

CHAPTER 8

EARLY IRON AGE GREECE

IAN MORRIS

I INTRODUCTION

In this chapter I review the economic history of Early Iron Age Greece. Following Douglass North, I assume that “the task of economic history [is] to explain the structure and performance of economies through time,” by performance meaning “total output, output per capita, and the distribution of income of the society,” and by structure “those characteristics of a society which we believe to be the basic determinants of performance . . . political and economic institutions, technology, demography, and ideology.”¹ There is currently little agreement over Early Iron Age economic structures, and no quantitative estimates of performance.

Archaeologists used to call the period 1200–700 BC the Dark Age; most now prefer the less judgmental Early Iron Age (EIA). The dominant narrative tells of the transition from palace to *polis*. Iron became common between 1100 and 900 BC, but by convention EIA archaeology begins around 1200, with the destruction of the Late Bronze Age (LBA) palaces. The period has existed as a scholarly construct since Schliemann’s excavations in the 1870s. Petrie’s 1890 synchronism between Mycenaean pottery and Egypt’s Nineteenth Dynasty fixed the fall of the palaces around 1200, defining a 500-year interval between Mycenae and the archaic age. Some historians end the EIA in 776, with the first Olympic Games, but most see a longer eighth-century transition, marked by population growth, state formation, colonization, and the return of literacy, representational art, and monumental architecture.²

Geographically, most studies include the modern Greek nation state, plus the west coast of Turkey and (in the eighth century) southern Italy and Sicily, but often break down the material into four or more archaeological cultures, focused on Crete, around the shores of the Aegean, in northern Greece, and in the western mainland.³ Some combine the palace-to-*polis* narrative

¹ North 1981: 3; see above, Chapter 1. ² On the historiography, see Morris 2000: 77–106.

³ Snodgrass 1971: 228–68, 374–6; Whitley 1991a; 2001: 77–101; Morris 1998b.

with another story, about Greek ethnogenesis,⁴ and many archaeologists treat the Aegean (and sometimes Crete) as the most “Greek” area in EIA.

Everything about this period is controversial, but in the most influential discussion, Snodgrass characterized the period as a “Dark Age,” for the following reasons:

first, a fall in population that is certainly detectable and may have been devastating; secondly, a decline in or loss of certain purely material skills; thirdly, a similar decline or loss in respect of some of the more elevated arts, of which the apparent loss of the art of writing is the most striking to us, although to contemporaries this need by no means have been so; fourthly, a fall in living-standards and perhaps in the sum of wealth; fifthly, a general severance of contacts, commercial and otherwise, with most peoples beyond the Aegean area and even with some of those within it. To these features, some would add a growth of acute insecurity.⁵

Snodgrass suggested that this situation ended with a structural revolution in the eighth century. Population exploded, stimulating agricultural advances, more competition, war, colonization, and state-formation. To make sense of this, the Greeks developed new cultural forms that lasted for a millennium, including sacrificial ritual, hero cult, citizenship, the alphabet, and figured art.⁶

In the 1990s some archaeologists suggested that the collapse and recovery were less abrupt, that there was more continuity from LBA into archaic times, and that EIA Greece was always linked to the Near East. Susan Langdon sums this up: “Although the romantic appeal of the notion will linger for some time to come, the Dark Age of Greece now appears to have been a less blighted, impoverished, and isolated time – that is, less ‘dark’ an age – than previously believed.”⁷ But the economic data make most sense within the traditional model. After summarizing the evidence in part II, I quantify some aspects of EIA economic performance in part III. I suggest that 1200–1000 BC saw economic collapse in Aegean Greece; 1000–800 saw stagnation; and that recovery began in the eighth century. However, I also argue that the most important economic take-off only came later, around 550–500. I discuss economic structures in part IV, and in part V offer conclusions.

II THE EVIDENCE

The main peculiarity of EIA studies is the relationship between Homer and archaeology. Homer’s *Iliad* and *Odyssey* probably date around 750–700 BC, and describe the heroes of the Trojan War, set in the distant past. These warlike aristocrats owned broad acres, large flocks, and dependent

⁴ See Hall 1997; 2002.

⁵ Snodgrass 1971: 2. See also Snodgrass 1987: 170–210; 1993; 2000.

⁶ Snodgrass 1977; 1980.

⁷ E.g., S. Morris 1992a; 1992b; de Polignac 1995; Langdon 1997: 2.

Table 8.1 *Excavation and publication of EIA settlements, 1870–1990*

Period	Number of sites published	Number of settlement publications per year
1870–1945	16	0.2
1946–1970	42	1.2
1971–1990	118	5.9

Source: Alexandra Coucouzeli, cited in Snodgrass 1993: 30.

labor. They aimed for self-sufficiency on their estates in a world of weak markets. Goods (including women) circulated through gift exchange, which defined social relationships and embedded transfers within them.⁸ Finley believed this was an eighth-century memory of a real society existing around 900 BC.⁹

Some 10,000 published graves dominate the archaeological record. Much work has focused on classifying the pottery in them.¹⁰ Snodgrass pioneered a sociological approach, and his students made quantitative studies.¹¹ Good pre-750 sanctuary evidence only became available in the 1980s, through more careful excavation, and work in settlements, which provide fewer museum-quality finds, has steadily increased (Table 8.1). In the 1990s good survey data appeared. The evidence is still so thin that individual projects, like Lefkandi (Map 8.1), can revolutionize our picture; but Snodgrass estimates that the EIA evidence base has grown five- to ten-fold since 1970.¹² The main weakness now is faunal and floral analyses.

Through the 1960s and 1970s Homerists and archaeologists largely ignored each other's models of the EIA. In the 1980s a new synthesis formed, seeing the archaeological Dark Age model as valid before 800, but making Homer and Hesiod crucial to the eighth century.¹³ For the period 1200–750 we must rely almost entirely on archaeology; after 750, we must combine texts and artifacts.

III ECONOMIC PERFORMANCE

Economic historians commonly distinguish between extensive/aggregate growth and intensive/per capita growth. Many societies have expanded their territory, improved technology, or benefited from better climate,

⁸ Finley 1979b; Donlan 1985; 1997; Ulf 1990; Raaflaub 1991; van Wees 1992. ⁹ Finley 1979b.

¹⁰ Particularly Schweitzer 1917; Desborough 1952; Coldstream 1968, and overview in Lemos 2002.

¹¹ Morris 1987; Whitley 1991b. ¹² Snodgrass 2000: xxiv.

¹³ See note 9 above, plus Crielaard 1995; Raaflaub 1997; Tandy 1997; Morris 2001.



Map 8.1 Sites mentioned in this chapter. (a) The Aegean Sea

and have converted the consequent growth in total output into more human beings. There are fewer examples of societies experiencing sustained growth in per capita consumption.¹⁴ In this section I present evidence for both types of economic growth. I begin with demography, then look at standards of living.

(a) *Demography*

Thirty-five years ago, Snodgrass noted that the number of known sites fell from 320 in the thirteenth century to 130 in the twelfth and 40 in the eleventh. He later suggested that the size of the largest sites fell by a similar

¹⁴ See E. L. Jones 1988.



Map 8.1 (b) The western Greeks

factor. At face value, these figures imply a 95 percent population decline between 1200 and 1000 BC. Snodgrass did not go this far, but concluded that “the population of Greek lands in the eleventh century BC was lower than it had been for a thousand years . . . [and] it was probably never so low at any later time in antiquity.”¹⁵ He argued from numbers of graves that there was a population explosion in the eighth century, with growth reaching 3–4 percent per annum at Athens and Argos, causing numbers to increase seven-fold between 780 and 720 BC.¹⁶

These figures are implausible. The best documented cases of decline like the twelfth-/eleventh-century figures come from epidemics striking virgin populations, like the bubonic plague in fourteenth-century Europe or smallpox in sixteenth-century Mexico. In parts of Italy the plague killed half the population between 1348 and 1350, and canceled out natural increases for another fifty years. In Mexico, population fell 94 percent between 1532 and 1608, then slowly recovered.¹⁷ If the archaeological data directly mirror population trends, there was a catastrophic change in mortality rates, presumably driven by epidemic disease in the twelfth century, followed by recurrences through the eleventh and tenth centuries.¹⁸ Earthquakes, droughts, uprisings, wars, and invasions – the forces usually adduced for the LBA collapse – could have multiplied its effects, but even assuming all these factors, the severity and length of the subsequent depression is striking.

The eighth-century boom is equally problematic. Snodgrass assumed female life expectancy at birth (e_0) of roughly 30 years.¹⁹ 3 percent growth would require women to average more than 11 live births, with very early unions and minimal birth spacing. There are parallels, such as French Canadians before 1660, but these come from unusual circumstances, and few populations achieve total fertility rates above 8. And in fact, skeletal data suggest that e_0 was just 20–22 years (see below), making an average of 11 live births impossible. In the well documented cases, high growth rates are linked to declining mortality, with women surviving through more of their potentially fecund period (R_{pot}). Sustaining 4 percent growth at 8 births per woman would require female $e_0 = 50$, which was clearly not the case.²⁰

I see three possible conclusions. First, EIA Greece experienced unparalleled demographic swings. We should demand strong evidence before accepting this. Second, there was massive emigration from the Aegean c.1200–1000 and immigration into it after 800 BC. There certainly was twelfth-century emigration: finds on Cyprus and around Gaza are so like

¹⁵ Snodgrass 1971: 364–7; 1980: 18–20. Quotation from 1971: 367.

¹⁶ Snodgrass 1977; 1980: 21–4. ¹⁷ Data from Livi-Bacci 2000: 80–4; 2001: 42–8.

¹⁸ See Chapter 3; cf. Walloe 1999. ¹⁹ Snodgrass 1980: 18. ²⁰ See Livi-Bacci 2001: 9–19.

Mycenaean material that no other explanation is possible. However, these sites account for only a tiny percentage of the Aegean population decline; there are few signs of continuing emigration through the eleventh to ninth centuries; and there are some signs of population movements from the Balkans into Greece in the same years.²¹ In the late eighth century, on the other hand, there is no good evidence for immigration, and clear evidence for emigration of thousands of Greeks to Italy and Sicily.²²

Third, the archaeological data do not reflect demography in straightforward ways. The general pattern, of decline between 1200 and 1000 BC, followed by depression lasting a quarter of a millennium then rapid recovery after 750, is beyond dispute. But raw counts of settlements and graves may exaggerate the scale of swings.

(a.1) Decline and stagnation, 1200–800 BC

There were many population movements after 1200. Some were short, as when the occupants of Tiryns moved from the upper to the lower acropolis. Others were medium distance (e.g., from the plains of central Crete to the mountains in the east); and a few were longer, from the Argolid and Messenia to Arcadia, Chalcidice, and the Cycladic and Ionian islands. So many refuge sites are known on Crete that we should perhaps speak of demographic relocation as much as decline,²³ but that is not true elsewhere. Further, around 1100 another wave of disasters hit Arcadia and the Cyclades, and by 1000 most of the new settlements failed. We may have misunderstood the ceramic chronology, and possibly Late Helladic IIIC wares continued in use through the eleventh and even into the tenth century; but the stratigraphy at Mycenae and Tiryns provides no support for this.²⁴

Settlement sizes also fell. Large thirteenth-century sites like Tiryns, Pylos, Thebes, and Gla probably had populations of 5,000–10,000.²⁵ In the eleventh and tenth centuries, the largest sites – Athens, Knossos, Argos, probably Lefkandi and Karphi – had populations below 1,500.²⁶ The settlement hierarchy was steep. In the Argive plain, for example, Argos probably never fell below 1,000 inhabitants, and Asine and Tiryns below a few hundred; but most people probably lived in shifting hamlets of a few dozen people. This pattern seems to recur in a cellular arrangement around the Aegean, with each area that later constituted a city state (Attica, Corinthia, etc.) having the same basic structure in EIA. In western Greece we know of no substantial settlements, and the population may have been very mobile.²⁷ In northern Greece, beyond the areas characterized by Mycenaean

²¹ Rutter 1990; Vanschoonwinkel 1991; Gitin et al. 1998.

²² See Scheidel 2003b. ²³ Nowicki 2000. ²⁴ Mountjoy 1986.

²⁵ Dickinson 1994: 78; Davis et al. 1997: 428–30; Jablonka 1996; Whitelaw 2001a.

²⁶ Morris 1991: 29–34. ²⁷ See Morgan 2003.

culture before 1200, there was greater settlement continuity, and more sites running to hundreds of people.

Intensive surveys have produced remarkably little EIA evidence. There are several possible explanations.²⁸ First, some areas were perhaps abandoned. Second, since surveys count diagnostic sherds, perhaps EIA ceramics had low visibility relative to earlier and later wares. In western Greece the Aegean Protogeometric–Geometric sequence has little relevance, and local “Dark Age” wares may be difficult to identify among surface finds.²⁹ However, the fill of the Lefkandi Toumba apsidal building shows that even the worst-represented Aegean period, Middle Protogeometric, had highly diagnostic types.³⁰ Third, surveys measure discard of diagnostic sherds, not the number of people using them. Typical EIA houses had less in them than typical classical houses (see below); and after two to three millennia of erosion, redeposition, and ploughing, EIA activity may be less visible than that of richer periods.

Another possibility is that gradual degradation affects EIA material more than classical artifacts. Bintliff and others argue that this causes prehistoric ceramics in Boeotia to be swamped by later activity.³¹ If so, we would need a multiplier to compare EIA with later settlement numbers (but not with Bronze Age finds). However, the independent evidence of pollen from Messenia (where the EIA decline seems particularly acute), dated by radiocarbon not ceramics, suggests that “During the Early Iron Age [1100–800] the landscape experienced the least intensive human impact of the last 4,000 years.”³²

Each strand of evidence has problems, but one conclusion is unavoidable: there was a catastrophic population collapse between 1200 and 1000. My impression is that across Greece as a whole, by 1000 BC the population was no more than half what it was two centuries earlier, and probably more like a quarter. Crete and Macedonia were least affected, but in the old Mycenaean heartland settlement often contracted to just a few towns.

(a.2) *Recovery, 800–700 BC*

As with the post-1200 decline, a straightforward reading of eighth-century finds probably exaggerates the scale of change. Snodgrass’ count of graves from Attica and the Argolid masked a shift in the ratio of adult: child graves from roughly 9:1 before 750 to 1:1 after. No known premodern population had child mortality rates as low as pre-750 BC cemeteries; the only possible conclusion is that many EIA sub-adults received low-visibility disposal.

²⁸ Sbonias 1999a discusses the general problems.

²⁹ Coulson 1983; 1986. ³⁰ Catling and Lemos 1990.

³¹ Bintliff et al. 1999, with discussions in *Journal of Mediterranean Archaeology* 13 (2000).

³² Zangger et al. 1997: 593.

There is also evidence that some adult status groups are under-represented before 750.³³

But settlement evidence nevertheless indicates major expansion. Athens probably had 5,000–10,000 residents by 700, and large new sites like Corinth and Eretria appear. Many villages, like Zagora on Andros and Asine, probably had 500 or more people. Van Wees suggests that Homer imagined about 600 inhabitants in Odysseus' Ithaca, and 4,000 in major towns like Troy, Pylos, and the fictional Phaeacia. If he is right, estimates drawn from texts and archaeology roughly coincide.³⁴

Most surveys report increases in site numbers around 700. This was most pronounced around the Aegean. In Crete people moved down from refuge sites to the plains, and their towns regularly attained populations of 1,000. Knossos, which probably had at least 5,000 people by 700 BC, remained the largest site. In the western mainland growth only came in archaic times, and in northern Greece the pace of change was generally slower.

As well as larger and more numerous settlements in the old Greek world, Greeks moved to Italy and Sicily. The first colony, at Pithekoussai, probably had 4,000–5,000 people by 700.³⁵ Megara Hyblaea perhaps had just 240–320 settlers in 728, but its numbers grew ten-fold in less than a century.³⁶ Scheidel estimates that 20,000–40,000 adult male Greeks emigrated between 750 and 600 BC – i.e., 2–3 percent of the adult male population, and a far higher proportion from active cities like Corinth, Miletus, Eretria, and Chalcis.³⁷

Population did not increase seven-fold in the eighth century, but across Greece as a whole it surely doubled (a growth rate of >0.7 percent per annum). The consequences must have been dramatic, involving some combination of aggregate economic performance improving, living standards declining, new resources being discovered, technology improving, and redistribution of resources. Social stresses must have been strong.

(b) *Standards of living*

Most archaeologists interpret EIA material remains as reflecting poverty, but cannot quantify this. Snodgrass listed Protogeometric “intimations of poverty,” while Starr believed that “During the Dark Ages . . . men struggled to survive and to hold together the tissue of society.”³⁸ Finley, on the other hand, argued that “In the sense . . . that *we* grope in the dark, and in that sense only, is it legitimate to employ the convention of calling the long period in Greek history from 1200 to 800 a ‘dark age’.”³⁹

³³ Morris 1987; 1992: 78–81; 1998c. ³⁴ Van Wees 1992: 269–71.

³⁵ Morris 1987: 166. ³⁶ De Angelis 2003: 41–5. ³⁷ Scheidel 2003b: 134–5.

³⁸ Snodgrass 1971: 380–6; Starr 1977: 47. ³⁹ Finley 1970: 93.

It is hard to evaluate such vaguely expressed views. Economic performance requires measurement, and archaeologists have not developed appropriate methods. However, recent work on the English Industrial Revolution provides a starting point. Debates have focused on standards of living: it is the economy's ability to make people's lives better that gives economic history its point. In the 1980s some historians moved beyond arguments about real wages to the basic elements bundled together in the concept of the "standard of living" – mortality, morbidity, nutrition, housing, clothing, leisure, etc.⁴⁰ Archaeology gives access to some of these indices. The technical problems are, of course, immense. Most things used in antiquity do not survive; abandonment processes are hard to understand; and the original processes of deposition were governed by culture-specific norms that we cannot observe. But we can control for most of these factors, and establish parameters for changes in standards of living and underlying shifts in economic performance.⁴¹ Despite all the uncertainties, a general picture emerges.⁴² Average EIA per capita consumption was lower than in LBA (perhaps by as much as one-third). In classical times, per capita consumption may have been twice as high as EIA. On the whole, EIA life was more wretched than at any time between the rise of the Minoan palaces and the death of Justinian. Greeks died younger, lived in more squalid surroundings, and had fewer goods. There are contrary indications too, of course: some kinds of sickness declined, and some Greeks ate quite well. But there can be no doubt that the EIA economy performed poorly, even by ancient standards.

Because of space limits I concentrate on two basic indices, the experience of the body and housing, and add summary remarks on material goods, public buildings, and other communal spending.

(c) *The body*

(c.1) *Mortality*

The only empirical way to approach EIA mortality is through physical anthropology. Lawrence Angel studied nearly 2,000 ancient skeletons between the 1930s and 1970s. Techniques have advanced, but little new work was done until the 1990s. The number of skeletons analyzed with modern techniques is small, but we can expect rapid advances in the next decade.

The simplest measure of mortality is e_0 . But because infants' bones survive less well than adults' and we cannot establish differential survival rates in specific cases, we can rarely calculate e_0 directly. Further, EIA sub-adults were often disposed of in ways that are hard to detect. As noted above,

⁴⁰ Fogel 1993; Floud 1994; Steckel 1995.

⁴¹ Morris 2005.

⁴² Morris 2004.

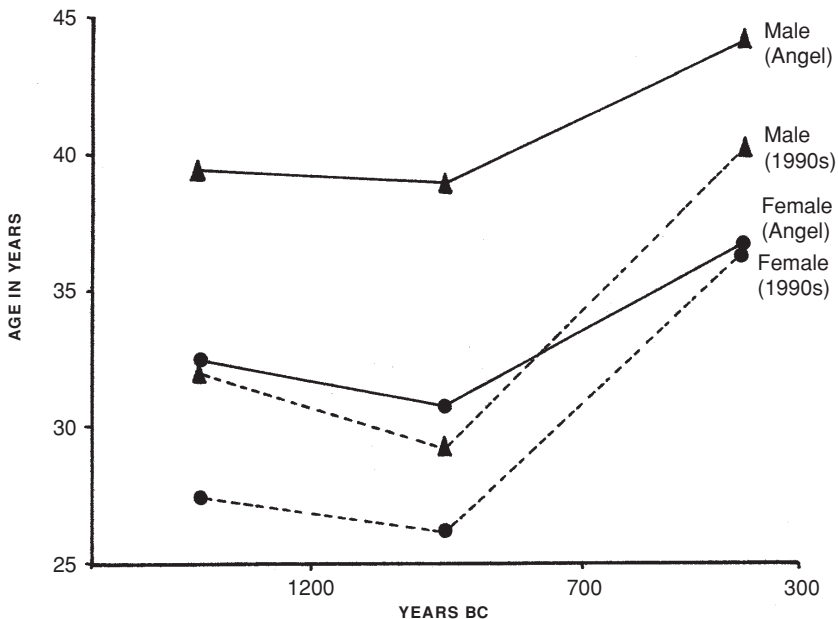


Figure 8.1 Average adult ages at death, 1600–300 BC. The solid lines represent data collected by Lawrence Angel between the 1930s and 1970s (Bisel and Angel 1985; $n = 433$ males, 294 females), and the broken lines represent data collected with new techniques in the 1990s ($n = 357$ males, 416 females)

overall fewer than 10 percent of published burials are infants or children, which seems demographically implausible for pre-modern populations.⁴³ At Kavousi water-sieving increased this proportion to 31 percent,⁴⁴ but this is still low. We must therefore focus on average adult ages at death.

Figure 8.1 shows Angel's estimated adult ages at death. Most palaeodemographers now age skeletons only within ten-year bands, and produce younger ages at death. Some doubt our ability to age adult skeletons at all, but these are a minority.⁴⁵ Angel's ages could be as much as five years too high, but because a single scientist produced them, using consistent methods, relative changes between periods within the data set remain meaningful. Angel found that adult male ages at death fell 0.6 years between LBA and EIA, then increased 5.1 years between EIA and classical times. For women the changes were 1.7 years and 5.9 years respectively. Angel documented an upward trend for some 2,500 years, from Early Bronze Age to classical. As Figure 8.1 shows, only EIA diverges from this. If we assume 40 percent mortality before age 5, e_0 fell by 3.5 percent between LBA and

⁴³ Morris 1987. ⁴⁴ Liston 1993: 132–40.

⁴⁵ See discussions in Paine 1997; Meindl and Russell 1998; Aykroyd et al. 1999; Jackes 2000.

EIA (23.1 to 22.3 years), improving by 17 percent to 26.1 years in classical. If anything, these figures underestimate the EIA decline, since in periods when those people who reached adulthood were dying at younger ages, pre-adult mortality was probably higher too.

The few skeletons studied in the 1990s with more advanced methods mostly confirm Angel's picture of declining e_0 in EIA, but with lower average ages. Kavousi may be an exception, but here Liston grouped the adults into very broad bands: 10 of the 12 confirmed women died before age 40, while among the 20 men only 4 died in the 20–39 year range, 12 between 40 and 59 years, and 6 lived more than 60 years.⁴⁶ Given the broad ranges, the typical adult age at death could have been in the low 40s, just slightly higher than Angel's result. But with such small samples inter-observer and inter-site variations pose severe problems, and we must await further studies.

(c.2) *Morbidity*

Steckel and Rose use skeletons to calculate a “wellness index” for 5,000 years of New World history.⁴⁷ We cannot yet do this for EIA Greece, but we can get a sense of some health trends. A few skeletons have striking pathologies, like an eleventh-century Athenian child with Klippel-Feil syndrome, causing severe deformities and respiratory difficulties, and an eighth-century child from Tiryns with spina bifida.⁴⁸ The care these children received should dispel apocalyptic visions of EIA, but real understanding requires large samples.

We cannot always distinguish the causes of skeletal pathologies. Angel studied porotic hyperostosis, strainer-like lesions on the skull caused by low intake or poor absorption of iron, and identified malaria as the cause, but it now seems that other infestations and childhood malnutrition are involved.⁴⁹ As Fig. 8.2 shows, porotic hyperostosis fell in Angel's sample from 9 percent in LBA to 6 percent in classical. In classical Metapontum in southern Italy, the figure was just 4 percent.⁵⁰ Whether because children's diets improved or infestations declined (or both), anaemias were less common between 1600 and 300 BC than before or after.

Angel's quantification of vertebral arthritis also suggests improving health in EIA (Fig. 8.3). 52 percent of the skeletons were arthritic, compared to 63 percent in the LBA and 76 percent in classical. 78 percent of the classical skeletons at Metapontum had vertebral arthritis. At Makriyalos in Macedonia vertebral arthritis was common in both the upper and lower back in LBA and EIA, suggesting a combination of routine tasks and heavy agricultural labor. EIA men did heavier work than women, but women had

⁴⁶ Liston 1993: 130–1. ⁴⁷ Steckel and Rose 2002.

⁴⁸ Lagia and Ruppinstein, forthcoming; Bräuer and Fricke 1980.

⁴⁹ Angel 1977; 1978; Stuart-Macadam and Kent 1992. ⁵⁰ Henneberg and Henneberg 1998.

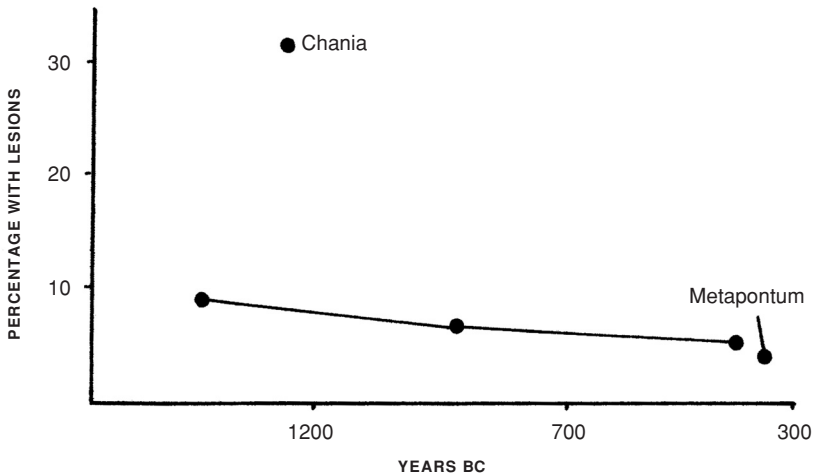


Figure 8.2 The frequency of porotic hyperostosis, 1600–300 BC. The solid line represents Angel's results (Bisel and Angel 1985; $n = 480$). The isolated points represent 1990s analyses (Chania [McGeorge 1992], $n = 22$; Metapontum [Henneberg and Henneberg 1998], $n = 272$)

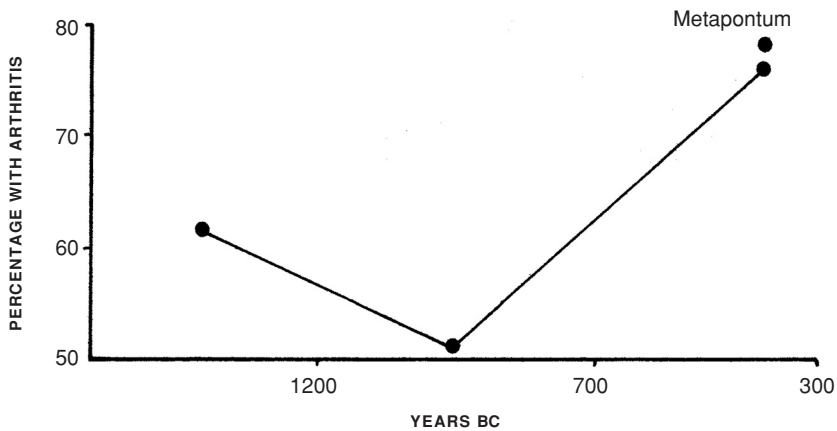


Figure 8.3 Percentage of skeletons with vertebral arthritis, 1600–300 BC. The solid line represents Angel's results (Bisel and Angel 1985; $n = 229$). The isolated point represents Metapontum (Henneberg and Henneberg 1998; $n = 272$)

more repetitive injuries, particularly in the forearms. Gender differences in labor may have increased in LBA and EIA.⁵¹

On the other hand, Angel found that oral health declined slightly between LBA and EIA, before improving sharply in classical times. At

⁵¹ Triantaphyllou 2001.

classical Metapontum, though, carious teeth were twice as common as in Aegean Greece. Caries are normally linked to sugars from carbohydrate-based foods such as fruit and nuts, or starches.

While EIA Greeks died younger than those of LBA or classical times, their health, while they lived, was not noticeably worse. However, the evidence is meager, and intersite variability is often stronger than diachronic trends.

(c.3) *Nutrition*

Snodgrass suggested that EIA saw a shift toward less intensive subsistence systems, including nomadic pastoralism.⁵² Nomadism is notoriously hard to identify archaeologically. Few archaeologists have collected faunal and floral data. At Nichoria there may have been a shift from rearing cattle for milk and power in LBA toward rearing them for meat in EIA, but the published study is based on just eighteen teeth out of thousands of bones collected, and a larger sample from Tiryns revealed no such trend.⁵³ Seeds from Nichoria indicate that cereal agriculture continued across EIA, but the sample is again small, and says nothing about the relative nutritional importance of meat and bread. New pollen analyses suggest that in EIA oak forests covered as much as half of Messenia. Perhaps 10 percent of the land was under olives in LBA, but this fell to 5 percent in EIA, before climbing to a peak of 25 percent in the third century BC.⁵⁴

At Kavousi, the bones also suggest a shift toward meat eating. Breakage patterns show that joints (predominantly sheep and goat) were chopped into small pieces for boiling, to release marrow to make “pot liquor.” People got a lot from their animals, but did not crush the bones to make “bone grease,” normally a sign of subsistence stress. Overall, animal use was stable at Kavousi between 1200 and 700.⁵⁵ At eleventh-century Tiryns, by contrast, cattle bones were commoner than sheep/goat (41 vs. 26 percent).⁵⁶

Enamel hypoplasia (defects in human tooth enamel, probably caused by nutritional stress) is stable and high in Angel’s sample (Figure 8.4). More recent analyses identify still higher frequencies – 78 percent of teeth at classical Metapontum were affected, and all adult teeth at LBA Chania.⁵⁷

In recent times age-specific stature correlates tightly with nutrition.⁵⁸ Stature can be estimated from skeletons, though the samples are still too small to inspire confidence. We have 320 LBA skeletons, but only 16 EIA (15 from the mountain village of Pydna) and 67 classical (60 from Metapontum, which scores badly on most health indicators). Figure 8.5 shows the results: an EIA peak for men and an EIA trough for women. By way of calibration,

⁵² Snodgrass 1971: 378–80; 1987: 193–209. ⁵³ Legouilloux 2000: 73–4; Sloan and Duncan 1978.

⁵⁴ Shay and Shay 1978; Zangger et al. 1997: 589–94.

⁵⁵ Klippel and Snyder 1991; Snyder and Klippel 2000. ⁵⁶ Legouilloux 2000: 71.

⁵⁷ Henneberg and Henneberg (1998: 532, interpreted as congenital treponematoses); McGeorge 1992.

⁵⁸ See Floud et al. 1990; Komlos 1996.

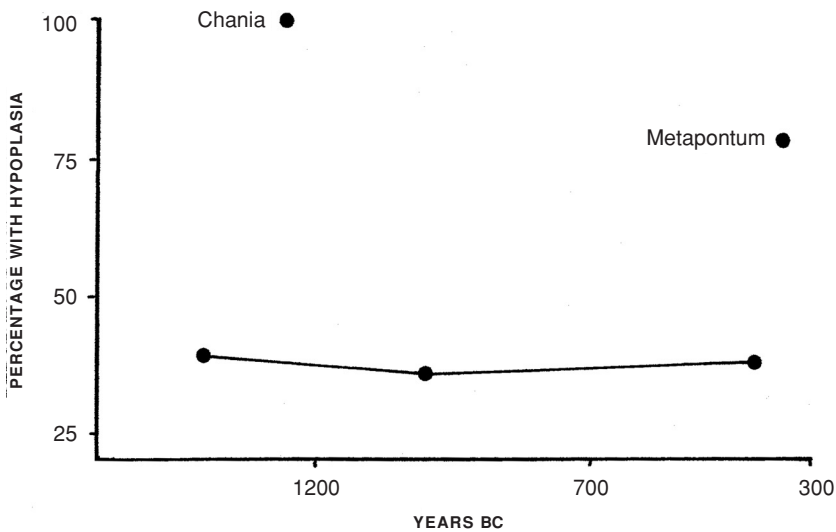


Figure 8.4 Percentage of mouths with enamel hypoplasia, 1600–300 BC. The solid line represents Angel's results (Bisel and Angel 1985; $n = 257$). The isolated points represent 1990s analyses (Chania [McGeorge 1992], $n = 12$; Metapontum [Henneberg and Henneberg 1998], $n = 272$)

we should note that the EIA male score, 168.8 cm., is only just above the 168 cm. cut-off that Fogel suggested as marking stunted populations.⁵⁹ In such populations, many people would be so poorly nourished that they were unable to work systematically.

(c.4) Conclusion

First, let me emphasize again that we have few good data. Interobserver and intersite variability account for more of the patterns than diachronic trends. New findings will change the picture radically. But the available evidence suggests that relative to LBA or classical times, adults of both sexes died younger in EIA, and had slightly more caries. Women's diet was worse. On the other hand, anaemias declined from LBA through classical times, vertebral arthritis and enamel hypoplasia dipped slightly in EIA, and men's diet improved. The EIA diet may have included more meat, fruit, and nuts than these other periods, with beef dominant at Tiryns, but pollen diagrams from Messenia suggest a low point in olive cultivation.

In some ways people were apparently physically better off than in LBA or classical times; in some ways, worse. Henneberg and Henneberg suggest that in classical Metapontum "premature mortality was high, they were riddled by numerous diseases, and they were not always given medical help . . . in a

⁵⁹ Fogel 1993: 14.

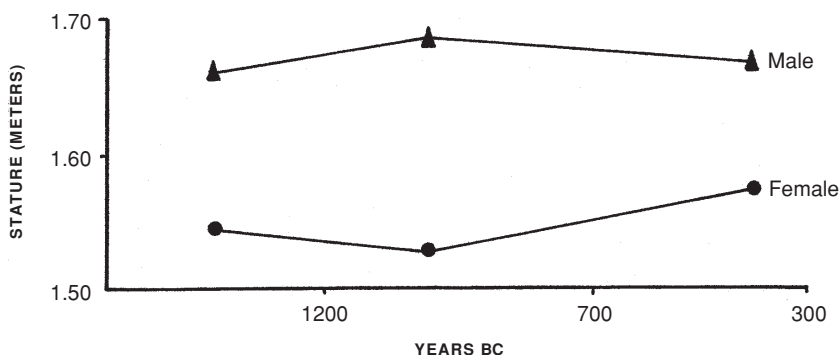


Figure 8.5 The stature of adult skeletons, 1600–300 BC. The diagram shows only those skeletons for which scores have been calculated using Trotter and Gleser's regression formulae (1958) ($n = 403$, but note the small size of the Early Iron Age sample [$n = 16$])

rather unhealthy populace, pain must have been a commonplace experience for most individuals.”⁶⁰ In different ways, this applies to EIA Greece as a whole. The “wellness index” changed little between 1600 and 300 BC. Life was shorter in EIA, but not always nastier.

(d) *Housing*

The size and quality of housing are fundamental to assessments of living standards, and modern historians pay great attention to both.⁶¹ More than 400 complete houses have been published for 800–300 BC.⁶² They present many empirical challenges, but there are strong patterns.

(d.1) *Size*

Crete and the central Aegean followed different trajectories. There is a spike in house size in Neopalatial Crete (Middle Minoan III–Late Minoan IB; c. 1800–1600 BC), with a median size of 130 m². Further, we know from pictorial evidence⁶³ and the houses themselves (particularly at Akrotiri)⁶⁴ that many had two or even three floors. McEnroe suggests that single-storey houses were “comparatively rare,” and that “in most cases there were some, probably quite important, rooms on the upper storey.” Hallager, on the other hand, argues that the second floor was mostly open to the sky.⁶⁵ There are also sampling problems: most excavations concentrate on areas

⁶⁰ Henneberg and Henneberg 1998: 537. ⁶¹ E.g., Burnett 1986.

⁶² Summaries in Lang 1996; Mazarakis Ainian 1997; Nevett 1999; and for the Bronze Age, Darcque and Treuil 1990; McEnroe 1979; 1982.

⁶³ Hallager 1985; Boulotris 1990.

⁶⁴ Michailidou 1990; Palyvou 1999.

⁶⁵ McEnroe 1979: 106–7; Hallager 1990.

Table 8.2 *Median house sizes, mainland Greece and Aegean islands, c. 1600–300 BC*

Period (years BC)	Sample size	Median area (m ²)
1600–1400	11	40
1400–1300	14	41
1300–1200	50	76
1200–1075	19	52
1075–1025	2	71
1025–900	7	70
900–800	12	43
800–700	75	51
700–600	80	49
600–500	23	70
500–400	30	149
400–300	82	230

around palaces,⁶⁶ while small houses (McEnroe's Type III) are best known from the smaller sites (e.g., Gournia, Kommos, Pseira). However, even Type III houses are substantial, averaging 80–100 m², and regularly have stairs to upper floors. McEnroe suggests that “by American standards, [a Type III building] would have been a comfortably large house for a family of perhaps 6–10 people.”⁶⁷

After 1600 Minoan house sizes declined sharply. A few large Neopalatial-type houses were built in Late Minoan IIIA–B and many pre-1600 houses were reoccupied, but most new houses were smaller and of new designs.⁶⁸ Few have evidence for second floors. House sizes and forms then remained quite stable until the seventh century, despite the rupture in settlement patterns after 1200. Indeed, at Kavousi some houses remained in use, on and off, from the twelfth century through the early seventh.⁶⁹ Median house size was 60–70 m² across EIA, and many settlements (e.g., Phaistos, Karphi, Smari, Vrokastro, Kavousi Kastro) had one or more large houses (125–200 m²).

The Aegean followed a different pattern (Table 8.2). Median house size jumped in the thirteenth century, falling back in the twelfth then recovering to close to pre-1200 levels in the eleventh and tenth centuries.

Two interpretations suggest themselves. The first is that the chaos of the twelfth century depressed living standards, but after this temporary setback, Greeks inhabited relatively commodious houses until a long decline set in

⁶⁶ Palaces are not included in Table 8.2. ⁶⁷ McEnroe 1979: 113.

⁶⁸ McEnroe 1979: 131–72; Hayden 1987; 1990. ⁶⁹ Gesell et al. 1995.

around 900. The second is that the tiny size of our eleventh- and tenth-century samples has inflated the medians.

Only two fully excavated eleventh-century houses have been published, both from Macedonia. One of them, the Kastanas Zentralhaus (105 m²), is clearly a special building, and almost certainly inflates the score. Fragments of much smaller apsidal houses are known from Asine, Argos, and Tiryns, and these suggest that the second fully excavated house (Assiros House 5, covering 36 m²) is fairly typical. In the tenth century, just seven fully excavated houses are known. They include the enormous Lefkandi “heroon” (445 m²), but the main reason for the high median is three apsidal houses (Asine 74L-M, Nichoria IV-I, Koukounaries A;⁷⁰ an unpublished example from Lamia is not included in Table 8.2) covering 70–80 m². Only further publications can decide between these two hypotheses, but I suspect that the tiny eleventh- and tenth-century samples have produced exaggerated scores.

Apsidal houses in the 70–80 m² range continued in the eighth and seventh centuries, and Mazarakis Ainian shows that at Oropos, Eretria, and nearby sites, small curvilinear houses were built in pairs in walled compounds, with one for living and the other for crafts.⁷¹ But most ninth- and eighth-century houses were smaller. Alongside several dozen houses in the 40–60 m² range, the late eighth century also saw the first really large houses. At Zagora, the “Great House” (H19/22/23/28/29) covered 256 m². It may have had a second floor, but the general flimsiness of EIA foundations and (from the eighth century) house/temple models suggest this was rare.⁷² Only one very small house, the Smyrna trench H oval house (14 m²), is known from EIA sites, but houses under 20 m² proliferate around 700 BC. Most come from the new Sicilian colonies (Naxos, Syracuse, Megara Hyblaea), and average just 4 × 4 m., but there are also very small houses at Smyrna and Zagora area J.

House types were more varied in the seventh century than in EIA. The first rectilinear, multi-room courtyard houses appeared around 700, and by 600 nearly all new houses took this form.⁷³ But in the seventh century they coexisted with various kinds of small houses, which were particularly common in villages like Emborio, Lathouriza, and Vroulia. By the sixth century, very small houses had disappeared; the smallest known examples, from Thasos, are 40–42 m². Second floors were also becoming common. But the real take-off began after 550. For the first time, new houses surpassed eighteenth–seventeenth century Cretan dwellings. Few fifth-century houses measure below 100 m², and in the fourth century few were less than 150–200 m².

⁷⁰ Following Mazarakis Ainian's (1997) letter sequence.

⁷¹ Mazarakis Ainian, forthcoming. The paired houses cover 58–84 m².

⁷² Schattner 1990. ⁷³ Morris 1998b: 22–3.

The house size data are complicated, but general trends are visible. On Crete, there was a sharp fall in size after the Neopalatial florescence, and median size stabilized around 65–70 m² from the fourteenth century through the seventh. In the Aegean, there was a decline after 1200. Typical houses were around 45–55 m² in the ninth, eighth, and seventh centuries, though the situation at the beginning of EIA is less clear. Diversity increased in the late eighth and seventh century, and poorer people may have had slightly worse housing conditions than earlier in EIA. But a general improvement began in the sixth century, and a veritable revolution in living standards in classical times.

(d.2) Construction

Basic construction changed little across the second and first millennia BC: stone foundations, earth floors, and stone or mudbrick walls (depending on local resources). However, there were important changes in techniques. Minoan Neopalatial houses were sophisticated, with varied foundation styles, well made windows, and excellent craftsmanship.⁷⁴ Drains, light wells, paved and plastered floors, and plastered and even painted walls are common. Although some Late Minoan III houses maintained these traditions, construction generally declined. The Cretan EIA record is dominated by Karphi, Kavousi, Vrokastro, and other mountain refuge sites. Proper trenched foundations were rare, drains unknown, and rooms usually small.

Mycenaean domestic architecture was less sophisticated than Minoan, although Kilian documented substantial and well trenched foundation types at Tiryns, and Iakovidis has shown that pitched and even tiled roofs were common.⁷⁵ In the twelfth century new houses generally followed Mycenaean patterns, and some Late Helladic IIIB houses were renovated, but after 1100 construction quality declined drastically. Nichoria Unit IV-1 had a rough fieldstone socle laid on the ground, probably wattle-and-daub walls, a simple “pole building” structure, and a pitched thatched roof.⁷⁶

The Lefkandi Toumba “heroon” was built similarly, but on a larger scale. It too lacked foundation trenches, and had a pitched thatched roof. The weight of this roof may have caused problems: Coulton suggests that “if some structural damage is needed to explain the rapid burial of the building, then difficulties with the roof are perhaps the most likely.”⁷⁷ The walls were mudbrick, and at least some interior faces were plastered, which is rare in EIA. The use of interior posts to support the walls and roof was typical, but the quantity and size of the Lefkandi timbers is striking. The central posts were 18–25 cm. thick, sunk 1.45 m. into bedrock, and probably 10–11 m.

⁷⁴ Zoïs 1990; Palyvou 1990; 1999.

⁷⁵ Kilian 1990; Iakovidis 1990.

⁷⁶ McDonald et al. 1983: 19–33.

⁷⁷ Coulton 1993: 48.

long. No iron nails were found; overall the craftsmanship was similar to, but better than, other EIA buildings.

On Crete and the Cyclades, abundant schist made all-stone walls practical. These houses again had little or no foundation trench, but normally had flat roofs of thin stone slabs on wooden rafters, sealed with clay. At Zagora, a house wall of c. 700 BC fell almost intact, preserving a single small, inverted-triangle shaped window. Stone hearths and benches were common, and by 700 drains were coming into use. A bathtub built into the archaic fortifications at Miletus probably also dates around 700.

Thatched roofs were rare after 700 and almost unheard of after 600, and foundations were more substantial, better dressed, and trenched in the sixth century. Shady internal courtyards became normal. There were advances in handling water, with better drainage, and cisterns for rainfall, and communal facilities in the sixth century. In general terms, archaic houses were built like those of the EIA, but better.⁷⁸ As with house sizes, the real take-off, surpassing Neopalatial Minoan standards, began in the late sixth century. The earliest known clay tile roof is on the Temple of Apollo at Corinth, c. 680 BC. By 600 most temples had tiled roofs, but they only became normal on houses after 500. The fifth century also saw larger rooms and more frequent use of plastered walls, paved floors, cisterns, and drains.⁷⁹

(d.3) Conclusion

Overall, EIA houses were less pleasant places than LBA and archaic structures, and much less pleasant than classical houses. In quantitative terms, I have suggested that a typical fourth-century house represents between five and ten times the level of consumption involved in a typical eighth-century house.⁸⁰ Standards of housing fell sharply in Crete after 1600 BC, then stabilized. They also fell in the Mycenaean world after 1200. We have almost no evidence for the eleventh century, and hardly more for the tenth, but most houses were certainly small and simple between 900 and 600 BC. During the eighth and seventh century standards of housing probably varied more than during the EIA. Standards improved rapidly from the end of the sixth century.

(e) EIA economic performance

EIA Greece (as I defined it above) supported fewer people, living shorter lives, in more squalid conditions than it did in LBA or archaic/classical times. Regional variations were pronounced, with Cretan and northern

⁷⁸ Lang 1996: 108–25. ⁷⁹ Trevor-Hodge 1960; Müller-Wiener 1988.

⁸⁰ Morris 2004: 722–3; 2005: 108–23.

experiences less catastrophic than Aegean and western. Overall, after varying experiences of economic decline in the twelfth and eleventh centuries, there was general depression in the tenth and ninth, and recovery in the eighth. Despite rapid population growth, there is no sign that bodily status deteriorated (though our data are still coarse-grained). Variations in housing increased in the eighth century, but median levels remained much the same. Maintaining average consumption in a period of rapid population growth implies major social changes – extensification, intensification, technological progress, and/or socioeconomic restructuring.

There are other indices that we might examine. No two tell exactly the same story, but the general pattern is unmistakable. For instance, although differences in abandonment processes make household goods hard to compare, if we take three sites destroyed by fire – Nichoria Unit IV-1 (burned around 800), Himera (burned 409), and Olynthos (burned 348)⁸¹ – the EIA assemblage is smaller, more limited, and of poorer quality than the classical cases. Alternatively, if we look at wealth diverted to public monuments, the Lefkandi Toumba apsidal building and Thermon Megaron B are the only large EIA buildings, but by 700 there were hundreds of temples. By 675 some were all stone, a hundred feet long, with tiled roofs. Religious architecture became still more impressive and expensive in the sixth century, and the bones from sacrifices suggest that new festivals increased the amount of meat eaten.⁸²

After 400 years of decline and stagnation, the eighth and seventh centuries saw extensive (aggregate) economic growth, and very modest intensive (per capita) growth. Both types of growth accelerated in the sixth century, and even more in classical times. The major economic accomplishment of the EIA seems to have been creating new structures that sustained what was, by ancient standards, major archaic–classical economic growth.⁸³

IV ECONOMIC STRUCTURES

(a) 1200–800

The LBA redistributive states⁸⁴ collapsed after the destruction of most palaces around 1200. Similar practices may have continued on a smaller scale at twelfth-century sites like Tiryns and Koukounaries, where new Mycenaean-style elite residences were built, but no twelfth-century Linear B documents are known. By 1100, these buildings were also destroyed. Large

⁸¹ Coulson 1983; Catling et al. 1983; Adriani et al. 1970; Allegro et al. 1976; Robinson 1931–52; Robinson and Clement 1938.

⁸² Hägg 1998. ⁸³ See Morris 2004: 728–33. On scales of growth, Saller 2002.

⁸⁴ See Chapter 7.

buildings survive further into the EIA in Crete and northern and perhaps western Greece, but nothing about them suggests redistributive systems.

Any detailed account of economic structures must combine archaeology with arguments from Homer and Hesiod.⁸⁵ If, as I suggested above, Homer drew on common assumptions about eighth-century life, these should allow us to reconstruct some of the institutions of earlier periods too. However, this is necessarily subjective.

Homer describes communities led by groups of nobles called *basileis*, normally with one of them recognized as leader. Each *basileus* was head of a large household (*oikos*) of kin and dependants. Sometimes Homer describes councils of *basileis* making decisions about public issues affecting all *oikoi*; other times, he describes assemblies of larger groups of free men, though the *basileis* still seem in control. As always, the question is what to make of the evidence. In this case, it may well be an idealization of EIA practices. In Linear B each palace is ruled by a *wanax*, but among the lesser officials is the *pasireu*, perhaps a village headman. By 1100 the *wanax* no longer had a recognizable function, and most philologists guess that this left the *pasireu* as the highest meaningful office. By Homer's time, *anax* survived as a word to describe the dominant *basileus*, but the *basileis* controlled the community.

Aegean burials suggest that by 1000 BC communities were dominated by groups of men who saw themselves as relative equals, drawing a line between themselves and the lower orders.⁸⁶ Large sites like Athens and Argos had dozens of these men, while the more typical small villages probably had just one. The "Great Houses" at sites like Smari, Karphi, and Kastanas may mean that hierarchy was more pronounced outside the Aegean. The only evidence in the Aegean for a single EIA leader standing above all others is the Lefkandi Toumba apsidal building. I have suggested that this had a more complicated function: as the excavators originally suggested, it was part of the creation of a new form of identity, the semi-divine *heros*. "Heroization" was a method through which EIA *basileis* protected the homogeneity of the elite by promoting outstanding (and threatening) men to heroic status at death.⁸⁷

Judging from Homer and Hesiod, the *basileis'* main tasks were providing security, plunder, justice, and divine favor. Whitley suggests that small settlements were tightly organized around their *basileus*; when his line failed or another man displaced him, the hamlet was abandoned.⁸⁸ Homeric *basileis* led the community's young men in war bands, rewarding them with plunder and honor in drinking parties and feasts. Military prowess was vital, and any of the *laoi*, the "people" following a *basileus*, could win

⁸⁵ See also Chapter 10.

⁸⁶ Morris 1987; 2000.

⁸⁷ Morris 2000: 208–38.

⁸⁸ Whitley 1991a.

glory (e.g., *Od.* 14.199–234). A *basileus* constantly had to justify his position. So long as he did so, the people honored him (*Il.* 12.310–21). This honor included a *temenos*, “cut-out land” for the *basileus*. Homer is clear that a *temenos* contained arable, orchards, and vineyards. On Ithaca, Laertes and Odysseus owned *temene* with valuable fruit trees, vines, sheep, and cattle (e.g., *Od.* 14.96–104). Poorer men had their own plots, called *kleroi*, owned through partible inheritance (*Od.* 14.208–10; Hes. *Op.* 37). Some men were called *polukleroi*, “of many plots,” and others *akleroi*, “landless,” so it must have been possible to alienate land; and in one story Odysseus says that because of his martial prowess he married a “woman from a family with many *kleroi*” (*Od.* 14.211–12).

If Homer’s assumptions bear any resemblance to the EIA reality of empty landscapes, then control of labor was crucial. Some laborers, like Odysseus’ shepherd Eumaios, were chattel slaves bought or captured from overseas. Others – probably the majority – were landless or poor local residents. Some, called *thetes*, sold their labor casually, while others entered longer-term relationships with powerful men. Homer represents the *thes* with no patron as the most wretched man alive (*Il.* 11.489–91), but says little about non-slave members of great families. Debt may have been an important tool, and some people may have entered servitude semi-voluntarily to gain security. In a dangerous, under-populated world with limited markets, contractual relations with the poor providing labor for the rich make a great deal of sense.⁸⁹ Homer stresses that *thetes* without patrons could not enforce agreements (*Il.* 21.441–52; *Od.* 18.356–75). There would not be much advantage to the rich in demanding a share of their dependants’ produce as rent if institutions for exchanging bulk products for finished ones were underdeveloped; and there is no good evidence for centralized agricultural storage. The distinction between people who received formal, archaeologically visible burials and those disposed of less formally may have coincided with that between the *basileis* and poorer but free and independent *oikoi* on the one hand, and the larger class of dependants on the other.⁹⁰

In classical Olynthos, some houses have concentrations of loomweights, storage, and metal slag, suggesting small-scale specialization.⁹¹ In Karphi, the only pre-750 site excavated on a large enough scale to identify inter-house differences, there is remarkable homogeneity; and most isolated houses from other sites contain traces of storage, weaving, eating, and metalworking.⁹² Hesiod’s account of Askra sets up domestic self-sufficiency as a goal, and the archaeological finds suggest that EIA households achieved this in many respects. Homer and Hesiod have words for potters (*kerameis*),

⁸⁹ Cf. North and Thomas 1973: 29–32. ⁹⁰ Morris 1987: 93–6, 173–83.

⁹¹ Cahill 2002: 169–79. ⁹² Morris 1991: 31–2.

metalworkers (*chalkeis*), and carpenters (*tektones*), but we should imagine a range of levels. Families would take care of simple needs themselves (e.g., Hes. *Op.* 423–36 on cart-building); would go to a village specialist for others (e.g., *Op.* 493–5, on the smithy); and would rely on traveling experts, or perhaps specialists based in the few large towns, for major tasks. The high quality of some EIA artifacts is probably a testament to these *demiourgoi*, “workers for the people.”

Iron must have made many productive tasks easier, but iron tools are very rare in the archaeological record. The earliest substantial cache is c.700, at Oropos.⁹³ Stone tools are also rare (although not unknown), so we should assume that bronze and iron tools were used for most tasks, but that they were expensive and carefully conserved. Compared to LBA and classical sites, EIA productive technology seems primitive.

Basileis provided two linked services in addition to security. The first was dispute resolution: *basileis* were *dikaspoloi*, “judges” or “realizers of the law” (*Il.* 1.258; *Od.* 11.186). A scene on Achilles’ shield (*Il.* 18.497–508) depicts this. The leaders’ credibility depended on the assumption that they had special access to the gods, who gave them greater wisdom and eloquence than others (*Od.* 8.166–77; Hes. *Theog.* 79–93). When the *basileis* appeared to act selfishly, support could be withdrawn (Hes. *Op.* 38–9, 202–12, 263–4).

Great *oikoi* like Odysseus’ on Ithaca or Nestor’s at Pylos produced most things that they needed, forming relatively closed economic systems. But even they desired goods from outside, especially women and metals. We can identify three main mechanisms for inter-*oikos* and inter-community circulation of goods. First is what Tandy calls “peripheral markets”:⁹⁴ when someone had a surplus of some good, and knew where to find people who desired that good, he simply went there and worked out a deal. The Achaean army at Troy was a perfect place for such markets (e.g., *Il.* 7.467–75).

The second mechanism involved outsiders, chiefly Phoenicians. Homer’s heroes combine desire for their goods with anxiety over inability to control them. Homer regularly represents Phoenicians as cheats, thieves, and kidnappers (e.g., *Il.* 23.741–4; *Od.* 14.288–9; 15.415–84). Polanyi suggested that one of the commonest institutions of dealing with such encounters is the “port of trade,” a controlled space where two cultures can meet.⁹⁵ Exchange rates could be negotiated and established as common knowledge, and reliable go-betweens found, lowering transaction costs. Al Mina on the Syrian coast may have been one such location; Kommos on Crete, which had a Phoenician-style temple by 850, another. There is evidence that Phoenician craftsmen settled in enclaves on Crete by 850. Crete had unusual levels of Near Eastern imports in the late tenth and ninth century, as did Lefkandi.⁹⁶

⁹³ Mazarakis Ainian 1998.

⁹⁴ Tandy 1997: 117–19.

⁹⁵ Polanyi 1963.

⁹⁶ Al Mina, Boardman 1990; Kearsley 1995. Kommos, Shaw 1989. Imports, Hoffmann 1997; D. Jones 2000.

The third mechanism, most prominent in the poems, was ritualized gift exchange. When one *basileus* visited another, he received gifts; feasting and gift-giving established frameworks within which more substantial transfers could take place (e.g., *Od.* 1.180–4). Mistaking a *basileus* for a trader (*prekter*) was a major breach of etiquette (e.g., *Od.* 8.158–64). Gift-exchange cemented alliances and defined hierarchy, but we should not exoticize and romanticize it into non-profit-seeking reciprocity. In a world where trust between members of different communities was an expensive commodity, gift exchange lowered transaction costs, creating at least some sanctions for unscrupulous behavior. In theory, Zeus would punish men who betrayed guest-friends (*xeinoi*). As van Wees notes, Odysseus was extremely self-interested in his pursuit of gifts; and when Glaukos gave Diomedes gold armor in exchange for bronze, Homer said he had lost his wits (*Il.* 6.119–236).⁹⁷ Odysseus' skill lay in his ability to extract the maximum gifts without actually breaking expectations about *xeinia*.

By 1000 BC, Greece had settled into a new economic equilibrium, at a lower level of performance than the LBA equilibrium. Population was small, political leadership weak, external contacts minimal, and many advanced skills had been lost. It made sense for poor families to attach themselves to larger *oikoi*, and for wealthy families to have dependent laborers work their lands. New belief systems formed, explaining and justifying contemporary poverty relative to the lost heroic age.⁹⁸ When trust and knowledge were scarce, it also made sense even for those rich enough to take risks to embed exchange in other social relationships. Gift-giving made it difficult to respond to changes in supply and demand or to exploit advantages in knowledge. But information and transaction costs were so high that the potential of guest-friendship to control exploitation counted for more than its rigidities. Few of the conditions that development economists identify as favorable to growth were present.⁹⁹

(b) *The eighth century*

This equilibrium persisted through the tenth century, but by 900 conditions were changing. Developments in the Levant gave the Phoenicians richer trading partners and incentives to seek materials around the Mediterranean. Hiram I of Tyre reportedly undertook voyages for Solomon around 950, and in Shalmaneser III of Assyria's time (858–824) Tyrian traders were active on the Euphrates. Around 830 Kilamuwa of Zinjirli put up a major inscription in Phoenician rather than Aramaic, presumably because of the level of Phoenician involvement in Syria.¹⁰⁰ By now Near Eastern goods were more common in Greek graves, and (as noted above) Phoenician/Syrian

⁹⁷ Van Wees 1992; Donlan 1989. ⁹⁸ Morris 2000: 217–18, 228–38.

⁹⁹ E.g., Ray 1998. ¹⁰⁰ Aubet 1993: 35–45.

craftsmen probably lived in Crete. In Homer, Near Eastern artifacts are highly prized status symbols, and their use in burials suggests the same was true in ninth-century Crete and the Aegean. We might suspect (though we can do no more than that) that trading profits drew more Phoenicians into the Aegean, and that the increasing supply of oriental goods drove down their cost for Greeks; and that as costs fell, more Greeks got access to them, triggering a kind of symbolic inflation, and perhaps greater efforts to generate products to trade with the Phoenicians. The use of exotic grave goods peaked at Lefkandi, Knossos, and Athens around 850–825. Small amounts of Greek pottery from 925 onward have turned up in the Levant, but we have to assume that Greece supplied mainly basic commodities such as grain, wine, oil, and humans.¹⁰¹

Around 800 Near Eastern grave goods become rarer in Greece, but they return in force after 750. Again, supply-side changes were important. Ashurnasirpal II of Assyria had extracted tribute from Phoenicia as early as the 870s, but around 740 Tiglath-Pileser III reorganized the Assyrian state and annexed all of Phoenicia except Tyre. He hugely increased tribute, extracting 150 talents of gold from Mattan II of Tyre around 730. In these years Phoenicians established bases in Spain, Sicily, Sardinia, and North Africa, and probably intensified activity in the Aegean.¹⁰²

These developments were important, but rapid population growth all across the Mediterranean basin surely did more to shock the EIA economic system out of its low-level equilibrium. From Iberia to Iran, everyone faced increasing competition for resources. The general population growth may be connected to a major climatic shift from the warm, dry, Sub-Boreal phase to the cooler, wetter, Sub-Atlantic. Bradley notes that “If such a disruption of the climate system were to occur today, the social, economic, and political consequences would be nothing short of catastrophic.”¹⁰³ The Sub-Atlantic regime may have eased problems of interannual variability in winter rainfall and moderated the disease pool, stimulating population growth.

In eighth-century Greece, we see two main responses: first, increasing competition within elite groups, as some individuals tried to capture the new resources and become rulers; and second, increasing competition between rich and poor. The two trends interacted, and led to a third outcome: a compromise between some members of the elite and the rest of the community, through which “middling” aristocrats formed oligarchies with enough popular support to stop any of their rivals establishing themselves as sole rulers. We might say that they preserved the internal egalitarianism of the EIA aristocracies against challenges from would-be kings by generalizing

¹⁰¹ Morris 2000: 238–56.

¹⁰² Aubet 1993: 45–76, 303–10; Bondi 1991; Frankenstein 1997.

¹⁰³ Bradley 1999: 15.

equality to all adult males in the community. Already in Homer, heroes seem more answerable to the common people than the elites of Egypt or the Near East. So successful were these cross-class alliances in the Aegean that in archaic times would-be kings were stigmatized as *tyrannoi*, tyrants beyond the pale of civilized society. Tyrants did rule some archaic Aegean cities, but they rarely lasted more than a generation or two. By 500 they had been completely defeated (though they remained a major force in classical Sicily and Italy). Oligarchy was the normal government until c. 500, when democracy gained ground.¹⁰⁴ I suggest that these structural changes had profound economic consequences. Jones argues that in pre-modern economies “growth can occur only within an ‘optimality band’ where factor and commodity markets are freed and the government is neither too grasping nor too weak.”¹⁰⁵ This, I believe, is precisely what happened in the late eighth and seventh century: loose EIA communities coalesced into city states with governmental structures strong enough to guarantee property, but not strong enough to act as predators. This framework, different from most ancient Mediterranean social structures, made room for rising living standards in archaic and classical Greece.

Around the Aegean and in Crete, elite spending on burial skyrocketed after 750, and new high-status goods (most famously, the giant “Dipylon” vases in Athens) were created. The “Great House” at Zagora reveals a new level of luxurious living, and there are indications of more lavish feasts than previously.¹⁰⁶ The very act of recording the *Iliad* and *Odyssey* in the new technology of writing may have been an attempt to foreground aristocratic claims to divine descent, and there was an explosion of “heroic” burials of recently deceased men between 725 and 700.

We see increasingly wealthy aristocrats marking themselves off from rivals and from EIA traditions of homogeneous, understated rituals. But there are also signs that these ideological claims were resisted.¹⁰⁷ Homer praises the rule of virtuous *basileis*, but also highlights the disruptive effects of elite greed and feuds.¹⁰⁸ Heroizing burials were also disputed. Successfully promoting a relative to semi-divine status presumably generated great *kudos* for a family, but the community as a whole also made claims on heroic tombs as sources of general protection. This tug-of-war was perhaps most complex in new colonies. The founder was regularly heroized, and his descendants normally claimed special standing from this; but his tomb was also a place of communal solidarity.¹⁰⁹ Compared to Near Eastern and Egyptian elites, archaic Greek aristocrats had remarkably little religious authority. Mazarakis

¹⁰⁴ I set out my argument in more detail in Morris 1998b; 2000: 155–91.

¹⁰⁵ E. L. Jones 1988: 187.

¹⁰⁶ Mazarakis Ainian 1997: 171–4; Tandy 1997: 142–9; Morris 2000: 287–306.

¹⁰⁷ Cf. Osborne 1996a: 84–5 on “cultural schizophrenia” in Athens.

¹⁰⁸ Balot 2001: 59–70. ¹⁰⁹ Malkin 1987.

Ainian has suggested that EIA worship of the gods went on largely in chiefs' houses, with religion being a major source of social power (as it had been in LBA). In the eighth century, however, secular and religious authority were separated, and spatially distinct sanctuaries with temples created.¹¹⁰

I have argued that a narrow group of wealthy men and women developed an "elitist" ideology, claiming special power through privileged links to the gods, the past, and the rulers of the East. "Middling" aristocrats who grounded authority in the local community resisted them at all points, representing elitists as would-be tyrants. By 700, middling attitudes gained the upper hand in most of the Aegean: lavish burials and houses disappeared, and the major focus of spending was communal sanctuaries. Athens was an exception, however, only rejoining the general Aegean pattern in the later sixth century.¹¹¹

A major outcome of the eighth-/seventh-century turmoil was the creation of aristocratic colleges, or oligarchies, governing small city states. These groups submitted to common rules, setting up offices and taking turns to exercise different dimensions of leadership. Much early Greek law is procedural, regulating who may hold which office, for how long, and establishing penalties for infringements.¹¹² These formative state offices held little real power. So far as we can tell, they could not impose land, poll, or income taxes. Archaic states organized wars with other states (which, using hoplites, were remarkably cheap), and provided some religious goods (especially temples and communal festivals). They paid for these through indirect taxes, especially harbor and market dues, and revenues from communally owned land and minerals.¹¹³ Later anecdotes show that plenty of office-holders tried to enrich themselves or to seize power, but they met greater resistance than in most ancient states. Hesiod's *Works and Days* has few parallels as a tirade against elite predation, and there is some evidence for a widespread assumption that the natural response to excess was the rise of a tyrant – the one thing that oligarchs most wanted to avoid.¹¹⁴

The leaders of these formative states faced competitive and transaction-costs constraints: they had to prevent rival rulers from emerging (or from conquering their *polis* from outside), and to generate the revenues they needed for military and religious goods. The trade-offs that began in the eighth century reduced elite feuding, presumably lowered and distributed more fairly the costs of security and religion, and clarified property rights. As usually happens, the price of the alliance between middling aristocrats and poorer free men was a reallocation of property rights.¹¹⁵ Beginning in the late eighth century, new ideas of citizenship formed, guaranteeing free local-born men rights in their own bodies and land. The process was

¹¹⁰ Mazarakis Ainian 1997. ¹¹¹ Morris 1998c; 2000. ¹¹² Hölkeskamp 2000a; 2000b.

¹¹³ Andreades 1933. ¹¹⁴ McGlew 1993. ¹¹⁵ North 1981: 20–32.

slow, and is best known from Solon's reforms at Athens in 594 BC, but was well under way by the late archaic period. The logical consequence of the strengthening of citizenship was the development of chattel slavery, since free citizens working their own land had few incentives to labor for wages.¹¹⁶

Some aspects of citizen equality worked against economic growth. In classical times, those *poleis* that pushed male equality furthest also erected strong barriers to women's economic activity and fostered a belief that commercial exchange violated the reciprocity that should prevail among citizens.¹¹⁷ However, we do not know how pronounced these attitudes were in the eighth century; and classical Greeks found ways around them. One was to use agents; another was to deal in city states other than their own (a practice formalized by the late sixth century in the status of the *metoikos*, or "co-resident").¹¹⁸ The prominence of debris from metal casting at eighth-century sanctuaries might indicate that some traders took advantage both of the ready market provided by crowds at festivals and of the sanctuaries' ideological neutrality, as spaces outside the everyday world. But whatever the precise mechanisms, Corinthians and Euboeans were involved in trade from one end of the Mediterranean to the other by 700. De Angelis argues from grain silos at Megara Hyblaea that by the same date Greek colonists generated agricultural surpluses for trade with the Aegean. Conquest of Sicily's plains, watered by more reliable rainfall than the Aegean, doubled the arable land under Greek control by 500 BC. If De Angelis is correct that grain trading tied Sicily and the Aegean together from the eighth century, colonization fundamentally changed the land: labor ratio in the Greek world, allowing Aegean Greeks to exploit comparative advantages in some agricultural goods (wine, oil) and in manufactures such as pottery, while Sicilian Greeks sold them grain. Rather than a developed Aegean core coupled with an underdeveloped periphery, as world-systems models would predict,¹¹⁹ gains from trade benefited all parties.¹²⁰ The initial eighth-century settlements in Sicily seem very poor, but in the sixth century Syracuse, Akragas, and Selinous built some of the finest temples in the Greek world. State duties on imports and exports presumably paid for them.¹²¹

The first steps in extending Greek economic activity across the Mediterranean may have been parasitic on Phoenician initiative. Certainly at Pithekoussai, the first permanent Greek base in the west, there is some evidence for a mixed Greek, Semitic, and Italic population.¹²² Here, and

¹¹⁶ Finley 1980: 67–92; 1981 [1959–63]: 97–166; Morris 2002. ¹¹⁷ Schaps 1979.

¹¹⁸ Reed (2003: 62–74) presents the limited archaic evidence.

¹¹⁹ Wallerstein 1974–89: vol. 1, applied to the Mediterranean in Sherratt and Sherratt 1993.

¹²⁰ See the lucid discussion in Irwin 2002. ¹²¹ De Angelis 2000; 2002; 2003.

¹²² Ridgway 1992; Boardman 1994; Docter and Niemeyer 1994.

probably at other sites too, Greeks and Near Easterners transferred knowledge and technology. The eighth century saw the first major expansion of the Greek stock of knowledge since the introduction of iron in the eleventh century, much of it probably through this route. Greeks probably borrowed from the Near East the shipping technology that took them to Pithekoussai more quickly, more safely, and more cheaply.¹²³ The alphabet, probably devised by a bilingual “adapter,” was another striking borrowing. Greeks may have added vowels to the Phoenician consonantal script to make it easier to record poetry.¹²⁴ Once in use, the script greatly reduced information costs. The return of representational art, monumental architecture in stone, and life-size stone sculpture in the eighth and seventh centuries all added new communicative technologies, again drawing on Near Eastern and Egyptian models. Tool marks on stone blocks at Corinth show that iron chisels were now common. Even that most characteristically “Greek” invention, the hoplite panoply, owed much to Near Eastern bronze hammering techniques, but in this area the Greeks rapidly overtook their teachers. By the 660s Greek mercenary hoplites were important in Egyptian resistance to Assyria, and Greek military technology transformed Italian warfare.¹²⁵

The move toward middling oligarchic citizen states dominated the Aegean basin, but was not the only Greek response to the eighth-century crisis. In Crete, Thessaly, and Laconia, citizen communities, sometimes highly egalitarian, saw themselves as descendants of Dorian conquerors, and ruled over large serf populations.¹²⁶ Sparta took this idea further, responding to eighth-century pressures by conquering neighboring Messenia and reducing its population to helotage.

Sparta was the greatest archaic military power, and probably one of the wealthiest states.¹²⁷ But in classical times, states like Athens that defined citizenship more broadly proved most successful. They had moved into Jones’ “optimality band,” providing the most important goods of security and property rights without creating autonomous state institutions and rulers that could act rapaciously. Classical authors agreed that predation was the hallmark of tyrants, who pursued their own profits at the expense of the community’s economic health, depressing its growth.¹²⁸

(c) *Conclusion*

Greek economic performance declined between 1200 and 1000 BC, and living standards were probably lower between 1100 and 800 BC than at any time since the Middle Bronze Age. After 800, recovery began. In the slump

¹²³ Morrison and Williams 1968: 12–69; Casson 1971: 43–60, 71–6; Wallinga 1993: 45.

¹²⁴ Powell 1991. ¹²⁵ Snodgrass 1980: 104–5, 148–52, 154.

¹²⁶ Van Wees 2003. ¹²⁷ Hodkinson 1998; Powell 1998.

¹²⁸ Particularly Hdt. 1.59; 5.78; Thuc. 1.17; cf. Arist. [*Oec.*] 2.34.

at the beginning of EIA and the recovery at its end Greeks created new economic and social structures and new systems of thought. These were profound and long-lasting transformations. Around 1000, Aegean Greece was one of the poorest regions in the north Mediterranean, but by 700 it was one of the most dynamic and expansive. It was still poor compared to Egypt, Anatolia, the Levant, or Assyria, but over the next quarter-millennium a structural revolution pushed Greece into the “optimality band,” in which the state is strong enough to provide security and guarantee property, but not strong enough to engage in destructive rent-seeking. The structures that began forming in the eighth century enabled classical Greeks to enjoy an unusual period of intensive, per capita economic growth, and remarkably high living standards for a pre-modern society.

The causes of these EIA processes remain obscure. We need to study them on a large scale; there was a general east Mediterranean crisis in the twelfth and eleventh centuries, and a general population explosion and episode of state-formation in the eighth and seventh. But much about the Greeks’ response to the vast impersonal forces of climate and demography was unique.