century (Bryce 2002, 8-9; Figure 4.1).[12] In the course of some five centuries an empire was created covering much of Anatolia to northern Syria and western Mesopotamia and extending south to the Mediterranean and perhaps sometimes to Cyprus. In the west, its influence extended towards the Aegean, especially after the destruction of Arzawa by Mursili II in the period equivalent to Mycenaean LHIIIA2, and some contact between Mycenaeans and Hittites at a variety of levels and in a variety of contexts is likely, or if Ahhiyawa is accepted as a Mycenaean kingdom is certain (Mountjoy 1998; Bryce 2002, 257-261; Niemeier 1998, 41-43; Niemeier 1999 and 2005), although the Hittites relations with other Great Kingdoms to the east and south were more significant, at least in terms of international prestige (Bryce 2002, 9). These international relationships often had both political and military aspects.

The kingdom was ruled by a royal dynasty, and kings who claimed equal status with other Great Kings, who were in contact and rivalry with each other. It was inhabited by many different population groups and was multi-lingual and multi-ethnic (Bryce 2002, 252). Although there were universal laws and royal officials, many areas were governed by traditional laws and practices, and the emphasis was 'on local communities becoming as self-regulatory as possible, with less and less involvement by the central authority of the state' (Bryce 2002, 39). Like the Mycenaean palace societies, the Hittite kingdom collapsed

[12] Bryce (1998) is accepted by Hope Simpson (2003, 204) as the current reference work on the Hittites, although inevitably some specific historical points remain controversial.

c.1200 during the reign of the last king Suppiluliuma II (1207 - ?) and many similar reasons for this have been suggested (Bryce 1998, 367-391).

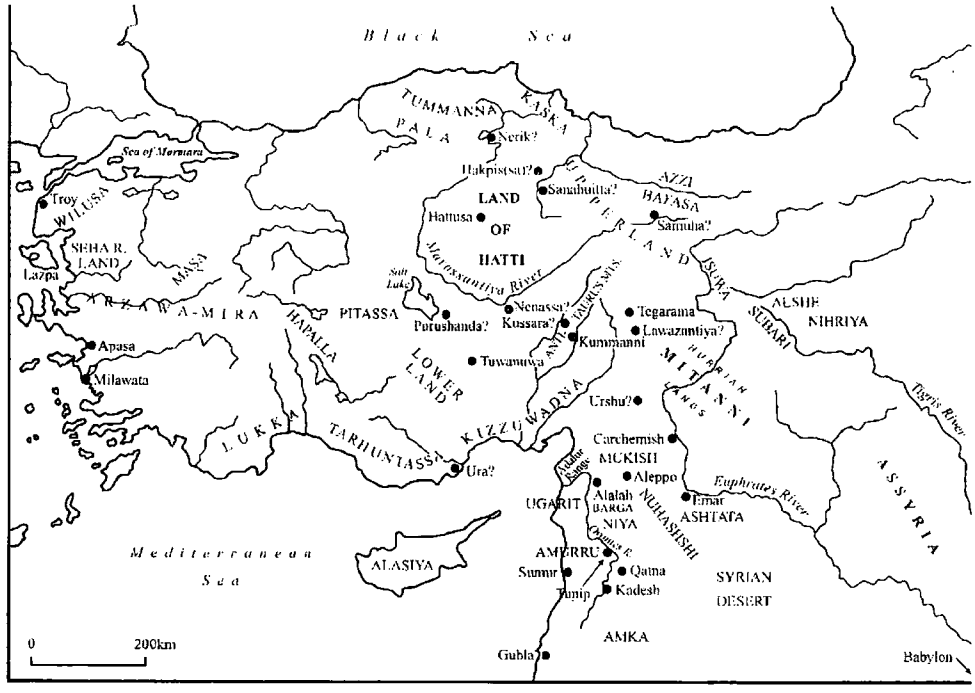

Figure 4.1 LBA Anatolia and the Near East. Source: Bryce 2002, Map 1.

The Hittite kingdom offers several advantages for the study of its collapse over that of the Mycenaean palace societies, although any interpretation remains far from straightforward, and of course the Hittite kingdom existed on a far grander scale (Bryce 1998, 374-379). Much more about its internal structure and external relations, as well as specific events, is known from the many tablets, whole and fragmentary, excavated at the capital Hattusa, as well as at various administrative centres, and these form the main source for Hittite history (Bryce 1998, 416-417). These archives contain a wealth of information of different kinds. The archive at Maşat, for example, is a record of correspondence between the kings and local officials much of it concerning dealings with the Kaska (Bryce 1998, 417 n.6). Also the tablets include:

> annalistic records relating the achievements of the kings who composed them, decrees, political correspondence, treaties between kings and their foreign counterparts or vassal rulers, administrative texts, edicts, a collection of laws, ritual and festival texts, and a number of mythological and literary texts (Bryce 1998, 424).

A further source of information comes from the royal correspondence in the Amarna Letters (Moran 1992), datable to the fourteenth century, and the later letters between the courts of Hattusili III and Ramesses II in the thirteenth century (Bryce 1998, 425). The prominence of texts over archaeology in Hittite studies is understandable, since the nature of the documentary evidence allows the writing of both narrative political history (Bryce 1998) and social history (Bryce 2002), although the two can be successfully combined (Macqueen 1986). Although they can never be more than analogy, the experiences recorded by the texts, which show the trials and tribulations of a LBA kingdom, are extremely suggestive for filling in the gaps that exist between the very limited Linear B records and Mycenaean material culture, since they show a range of contemporary political and social realities. These will be explored thematically and related to the Mycenaean situation.

Barbarians and vassals

As noted in chapters 2 and 3, barbarians have played an influential role in general collapse theories, and in theories of Mycenaean collapse, in the guise of Dorians, North Greeks, Sea Peoples, and as raiders, invaders and migrants. As such they may have been responsible for battles and expenditure,

destructions, agricultural problems and the interruption of trade routes. While certainly the evidence is unclear in the case of the Mycenaeans, the case of the Hittites offers a contemporary reality of a kingdom surrounded by potentially and actually aggressive enemies, only one group of which will be discussed here.

Throughout its history, the Hittite homeland was threatened by, amongst others, a people called the Kaska, 'a loose confederation of mountain kingdoms' or tribes, located in the Pontic region north of the Hittite homeland (Bryce 1998, 49). Early on they were noted as attacking northern Anatolian cities involved in trade with Assyrian merchants (Bryce 1998, 64). The Maşat letters also show that the Kaska would attack due to agricultural shortfalls in their own region, caused by plagues of locusts or other adverse conditions (Kuhrt 1995, 257). It is also likely that they attempted some degree of territorial expansion. The threat posed by the Kaska was very real and on several occasions they successfully invaded and occupied Hittite territory even resulting in the effective abandonment of Hattusa as the capital and the relocation of the court south to Tarhuntassa (Bryce 1998, 49: Bryce 2002, 17-18, 232-233). The Hittite response was to create a buffer zone in the north-east and also to engage in regular warfare (Macqueen 1986, 53-54; Bryce 1998, 49).

Events during the reign of Mursilis II (c.1321-1295) show the persistent threat they represented. On his accession, the Kaska had already been attacking Hittite territory and the death of the governor sent to deal with them intensified

the crisis caused by the death of Arnuwanda II (Bryce 1998, 207). For the first two years of his reign, Mursilis fought punitive campaigns against the Kaska before having to turn his attention to problems elsewhere (Bryce 1998, 209). In the fifth year of his reign he was forced to deal with their continuing aggression and their attack on Hattusa itself in the most ruthless of ways. He attacked and conquered the Kaska land of Ziharriya, slaughtered the population and burned its city (Bryce 1998, 215). Such campaigns took up much of the second half of Mursili's reign (Bryce 1998, 234).

It is likely the Kaska were difficult for the Hittites to deal with for a variety of reasons, not least their proximity and the vulnerability of the northern homeland to attack from Kaska regions (Bryce 1998, 49). Even following defeat in battle, the Kaska were difficult to integrate as subjects because of the 'absence of any clear coherent political structure' similar to other peoples, which meant that 'the Hittites had no firm foundation on which to attempt to build a vassal state system in the Kaska region' (Bryce 1998, 235). Thus treaties between the Hittites and Kaska involved communities of Kaska (Kuhrt 1995, 257). However, while the Kaska had towns and cities and apparently organised themselves as a tribal people sometimes with leaders, who may on occasion have acted in concert, attempts may have been made by individuals to increase their own power and influence, and one Kaska chief or neighbouring dynast who had managed to become a Kaska chief, Pihhuniya, was noted by Mursili II as ruling 'in the manner of a king' (Bryce 1998, 215; Kuhrt 1995, 257-258). In fact, he was able to incorporate the Upper Land, north-east of the Hittite homeland, into Kaska territory. An alternative policy of repopulating

areas wasted by constant war in order to increase the effectiveness of the buffer zone was also attempted, although this proved ineffective (Bryce 1998, 243). There were peaceful contacts also between the Hittites and Kaska, some of whom were recognised as allies. However, even the allied Kaska, though granted some grazing rights and access to Hittite territory, were banned from settling in Hittite towns, and this policy is likely to have created some resentment and tension (Bryce 1998, 272).

In the reign of Tudhaliya IV (c.1237-1209), shortly before the collapse of the Hittite kingdom, the Kaska and others remained a serious threat (Bryce 1998, 337). The subsequent short-lived kings Arnuwanda III and Suppiluliuma II probably continued to face this threat and Bryce (1998, 379) has suggested that:

> However one explains the weakened state which led to its destruction – internal political instability – severely depleted defence capabilities – communication networks and supply lines in disarray – critical shortages of food and other resources – the royal capital perhaps fell victim, finally and irretrievably, to an enemy who had plagued the Hittites from almost the beginning of their history, an enemy over whom they had triumphed, but from whose menace they had never been completely secure.

The Kaska show the capability of neighbouring, but less centrally organised, peoples to defeat a complex Late Bronze Age state with an army, destroy the capital of a powerful and extensive empire, displace its royal court for

considerable periods, annex part of its territory, and pose a long-term threat that diverted both attention and resources from other matters. The Linear B records are mute in terms of recording such enemies in Mycenaean Greece, but one piece of evidence could suggest that barbarians and palatial forces might have fought, although it is open to several interpretations, which prevents a definite conclusion being reached.

The Pylos 'Battle Fresco' was mentioned in chapter 3, and appears to show palace warriors confronting skin-clad enemies near a river (Davis and Bennet 1999). Some interpret the scene as depicting perhaps the foundation myth of Pylos or another mythical scene, but it may equally represent real enemies although depicted in a way that suited the palace ideology, creating a clear distinction in identity. There may also have been a similar fresco at Mycenae (Hood 1978, 80). Such characterisations of the other are familiar themes in self-definition and need not be accurate representations. Yalouris (1989, cited in Torelli 2000) has identified the battle depicted with one from the *Iliad* (7.133-137), but even despite the major problem of accepting that the Homeric poems recall any specific events from the LBA, the enemy being fought by the Pylians, or at least their leader Ereuthalion, wore armour. While it may be doubted that any inhabitants of Greece would be wearing skins to battle in the late palatial period, or that there were particularly warlike or less Mycenaean people in Greece, even in non-palatial areas, some small scale local raiding 'from the rougher or poorer parts of the Greek mainland' or conflict could have taken place (Dickinson 2006a, 48, 50).

Vassals also played a destabilising role in Hittite affairs but at the same time were part of the process of Hittite expansion and attempts at consolidation (Kuhrt 1995, 266-270). Vassalage was imposed by Hittite kings through treaties with individual rulers that included military and tribute obligations and often marriage alliance with a Hittite princess, in which she was to be accorded a higher status than other wives and her children were to succeed to the throne (Bryce 1998, 51). Treaties sought to ensure that vassals were loyal to the Hittite king and forbade them from concluding treaties or having military or political dealings with other rulers. This was especially important in attempting to forestall coalitions against the Hittites themselves and could offer some, usually temporary, stability (Bryce 1998, 52). Nevertheless, 'Hittite kings were often plagued by treacherous behaviour from disloyal vassal rulers and by rebellions in vassal states which overthrew their pro-Hittite rulers' (Bryce 1998, 53). The independence of Tarhuntassa sometime during the reign of Tudhaliya IV, where for some time the Hittite capital had been located, and loss of control of the port of Ura, where grain shipments were probably received, may have proved particularly damaging (Bryce 1998, 364). Needless to say, any particularly inopportune combination of uprisings by vassals along with attacks by the Kaska and others could prove extremely difficult to deal with, even more so if other negative factors were also present.

Although the Mycenaean palace states were smaller units, their process of expansion into overarching power structures probably meant the incorporation of pre-existing local elites, and in some cases this may have had similarities with vassalage. When Pylos expanded its influence into eastern Messenia,

which became the Further Province (Beyond-Aigaleon), it seems to have done so at the expense of Leuktron (Bennet 1995). Leuktron may originally have expanded in parallel with Pylos, as a local elite/royal centre in its own right, only later to become subordinate to Pylos, but it is possible that there may have been some sort of vassal relationship between them. Other palaces may also have had vassal-type relationships with local centres. As mentioned in chapter 1, Thebes appears to have had influence over southern Euboea and perhaps even the island of Aegina. This need not have involved direct rule from the palace but may have been more like a vassal relationship, with a high degree of local autonomy and duties to fulfil specific obligations to the centre. Although the interrelations of sites within the Argolid is problematic, if this region did seek control of or influence over some the Aegean islands, this may also have been similar in nature. At any rate, interrelations between elites whether involving vassalage, alliance or more direct incorporation could have been as problematic for the Mycenaean palace states as they were for the Hittites, and any concentration of military forces away from the centre could have been dangerous, leaving it vulnerable, as was the case for Hattusa.

Plague and famine

The texts reveal some evidence for factors that might otherwise remain invisible from an archaeological perspective: occurrences of plague and the possibility of famine. A virulent plague is known to have occurred beginning in the last years of Suppiluliuma I (c.1344-1322) and to have continued well into the reign of Mursili II (Bryce 1998, 223). Although it is difficult to ascertain the damage caused by the plague or its distribution, Mursili's plague

prayer notes widespread depopulation and some of its effects, particularly on agriculture and production connected to the practice of cult, which may be expected to have been of interest to the gods. There would likely have been effects outside this sphere, and Amarna Letter 35, from the king of Alashiya, similarly connects the death of coppersmiths and reduced production with plague (Moran 1992, 107). It is significant that in Mursili's prayer, plague is also linked with hostility from surrounding areas:

> The Land of Hatti, all of it, is dying; so that no one prepares sacrificial loaves and libations for you. The ploughmen who used to work the fields of the god are dead... Man has lost his wits, and there is nothing that we do aright...
>
> O gods, take pity on the Land of Hatti! On the one hand it is afflicted with a plague, on the other it is afflicted with hostility... Now all the surrounding countries have begun to attack the Land of Hatti (Bryce 1998, 224).

This plague may have been responsible for the death of Mursili's brother and predecessor, Arnuwanda II, their father Suppiluliuma I, and possibly the governor sent by Arnuwanda to deal with the Kaska (Bryce 1998, 207). Although there is no mention of any plague affecting the Hittites c.1200, it must be remembered that plague may reoccur over long periods of time and that the record provided by the tablets is not complete. The archives at Hattusa 'must have suffered substantial damage and disruption' due to attacks and the relocation of the capital, as well as removal and rebuilding on site (Bryce 1998, 417-418). Any plague that may have affected one or other of the Mycenaean

palace states could similarly have laid them open to serious vulnerability from others, as well as disrupting agriculture and production and society in general, although it must be noted that the plague that affected Athens in 430, which does not appear to have spread, did not lead immediately to the loss of the Peloponnesian war nor indeed to the collapse of Athens (JACT 1984, 28-29).

An increasing concern with securing grain from Egypt and Canaan has also been noted from the middle of the thirteenth century, leading some to suggest that there was long term famine, perhaps due to drought or climatic factors, although human interference is an equally likely cause (Bryce 1998, 356, 375). In a letter to Ramesses II, the Hittite queen Pudehepa referred to a lack of grain in her lands (Bryce 1998, 356 n.115). A Hittite prince was sent to Egypt to organise what Bryce suggests were regular imports from Egypt, which must have come up the Levantine coast to Ugarit and thence to the port of Ura in Tarhuntassa (Bryce 1998, 356-357). It is difficult to ascertain how dependent on these shipments the Hittites became, for it seems unlikely that the population as a whole could have been supplied in this way. It may be more likely that these shipments were directly connected with the royal family either for their upkeep or for use as disbursements in some way. However, texts from the reign of Tudhaliya IV continue to refer to the importance of imports and the existence of shipments from Egypt 'to keep alive the land of Hatti' were also referred to by Merneptah (Bryce 1998, 365). One shipment of grain from Mukis, delayed in Ugarit owing to the lack of a ship and crew, was referred to in a letter to the Ugaritic king as 'a matter of life and death' (Bryce 1998, 365). Such imports were vulnerable to disruption at any stage on their journey and

any reliance on them will have been a serious risk. When control over the port of Ura in Tarhuntassa was lost, Tudhaliya IV and his successors may have been placed in particular jeopardy (Bryce 1998, 364).

Although as in Greece there is a lack of positive evidence for any specific unusual drought, problems with agricultural production could have occurred for many reasons, including lack of human resources due to plague or war while internecine warfare and raiding may have made some lands unfarmable, and all of these were problems that affected the Hittites (Bryce 1998, 375). Shortage of food and security of supply was of concern at the highest levels and a hungry populace would have provided a real threat to stability if not dealt with (Dickinson 2006a, 55; Levick 1990, 109-110). While it is uncertain that the Mycenaean palace societies traded with or relied on each other in terms of basic subsistence foods, any localised problem could have encouraged raiding of neighbouring areas or attempts at territorial expansion. Occurrences of plague and food shortages could certainly have been destabilising factors for the Mycenaean palace societies and were ones that existed at the same time in neighbouring regions.

Divided loyalties

Vassalage and its downsides have been discussed above, but another potential problem faced by the Hittites was that of the royal family itself. Even in its earliest days, the issue of succession was to prove a problem with significant ramifications for the unity, integrity and stability of the Hittite kingdom. The

first instance of this is instructive, since it sets a model for similar events that happened throughout the history of the kingdom.

The first Hittite king, Labarna (c.? – 1650), attempted to appoint his son and presumed heir, Labarna, as governor of Sanahuitta, a newly conquered city, but this appointment was disputed by the kings's other sons, 'his servants and the great men' and never took place (Bryce 1998, 71-72). Instead, one Papadilmah was appointed, Sanahuitta rebelled and the young Labarna may not have survived. The next king, Hattusili I (c.1650-1620), attacked Sanahuitta but failed to topple the rebel regime or recapture the city (Bryce 1998, 74). Hattusili also appointed his sons as governors of conquered territories but he noted that 'until now no member of my family has obeyed my will' (Bryce 1998, 90). Two of his sons rebelled, one encouraged by the local inhabitants, but both appear to have been put down (Bryce 1998, 90). Another rebellion occurred at Hattusa, involving nobles and the king's daughter, who had male children. She 'made Hattusa and the court disloyal; and the noblemen and my own courtiers opposed me' (Bryce 1998, 90). Hattusili, having no worthy sons, was forced to adopt his nephew as his son and heir, but this was soon reversed as the nephew appears to have been overly influenced by his mother and family and his kingship threatened further violence and disruption. At last he appointed his grandson Mursili as heir (Bryce 1998, 94).

Thus there was amongst the royal family and other influential figures a predisposition to intrigue, which threatened to destabilise the kingdom at any time. The mid-thirteenth century saw a struggle for power between Urhi-Tesub

and his uncle, who became Hattusili III, which divided the loyalties of subjects and vassals alike (Bryce 1998, 284-288). In Hattusa itself, this civil war may have led to looting and destruction in violent clashes between opposing sides (Bryce 1998, 289). Hattusili also tried to ensure that only his descendants, not those of Urhi-Tesub, could inherit the throne. These problems of legitimacy and loyalty plagued Hattusili's heir, Tudhaliya IV, in the late thirteenth century, and his statement is notable and worth quoting at length,for expressing a concern that has faced many dynasties:

> My Sun has many brothers and there are many sons of his father. The Land of Hatti is full of the royal line: in Hatti the descendants of Suppiluliuma, the descendants of Mursili, the descendants of Muwatalli, the descendants of Hattusili are very numerous. With regard to kingship, you must acknowledge no other person (but me, Tudhaliya), and protect only the grandson and great grandson and descendants of Tudhaliya. And if at any time (?) evil is done to My Sun – (for) My Sun has many brothers – and someone approaches another person and speaks thus: 'Whomever we select for ourselves need not even be a son of our lord!' – these words must not be (permitted). With regard to kingship, you must protect only My Sun and the descendants of My Sun. You must approach no other person (Bryce 1998, 332).

However, there is some evidence that there was another coup, in which Tudhaliya's cousin, Kurunta, whom he had recognised as king of Tarhuntassa, became king for a short time in Hattusa and this probably led to the loss of

Tarhuntassa, which became hostile to the Hittites (Bryce 1998, 335, 354-355). The last king, Suppiluliuma II, son of Tudhaliya IV, also faced serious discord on his accession, as had his brother Arnuwanda III, who ruled for only a year (Bryce 1998, 361). This may well have been linked with continuing disagreement over which branch of the royal family should have ruled (Bryce 1998, 362). However, in the midst of these internal problems, he was faced with widespread disobedience from vassals and, uniquely, the divorce of a Hittite princess by the son of the king of Ugarit (Bryce 1998, 363). This may indicate the diminished respect and authority the Hittite king could command at this point.

Dynastic intrigue and opportunism was ever present throughout the history of the Hittite kingdom and this involved members of the royal family and the nobility whose support was necessary for any king (Bryce 1998, 92). If we assume that the *wanaktes* of the palatial kingdoms were kings in a similar sense, and members of ruling dynasties, then it is likely that they faced similar problems. Although we know nothing of their marriage or succession arrangements, it could be expected that, over time, the number of royal descendants would increase, and that this might cause tensions between competing groups who could use these figures as a focus of intrigue. Accepting Ahhiyawa as a Mycenaean kingdom, it seems that the king's brother Tawagalawas seems to have had responsibility in the eastern Aegean islands and coastal Asia Minor (Bryce 1998, 321), although these areas were largely autonomous (Gurney 1990, 40-41). Whether Tawagalawas acted according to the wishes of his king and brother, or acted opportunistically or in his own

interests, or a combination of the two, must remain speculation, but at least it provides a context in which there was a potential for intrigue and the existence of different power bases within a kingdom. Mycenaean kings may have similarly used family members to rule particular areas or to undertake campaigns or expeditions. While this could be an effective method of rule and maintaining the dominance of one family, there were no foolproof ways for a king to command the loyalty of his own family, let alone other nobles or subjects, and the following description of the problems that faced Hattusili I are generally applicable: 'without doubt his regular absences on military campaigns exacerbated the political problems he faced at home, problems which led to faction, strife, rebellion, and great loss of life and property' (Bryce 1998, 99).

A push too far and the failure of strong central leadership?

The above discussions set in context the problems encountered in maintaining the integrity and existence of the Hittite kingdom. It must be said that it successfully survived many extremely serious situations, but past survival was no guarantee of future success and the kingdom of Tudhaliya IV, towards the end of the thirteenth century, has been characterised as 'a kingdom coming under mounting pressures' (Bryce 1998, 358). On top of dynastic issues, military threats existed on all sides of the kingdom, yet apparently Tudhaliya apparently chose to engage his forces on Alashiya, generally accepted to be Cyprus (Steel 2004, 185-186), and claimed to have made it tributary and to

have seized its royal family (Bryce 1998, 356).[13] If these claims are valid, this may be linked to an attempt to secure shipping routes that a hostile Alashiya, or hostile forces based in Alashiya, could have disrupted; these would have been important in the context of grain shipments and other trade (Bryce 1998, 357-358). Such a campaign may have diverted Hittite manpower and resources and could easily have encouraged problems elsewhere. In fact, if this happened it may have posed a greater problem than a solution in the long run.

Suppiluliuma II is later recorded as successfully fighting three naval battles against Alashiya and one land battle, which Bryce suggests also reflect a concern with supply routes (Bryce 1998, 365-366). Who exactly these enemies were is not known and other evidence combines to provide a confused picture. Since the Hittites are not known to have had a navy, and they had lost their province of Tarhuntassa and its port of Ura, it is supposed that Ugarit provided their naval capacity (Bryce 1998, 366). Whatever problems may have been affecting the relationship between Ugarit and Suppiluliuma, he was evidently still able to count on their aid, since a letter from the last king of Ugarit in response to a request for aid from the king of Alashiya notes that 'all my troops and chariots(?) are in the Land of Hatti, and all my ships are in the Land of Lukka' (Bryce 1998, 367). Suppiluliuma is also recorded as having conquered and annexed many western lands, including the Lukka Lands, as well as Tarhuntassa, although if this was the case, it does not seem to have lasted (Bryce 1998, 364).

[13] Steel (2004, 184-185) notes the implication, in the Hittite archives of the fifteenth century, that Alashiya was a tribute paying vassal state, although this can not be demonstrated archaeologically. The extent of real, as opposed to claimed, direct control may be doubted, although it may be that in the hierarchy of international relationships, the Hittites were still the stronger party in the thirteenth century.

The exact nature of Mycenaean political and military involvement in the eastern Aegean and western Asia Minor is unclear, although some activity seems likely (Niemeier 1999) and the Ahhiyawan Tawagalawa was evidently involved in activities to do with the Lukka Lands and thus into contact with the Hittites (Bryce 1998, 321). It is quite possible that one or other Mycenaean kingdoms could have become equally entangled in too many, too distant or too difficult projects, and that this led to a failure at the centre, resulting in fragmentation of the polity. Local powers and other palace states would have sought to capitalise on such events. This is perhaps a likely enough scenario even in the mainland and Aegean area itself, without necessarily having to accept a Mycenaean answer to the Ahhiyyawa question.

Despite these pressures evident prior to the collapse of the Hittite kingdom, Tudhaliya IV and Suppiluliuma II were able to mobilise significant resources for construction at Hattusa and military campaigning, and it would be difficult to suggest that a collapse was predictable or inevitable, even under these strained circumstances, although the later texts may be more optimistic than truthful in content (Bryce 2004, 254-256). This is cautionary for those who seek to identify decline or to see it as a necessary preamble to collapse. As Bryce notes of Tudhaliya IV: 'this king has left some enduring tangible monuments to his reign – more enduring than those left by the kings who reigned in what might be regarded as the peak periods of Hittite power' (Bryce 1998, 359). While expenditure on monumentality has been linked with the collapse of the Hittites and the Mycenaean palace societies, there is no simple

equation between excessive expenditure and collapse. What it suggests is that there is no clear-cut equation of the creation of monumental architecture with long or even short-term stability, but equally there is no clear indication that the creation of monumental architecture must lead to collapse. In fact, in terms of Mycenaean, Maya, and Egyptian monumental architecture, recent studies of labour requirements show that these need by no means need have placed any undue or unusual pressure on society (Loader 1998, 65-73; Evans 2004, 340-341; Manley 1996, 28).

Continuities

It seems likely that circumstances combined to make the long-term survival of the Hittite kingdom extremely unlikely, despite the fact that it had managed to survive for so long. Although the Hittite kingdom as it had existed disappeared along with Suppiluliuma, with Hattusa and other sites destroyed and abandoned, the destructions were limited to particular areas, and abandonment was more prevalent, and Bittel (quoted in Bryce 1998, 381-382) stated that 'though politically the attack by its neighbours was disastrous for Hatti, the loss of life must not be exaggerated.' Mobility of population rather than 'widespread destruction and massacre' seems to have followed the collapse. Regions and peoples peripheral to the Hittites, such as the Lukka continued to develop through to the classical period, retaining some elements of LBA culture in the names of their gods and their language (Bryce 1998, 382). Tarhuntassa also may have continued to exist as a kingdom and several areas show continuity and 'a stable population' indicated by the retention of LBA place names (Bryce 1998, 383). It is even possible that 'Great Kings' named

Mursili and his son Hartapu continued to rule in Tarhuntassa, and that these were descendants of Kurunta, as may be suggested by several incriptions which appear datable to just after the fall of Hattusa, or that the Mursili was in fact Urhi-Tesub and Hartapu was his son (Bryce 1998, 386).

A branch of the Hittite royal family also continued to rule for several generations at Carchemish, despite its alleged destruction (along with Hatti, Qode, Arzawa and Alashiya) by the Sea Peoples as recorded by the Egyptians (Bryce 1998, 384). One king, Kuzi-Tesub, who seems to have outlived Suppiluliuma II, adopted the title of 'Great King', which may indicate the demise of the main branch of Hittite royalty and that a Hittite kingdom of Carchemish survived the collapse (Bryce 1998, 384; Caubet 2003, 18). His grandsons also ruled as kings in the east and the title was retained by the kings of Carchemish from c.1150-1000, despite reductions in territory (Bryce 1998, 384; Caubet 2003, 18). Bryce (1998, 384) speculates that 'particularly perhaps the more elite elements of Hittite society, including members of the royal court' could have settled there and 'created an environment not unlike that of the palace society at Hattusa.' Despite this continuity, which persisted in the creation of Hittite style monuments, sculptures and hieroglyphic inscriptions, the kingdom continued to fragment into smaller units and new kingdoms, although the region itself became known as the Land of Hatti (Bryce 1998, 385).

In the Lower Land, south of the Hittite homeland, a much later kingdom of Tabal existed, formed from several smaller states (Bryce 1998, 387). Their

traditions show 'significant continuity of traditions from the Late Bronze Age Hittite world through the succeeding Dark Age down into the first millennium' (Bryce 1998, 387). Furthermore, the descendants of the Kaska appear to have still been present in the vicinity (Bryce 1998, 387-388). This picture of varied cultural and political continuity and change accords fairly well with that of the collapse of the Mycenaean palaces.

The Classic Maya

Some recent theories to account for the collapse of the Classic Maya were discussed in chapter 2, where it was noted that monocausal explanations had been largely discredited as failing to explain the long and varied pattern of events in different regions. Rather, emphasis is increasingly placed on internal, local and regional events and the interplay of social and environmental factors. Here, after a brief orientation, some specific instances of collapse will be discussed, since they provide likely analogues for events in LBA Greece.

Unlike the Hittites but like the Mycenaeans, the Maya never constituted one unified political body, either a state or an empire. Rather, there existed a Maya civilization or culture zone throughout and to the south and west of the Yucatan Peninsula in a variety of very different regions (Coe 1999, 14-32; Webster 2002, 294; Demarest 2004, 10-12 and Fig. 2.2). While there is a degree of cultural similarity within the zone, there was much variation between individual sites and regions with each of the many polities 'adapted to the unique features of its natural and social environment' (Webster 2002, 177).

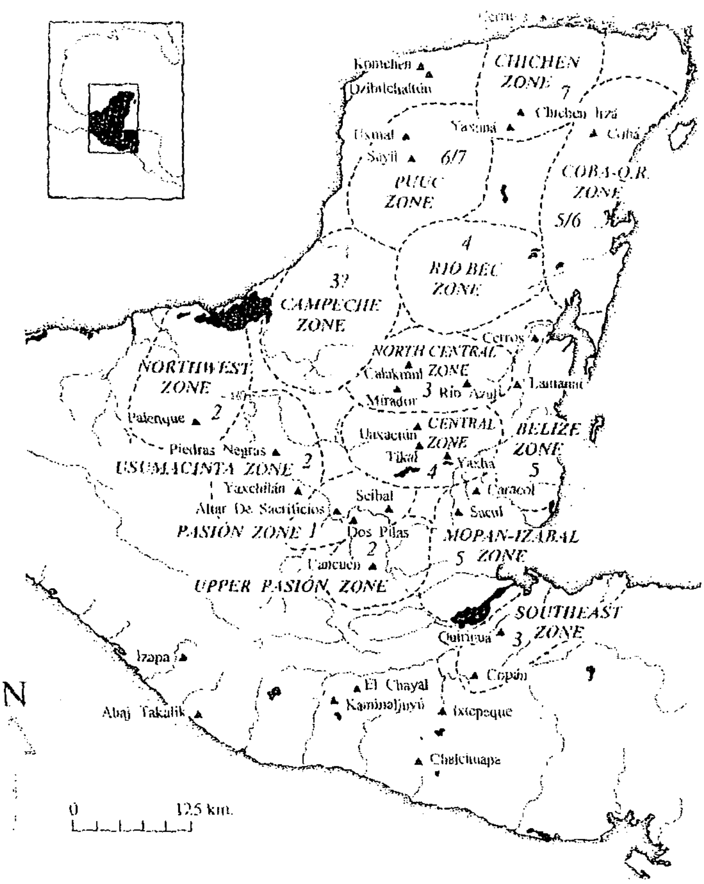

Figure 4.2 Terminal Classic Maya regions and major sites with approximate order of collapse/transitions. Source: Demarest 2004, 227 Figure 9.10.

The Classic period (c. AD300-900) is defined by the widespread occurrence 'of distinctive forms of the ancient Maya writing and calendric systems in carved stone texts, as well as polychrome ceramics, corbelled vault or false vault stone architecture, the stela-altar monument complex' and the 'Ajaw complex' an emphasis on the 'ideology of divine kingship in art, iconography and politics' (Demarest 2004, 15-16). The collapse of the Classic Maya involved the ending of 'divine kingship, along with the elite-run social, political, and administrative hierarchies and economic support systems it entailed' together with a 'major change in archaeologically visible aspects of the lowland political and economic system, as well as population levels and distributions' and this is

now chronologically defined as the Terminal Classic (c.AD750-1050) (Demarest *et al.* 2004b, 545, 569, 572).

The Maya thus appear, in a general sense, to have had some similarities with the palatial Mycenaeans. In both cultures, independent competing polities existed, linked by a variety of social and economic networks, rivalries and alliances (Demarest 2004, 222-228). They are defined by the existence of particular styles of kingship, ideology and social structure, which were expressed materially through architecture and iconography as well as texts (Webster 2002, 119-136). There were extreme differences between sites: as well as major sites, there were a variety of smaller centres and some areas existed without such organisational systems, which corresponds to a similar variety in Mycenaean Greece (Webster 2002, 163-170; Small 1998 and 1999). Small (1998) in fact has suggested that Mycenaean society may have been similar to Maya society, being based on lineage units or individual households, rather than forming a state, and suggests that this can explain the presence of extremely large central sites.

Despite linguistic differences across the region, 'one prestige language was used everywhere in the inscriptions' and this facilitated inter-elite relations (Webster 2002, 158). This also seems to be the case for Greece, the Aegean and Linear B (Postgate in Voutsaki and Killen 2001, 160). Another similarity seems to be that long-distance trade networks in prestige-related goods or resources were vital for supporting elites that controlled them, while other trade and production may have been decentralised and not an elite concern

(Demarest 2004, 160-164, 173). In the Terminal Classic, these defining features of the Classic Maya were abandoned and transformed at different times for different reasons and in a variety of ways marking a 'change in the regional manifestation of Classic Maya civilization, particularly political systems and political ideology' (Demarest *et al.* 2004b, 546). The rest of this section will examine some specific aspects of the collapse, transformation and continuity that suggest comparison with the collapse in LBA Greece.

Dynasties, alliances and warfare: the collapse in the Petexbatun

The collapse of Classic Maya political systems appears to have occurred earliest in the western Petén region and particularly in the Petexbatun region and systematic research has revealed 'a clear and consistent, albeit complex, sequence of events ' (Demarest 2004, 249; Figure 4.2 'Pasion zone'). In AD648, B'alaj Chan Kawil and his followers established themselves at Dos Pilas (Webster 2002, 275). He may have been the son of a king of Tikal, located some 100km to the north-east (Figure 4.2 Central zone), and probably had ambitions to rule at Tikal itself, since he and his successor used the emblem glyph of Tikal's kings (Webster 2002, 275). B'alaj Chan Kawil allied himself with Tikal's great rival, Calakmul, located almost 200km to the north of Dos Pilas (Figure 4.2 North central zone), but following Calakmul's defeat of Tikal in AD657 he did not become king in Tikal (Webster 2002, 276). Tikal subsequently attacked Dos Pilas, in AD672, driving B'alaj Chan Kawil into a five-year exile (Webster 2002, 276). After he returned, relations between Dos Pilas and Calakmul were reinforced by mutual visits: B'alaj Chan Kawil attended the enthronement of Yich'aak K'ak' in AD 686 and Calakmul nobles

are attested at his own court in Dos Pilas (Webster 2002, 276). Calakmul may have used Dos Pilas to increase its influence in the region by assisting Dos Pilas in the conquest of other centres, and the 'Calakmul alliance' indeed controlled this area, key to the exchange of prestige goods, until the end of the eighth century (Demarest 2004, 249; Webster 2002, 288-289). However, in AD695, Calakmul itself was heavily defeated by Tikal, and Dos Pilas 'remained as the great military power' of the region, extending its regional influence through warfare, alliance and intermarriage (Demarest 2004, 249). A second dynastic seat was established at Aguateca (Demarest 2004, 250).

Then, around AD760/761, Dos Pilas collapsed and several proximate causes are identifiable (Demarest 2004, 251). Dos Pilas itself was attacked, destroyed and largely abandoned, its ritual throne overturned and smashed, by the vassal king of Tamarindito, and foreknowledge of direct military threat is indicated by the rushed fortification of it and nearby sites, using material taken from temples and palaces and the construction of a 'densely packed siege village' within the walls (Demarest 2004, 251-254 Figures 10.5-10.8).

However, it seems that the royal family and nobles moved to the much more defensible centre of Aguateca, with its deep gorge to the east and cliffs to the west, and this site too was hastily fortified with 5km of walls (Webster 2002, 277; Demarest 2004, 252-253 Figure 10.7). This site lasted until around AD800 before it was abandoned by the 5th Dos Pilas ruler (Webster 2002, 277), but the palace was ritually destroyed, and the elite houses burned and abandonment of household objects suggest attack. What remained of Dos Pilas

was also destroyed just after Aguateca (Webster 2002, 277). Again it is likely that the surviving elite moved to other locations with which they were linked.

Between AD761-830, the Petexbatun region 'collapsed into a state of endemic warfare' creating a ''landscape of fear'' (Demarest 2004, 253). Long distance trade routes and local exchange were interrupted and the population moved to defensible sites and neighbouring regions, as indicated by excavation and survey (Demarest 2004, 253; Webster 2002, 277). This nucleation could have produced agricultural problems through the intensive farming of defensible areas, and some areas of rich soil were themselves palisaded (Demarest 2004, 253-255; Webster 2002, 277). Significant depopulation also occurred (Demarest 2004, 252). There are several likely causes of this situation.

Dos Pilas may have relied heavily on the support of Calakmul, and despite initial successes, could have become increasingly vulnerable following Calakmul's defeat (Webster 2002, 277). Calakmul in fact remained influential until much later, but seems to have chosen to look north, rather than south after AD750 (Braswell *et al.* 2004, 190). It is likely that there were problems with vassals and nearby polities 'seem to act more independently in the late 8th century' (Webster 2002, 277). After the destruction of Dos Pilas, it is plausible that Aguateca, Tamarindito, Seibal and La Amelia all competed for regional dominance (Webster 2002, 277). By AD830, the Petexbatun had only one remaining major centre, Punta de Chimino, located on a peninsula in Lake Petexbatun and cut off from the mainland by a massive moat; however this site and the remaining hamlets appear to have been gradually abandoned in the

ninth century (Demarest 2004, 255). At Punta de Chimino and Seibal, new sculptural and architectural forms, based in older traditions and representations of new costumes and styles, may have 'been part of an experimentation with new legitimating ideologies' but even these were eventually abandoned (Demarest 2004, 261).

This collapse seems to have been caused by competition for royal power, inter-elite competition and status rivalry, and the need to acquire (or stop others acquiring) high status goods, thus these stresses 'were created by the K'uhul Ajaw system itself' (Demarest 2004, 257). In turn, this led to a situation in which instability and warfare were endemic and evolved 'into more widespread conflict as the basic infrastructure of the region was disrupted' (Demarest 2004, 257). These problems at local and regional levels were also linked to the formation and fragmentation of 'galactic polities', networks of influence that the biggest centres such as Tikal and Calakmul attempted to forge, where rulers might claim some paramount status over other rulers and their wars 'reflect vast geopolitical conflicts, not mere local squabbling' (Demarest 2004, 259; Webster 2002, 169). Continuity and new adaptations of older traditions occurred at some sites, following the demise of others, but this did not last (Demarest 2004, 261).

Although the political interrelations and narrative histories of Mycenaean kingdoms cannot be reconstructed, it may be that, as polities of different levels,

some sought to dominate others, in a similar way to the 'galactic polities'[14] of the Maya, and this could have fostered rivalries and intense military competition between and in different sites and regions. It is well know that armies of classical times could move about Greece and fight at some distance from their homes and the same mobility and reach could be expected in the LBA. Some regions, like the Argolid, with a dense concentration of important sites, could have been particularly vulnerable to conflict and competition, but equally Orchomenos and Thebes, and the citadel of Gla could have been local rivals, and deliberate destructions at various stages before c.1200 may be linked to this. Pylos too was part of this scene, although seemingly with no near rival palace, but it surely must have taken part in the supra-regional palatial political scene. This stretched overseas to Crete, to Knossos and Chania, and we should expect that rivalries would have played out on the mainland and at sea.

It is most unfortunate that the texts do not record the details of alliances and intermarriages, which undoubtedly took place, for we would have a much more dynamic and realistic vision of the Mycenaeans. It is important to note, however, that unlike some of these late Maya fortifications, the Mycenaean fortifications do not reflect sudden danger, since they were probably built over longer periods (Loader 1998, 65-73), nor do the citadels appear to have been changed into siege-type sites. It may be that there was no need to improve on the major defences that already existed.

[14] Galactic polities – a term for polities that could rapidly expand through warfare and other means into regional powers or hegemonies, in which rulers would attract the allegiance of 'satellite' sites or regions (Demarest 2004, 216).

Power sharing at Copán: the failure of divine kingship

Copán was a major centre in the south of the Maya region (Figure 4.2 South-east zone; Demarest 2004, 215). It had relations that probably included kinship links and trade with the neighbouring site of Quiriga and sites further away in southern Belize, and was loosely allied to Tikal, far to the north (Webster 2002, 298, 300). Copán's 13th ruler, Waxaklajuun Ub'aah K'awiil, seems to have been important in the region, since he oversaw the enthronement of Quiriga's 6th ruler in AD724 (Webster 2002, 300). However, on one visit to Quiriga, his religious symbols were seized or defiled, and he himself was ritually killed in AD738 in what may have been a coup, perhaps even involving distant Calakmul (Tikal's rival).

Under its next ruler, Copán appears to have experienced a loss of prestige and decline, indicated by a lack of inscriptions and major construction, whereas Quiriga erected giant stelae celebrating their victory (Demarest 2004, 233). The final king of Copán, Yax Pasaj, was enthroned in AD763 and ruled for some 47 or more years, and during the first half of his reign at least he was able to undertake an impressive building program (Webster 2002, 301). Despite this apparent resurgence, including some renewed contacts with Quiriga, where Yax Pasaj carried out a ritual in AD810, divine kingship at Copán seems to end with him, or a short-lived successor (Webster 2002, 318). Some time later, some parts of the royal palace was burned, its precincts abandoned and public construction ceased and this appears to have been followed later by significant depopulation (Demarest 2004, 265; Webster 2002, 308, 319, 321). Quiriga

also collapsed slightly after AD810, when the last monument was raised (Demarest 2004, 265).

The power of the kings at Copán appears to have been significantly decreased by the killing of Waxaklajuun Ub'aah K'awiil and it appears that non-royal elites took advantage of this loss of prestige to assert their own positions (Webster 2002, 304). There are several indications that the power of the king had been reduced and that of the nobles increased. A council house dated to the mid-eighth century decorated with lordly toponyms suggests that the king was forced to very publicly recognise the power of the nobles and their local domains (Fash *et al.* 2004, 264; Demarest 2004, 233; Webster 2002, 304). Outside Copán, elites used 'ajaw' glyphs (usually indicative of kingship or supreme rule) to demonstrate their status as rulers and this has been taken as indicative of their claimed independence or assertions of power (Fash *et al.* 2004, 266). Fash (*et al.* 2004, 267) suggests that there was increasing competition for offices by eligible candidates from a burgeoning elite and this too will have increased competition, faction and instability within the polity. In fact, the centre of Copán was surrounded by two residential areas that housed 20 noble families and their courts, some with royal connections, with others located elsewhere. Some of these, such as the House of the Bacabs, were impressive structures, rivalling royal compounds, and even had elaborate thrones or benches, some decorated with hieroglyphics, of the kind usually associated with rulership (Webster 2002, 303).

It seems unlikely that the Copán collapse was caused by the kind of warfare and strife that affected the Petexbatun region (Webster 2002, 319). The palace of the last king Yax Pasaj suggests that he was unable to command labour in the second half of his reign, since waste began to accumulate in several areas (Fash *et al.* 2004, 272). Specific rejection of his rule may also be evident in deliberate and localised destructions of royal buildings, in particular those associated with his lineage ancestors (Fash *et al.* 2004, 272). Also, an altar bearing his name was pushed off the top of a building (Fash *et al.* 2004, 271). However, while royal rule seems to have been specifically rejected, several elite families seem to have survived for perhaps 150-200 years. A workshop for prestige items has been dated to the second half of the tenth century and ritual deposits continued to be made around stelae and altars but then elite activity ceases (Webster 2002, 311). Through a loss of status of rulers, the population may have become attracted to other leaders elsewhere.

In the collapse of the Mycenaean palace societies, there was a rejection of the specific forms of palatial rulership, defined architecturally by the palaces and Linear B, although it is argued in chapters 5 and 6 that there was often continued activity at former palace sites, and rulership and elites of some kind existed in the postpalatial period. These changes, especially with regards to Tiryns, where the material is most clear, are discussed in more detail in those chapters. What can be said here is, that it is possible that, as at Copán, Mycenaean nobles also competed for a limited number of palatial offices, and may also have benefited from central elites' overambitiousness and even changing access to prestige goods, which may have been strictly controlled by

palaces (Voutsaki 2001, 207). Evidently, such difficulties could reduce the real power and status of rulers and possibly their influence over the general population, which may have increased their willingness to become more mobile, and this could have led to a consequent rise in the relative status of the nobility.

Changing trade networks

Webster (2002, 231-233) rejects the notion that disruption in long-distance trade networks could have played a part in the Maya collapse, however, this is problematic. Although he accepts that prestige goods used in gift-exchange were important for 'the construction and display of elite identity' he suggests that they were not vital for the mass of the population (Webster 2002, 232). Furthermore he doubts that royals or elites ever managed complex commercial trading operations and notes that trade is not mentioned in the texts (Webster 2002, 232). However, in a prestige economy in which certain goods underpin elite expression or social practices, the goods circulated need not be those vital for subsistence, such as food, but rather those items invested with social value. The inability to appropriate or control these would have a consequent social effect. Furthermore, the absence of concern with trade in texts, common to the Maya and the Mycenaeans, does not mean that elites did not rely on the acquisition of certain goods, neither does their apparent failure to manage such systems. It simply may not have occurred to them that such normal features of life could be seriously disrupted or brought to a halt.

Changes in trade patterns appear to have led to the flourishing of northern Belize during the Terminal Classic (Masson and Mock 2004). While many southern Maya centres were collapsing this 'was arguably the period of greatest florescence in northern Yucatan' (Demarest 2004, 268). It is likely that these developments in the north will have affected trade routes and local and regional politics, and as noted above, the important centre of Calakmul appears to have shifted its interest northwards around AD750. Masson and Mock (2004, 372) suggest that, while some collapses occurred in north-eastern Belize, there are no indications of population loss and that this was because of the region's participation in trade networks with the north. In fact, it may be that the region attracted migrants from other areas (Masson and Mock 2004, 400). However, the participation of smaller communities in maritime exchange may have 'directly undermined the economic foundations of older, inland regional capitals' which 'culminated in the social transformations of the Terminal Classic period and the emergence of loosely centralized provinces that may have been conducive to the amplification of commercial exchange' (Masson and Mock 2004, 367). These changes involved the presence of new architectural and ceramic styles, which have been used to argue for the presence of new ethnic groups, but this may owe more to internal social changes and new forms of expression (Masson and Mock 2004, 377). It seems that some formerly peripheral areas, by actively engaging in local and long-distance trade networks, may have contributed to the demise of some Classic style polities, even attracting new settlers, and that these areas were able to thrive through the Terminal Classic period (Masson and Mock 2004, 400-401).

The Western Roman Empire

Some brief comments on current trends in the interpretation of the collapse of the Western Roman Empire have been made in Chapter 2. Like the Hittite kingdom, this empire was far larger in scale than Mycenaean palace societies, although some useful parallels can nevertheless be adduced.

Centres and elites: the importance of reciprocal relations

The city of Rome, and the Mycenaean sites that became palace states, expanded their influence, and absorbed pre-existing local elites. To ensure stability, reciprocal relations between the centre and these elites had to be maintained to the satisfaction of both. Heather (2005, 33, 139-140) notes the importance of the elite Roman landowning classes, who paid the taxes which supported the state and participated in its governance, and comments on the delicate balance the centre had to maintain in order to ensure 'the willingness of these same landed classes to pay up.' Any overburden could have led to landowners opting out of the system to which they were vital, while any failure to maintain the security of them and their property could equally have resulted in their 'search for another agency that could perform the same role' (Heather 2005, 140). Local elites defined themselves to some extent by their participation in imperial institutions, which offered them status, legitimacy and a privileged position, and relied on protection from the centre (Heather 1995, 21). Also, 'the centre relied on a mixture of constraint and reward to focus the loyalties of landowners' (Heather 1995, 38). Periodic secessions of regions from the empire should be seen as 'quite simply a way of making sure that a satisfactory slice of the imperial cake was distributed in their own corner of the

As noted in chapter 3, trading patterns may have been shifting in the Aegean in the later thirteenth century. If this was the case, it might be expected to have social and political consequences, including changing settlement patterns and the collapse of older centres. Some areas might have suffered, as has been suggested for Pylos, while others could be expected to survive or even thrive, as seems to have been the case in the Aegean islands. Trade and exchange should not be expected to have remained static factors, and it is likely that people could have opted into and out of systems, in an opportunistic way, although we need not expect that they had anything like a modern economist's view of how these systems operated or a global understanding of them. However, exchange was key, and if palaces did gear their own production, or channel other manufactured goods for export, they may not have controlled the visiting traders whom they relied on. In this context, import substitution at final destination markets, or other places, could have played a key role in making them less important destinations. It could be suggested that mainland interests reached across the Aegean to key trading places like Rhodes in order to play a larger role in controlling this, although basic political and internal motivations for attempted expansion would have also been important. Any change in trade networks can have a significant effect on the functioning of a society; in the modern world, the imposition of economic sanctions as an instrument of coercion or punishment demonstrates this clearly. In the ancient world, with a much more limited global perspective on the operation of exchange, even relatively small changes could perhaps have been much more significant, especially if elites relied on them in any way.

Empire' and demonstrate the potential for the fragmentation of an overarching socio-political system (Heather 2005, 66).

The breakdown of this relationship is quite evident in the later Western Roman Empire. The presence of new and powerful military groups inside the empire caused losses of revenue and prestige for the emperors and forced local elites to cope with a new situation (Heather 1995, 27). Early in the AD410s, local elites in Gaul supported the Goth Athaulf, presumably seeing this as the best way to protect their own interests (Heather 1995, 22). In contrast, British and Armorican elites asserted themselves, taking responsibility for their own defence (Heather 1995, 22). Despite attempts from the centre to halt it, increasing fragmentation ensued with more groups discarding loyalty to the imperial centre, which eventually 'no longer controlled anything anyone wanted' (Heather 1995, 35). In the Roman case, the failure to maintain balance between elites and the centre happened because of the presence of other militarily strong groups within the empire. But temporary secessions had already occurred in various provinces, indicating that other factors could cause a breakdown between the centre and elites and lead to regrouping and changed loyalties.

Despite the political collapse and the failure of central control, 'in many areas, despite some expropriation and loss, Roman aristocratic families continued wealthy and influential under Germanic rule' (Ward-Perkins 2005, 67). Despite the real and widespread violence that had occurred as new population

groups[15] entered Roman territory, some accommodation was inevitable since the newcomers 'in order for their regimes to operate smoothly... needed and wanted Roman aristocratic administrators and supporters' (Ward-Perkins 2005, 13-24, 66). Indeed, the Romans themselves had adopted such a policy in their expansion, adding an extra tier of governance while maintaining local power structures where it suited them. Roman rulership and practices were often imitated, although Roman rights could be forfeited to the advantage of newcomers (Ward-Perkins 2005, 68-71). There were also obvious linguistic continuities in continental Europe, as well as discontinuities in Britain. However, the Roman way of life eventually disappeared in these new circumstances, though to different degrees at different paces in different areas (Heather 2005, 437-438). In these circumstances the empire that had been could not function as before and neither could local elites, and it is in this context that the formation of new identities, albeit with inevitable continuities, must be seen.

In essence, the collapse and transformation as presented above, hinged on the relationships between power groups and the arrangements made by groups and individuals to facilitate their survival and success. New accommodations were forced by the arrival of new powers, although rearrangements, including secession had already been experimented with. These differed in their consequences for identity only because of the presence of new groups with non-Roman identities. The same essential relationships would have existed in the Mycenaean palace states, albeit on a smaller scale. Nevertheless, any

[15] Todd (2001, 14-15) notes that these were complex events, which involved 'the emergence of ethnic and other units, in some cases based on earlier groupings and in others evidently new.

failure to maintain an equitable balance by the centre, could have resulted in similar opportunism or dissatisfaction by local elites. While the collapse of the Mycenaean palaces did not lead to any immediately visible changes in identity, except the loss of particularly palatial forms, as represented in material culture, which may suggest that non-Mycenaean power groups were not involved in the collapse, such fragmentation could nevertheless have encouraged the formation of new corporate identities over time.

Discussion

The preceding discussion of factors at work in the collapse of the Hittite kingdom, the Classic Maya and the Western Roman Empire reveal that a wide range of processes was at work and that these interacted and combined with particular events. The expansion into and maintenance of overarching systems of rule, including territorial expansion and the imposition of influence 'often creates internal problems: the prizes to be gained from wielding power are that much greater, the consequences of not sharing in the profits that much more devastating' (Kuhrt 1995, 244). The inevitability of collapse in all these cases is unproved and quite debatable and it seems that the stability and survival of particular polities owes much to chance and inopportune coincidences. In itself this is shown by the different effects of similar occurrences at different times, the ability to cope at any time was defined by specific and contemporary factors. This conclusion should be extended to the Mycenaean collapse (Dickinson 2006a, 43). Tainter (1988, 86) largely rejects the chance concatenation of events as a suitable explanation for collapse, suggesting it has some 'logical failings', however his intention was to produce a generalised

theory 'for a global understanding of a recurrent process'. Tainter's task may indeed be impossible and undesirable since it reduces dynamic human action to motiveless structure.

The role of 'barbarians' as outlined by Bronson (1988, discussed in chapter 2) seems to have some clear validity in the case of the Hittites. The Kaska and other groups evidently preyed on the Hittite kingdom throughout its existence, causing destructions and serious problems for the king to cope with, entailing his attention and expenditure. They disrupted trade, caused destructions even in the Hittite homeland and at its capital and annexed territory. However, the Hittites were usually able to deal with this, and did so successfully for centuries, although the danger posed by the Kaska and others increased when the king faced other problems. A similar situation can be envisioned for the Western Roman Empire, in which military incursions disrupted the economy, diverted resources and led to the fracturing of relationships between affected elites and the centre. Whether such a scenario applies to the Mycenaeans, as Drews (1993) suggests, is doubtful according to Dickinson (1999c, 25). However, with Mycenaean polities being much smaller in scale, hypothetically any troubles with barbarians or raiders may have been more problematic for their survival and success.

Perhaps more relevant for the Mycenaean collapse are the problems apparent in coping with vassals, as faced by the Hittite kingdom and amongst the Maya polities. Although in the Hittite case, the scale is again larger than any that would have been experienced by the Mycenaean kings, vassalage and attempts

at hegemony amongst the smaller scale Maya polities attest to similar difficulties. Attempts at dominance and power relations may have played a similarly important role, perhaps especially between the many important centres in the Argolid, whose relationship is uncertain, but also more widely between palace sites and non-palatial regions, perhaps especially the Aegean islands. Hittite and Maya vassals could refuse to approve central rule, act in their own interests or otherwise cause problems, which often coincided with other difficulties elsewhere. Rejection of central authority by vassals could lead to difficulties in maintaining the centre and its eventual failure.

Inter-state conflicts, often involving geographically distant Maya polities were common, as the situation in the Petexbatun makes clear, and these could intensify and cause localised collapse and attendant problems for local communities and the rejection of the existing system. Again, it is possible that this became a reality in parts of Mycenaean Greece. Such conflict would likely result in the destruction of elite centres and elite groups and be accompanied by abandonment of other sites and areas. Large-scale conflicts associated with other problems late in the Hittite kingdom also seem likely to have been major factors involved in its collapse. These could also cause divisions at home, even amongst royal dynasties. Such conflicts can have many causes, either rooted in rivalry, competition for resources, or environmental changes.

Internal conflict either between a king and nobles or within royal families has been seen as a prime cause of instability. At Copán, the power of the king was restricted by powerful families, and royal authority and its symbols were

rejected. This symbolic rejection of former royal ideology also seems to have occurred in Mycenaean Greece. Dynastic problems and difficulties with succession were major flashpoints for the Hittite royal family. Problems at Tikal seem to have led to the foundation of an alternative royal centre at Dos Pilas and the intensification of rivalries and war involving Tikal's enemy Calakmul. The possibility of civil conflict and even regional war stemming from these instabilities was an ever-present threat. Another side of this can be seen in the breakdown of mutually advantageous relationships between elites and centres, as in the Roman collapse. This led to changing loyalties, the collapse of central authority and the transformation of the political landscape. Such a scenario is plausible in Mycenaean Greece, where local elites could have opted out of palatial systems, causing them to fail.

Changing patterns of trade could also affect the power of elites to reinforce their status visibly and through reciprocal giving, especially if they did not actively control it. The growth and decline of particular regions could affect and be affected by this and some formerly peripheral areas could successfully opt into the system, leading to the success of their areas, as seems to have happened in north-eastern Belize. This could stimulate the movement of people to growth areas. This is also a plausible reason for changing settlement patterns in postpalatial Greece, to be discussed in chapter 5.

To all of these factors may be added those caused by other stresses, such as climatic or localised weather events causing disruption to agriculture, population problems, plagues and epidemics. While ancient societies evidently

could and did cope with these phenomena, when combined with other problems, such as those discussed above, collapse must be seen as a possible outcome. It is likely that the palace societies of Mycenaean Greece experienced similar social and other stresses to the Hittite kingdom, the Classic Maya polities and the Western Roman Empire in terms of maintaining their integrity as systems. While their collapse was not inevitable, and indeed they succeeded for some time, a variety of factors made it a not unlikely occurrence.