Transforming Village Societies in the Prehistoric Iron Age

Fifth, far-seeing Zeus made yet another race of men, who have come to be on the fertile earth. I wish I were not among these fifth men but had died before or been born after. For now this is the race of iron.

—HESIOD, *WORKS AND DAYS* 173–76

Hesiod had already sketched a sharp contrast between the Bronze Age and Iron Age by the eighth century BCE, when he looked back to an "age of heroes," in contrast to the ceaseless toil that characterized his own time. In spite of Hesiod's denigrations, iron brought with it profound material and technological consequences for the ways in which societies would operate, not least owing to the utilitarian value and the general ubiquity of the material. The Early Iron Age in Greece is defined by transitions in settlement, pottery styles, and technologies, from the Mycenaean forms of the Bronze Age to the Protogeometric and Geometric styles of the Early Iron Age. But such changes did not happen overnight. Nor were they isolated phenomena. The Early Iron Age was a time of experimentation, and the exchange of ideas (more than great technological revolutions) that took place then must be viewed in terms of a transition from, rather than a break with, the preceding Bronze Age. New craft traditions and the reorganization of Mediterranean commerce provide an essential backdrop for wider sociopolitical developments in central Greece, especially as they are related to a (further) reorganization of settlement. Like other prehistoric periods, the lack of contemporary writing leaves us to depend most heavily on the material record to interpret social change.

In this chapter I argue that the major social and technological changes of the eleventh to ninth centuries BCE mark a crucial phase in the early Greek world. While village-based, complex communities continue to characterize the settlement pattern of central Greece, new technologies and production networks set in motion macroregional and trans-Mediterranean processes, which would come into full bloom with the revolutionary developments of the eighth century BCE (see

chapter 6). Local leaders and regional practices are well evidenced and demonstrate major elements of continuity from the preceding Postpalatial Bronze Age. Indeed, in several places, processes of political recentralization begun in Postpalatial times seem to have intensified in the Early Iron Age. There is a noticeable redistribution of settlement that reflects changing attitudes toward the landscape while nonetheless maintaining several attributes of the previous transition to life after the palaces. Moreover, interactions were maintained in the wider Mediterranean, which saw some of its most meaningful shifts at this time, as the connections explored at the end of chapter 4 became more persistent and Levantine traders became more involved with both Greece and parts of the Mediterranean farther west.

I begin this chapter with the landscapes and regional developments of central Greece in the Prehistoric Iron Age (ca. 1050–800 BCE).[1] I show that significant social changes accompanied settlement pattern shifts and that the character of social complexity developed along multiple tracks. Eccentric network and settlement growth is apparent at Lefkandi and at Athens, while other regions demonstrate varied continuities or breaks with the preceding Bronze Age. I then discuss the major changes in metal and ceramic technologies in this period, and I demonstrate how production systems comprise proxies for interaction on multiple scales. Finally, I address the wider Mediterranean context of central Greece in the Early Iron Age, and I explore how the story told here by the archaeological record relates (or does not relate) to later historical accounts of mobility and migration.

HIERARCHY AND HETERARCHY IN THE EARLY IRON AGE LANDSCAPE

As in previous chapters, networks and spatial analysis are used here to model and discuss the settlement pattern of central Greece in terms of territory, connectivity, and social organization. I supplement these models with site- and region-specific discussions of networking practices by individuals and groups in Attica, central Euboea, and elsewhere in central Greece. This complex web of connections, and the range of entities involved—sites, individuals, regions—reveal multiple hierarchies within the social and political landscape. These are perhaps better termed heterarchies—that is, relationships between components that are either unranked or that could be ranked in multiple ways (Crumley 1995, 3). The Early Iron Age witnesses substantial variability in regional organization and in the expression

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1. The Prehistoric Iron Age includes the Protogeometric, Subprotogeometric, and Early and Middle Geometric ceramic periods, depending on the regional chronologies (see table 1). This is an unconventional grouping, since Protogeometric usually is treated separately from, say, the Attic Early and Middle Geometric periods. These distinctions, of course, are based on ceramic chronologies rather than on societal developments. In considering the complexity, scale, and spatial distribution of Aegean societies during this period, I argue that this grouping fits well together and is distinct from both the Postpalatial Mycenaean period that precedes it and the Late Geometric period that follows it.

of inequality on individual levels, both within and between sites. In general, the settlement and the social organization of this period find their best parallels with village societies, operating mostly locally, with certain links farther afield that are particularly meaningful in the expression of social difference (Bandy and Fox 2010). Such difference is realized on an individual scale rather than institutionally. Again, we might characterize certain groups as complex communities, characterized by shifts between more hierarchical and more egalitarian modes of social organization (Porter 2013, 5).

In the Prehistoric Iron Age, new patterns emerged in the distribution of settlement throughout central Greece, though important elements of continuity also remained. The Euboean Gulf continued to act as a conduit for the individuals and groups living around it, despite the changing social structures that appear in the archaeological record. The main transitions from the preceding Postpalatial Bronze Age were shifts in settlement locations, a general (though not universal) decline in architectural scale and settlement size, and changes in burial practices.

Settlement Patterns in the Early Iron Age

The settlement pattern of the Prehistoric Iron Age does not depart dramatically from the preceding Postpalatial Bronze Age. Nevertheless, there are several significant developments (map 18). There is, again, regional variation in site numbers rather than a strict pattern of continuity from the previous period (see figure 2). There is a drop in the total number of sites in Attica, although there is an increased concentration of settlement in the vicinity of Athens itself. Boeotia experiences a small increase in the number of sites, but there is not major growth after the reduction that occurred in the Postpalatial Bronze Age. One interesting trend is the drop in site numbers in eastern Boeotia, especially around the Euripos, which suggests that the Boeotian interests in the region during the Bronze Age may have been eclipsed by the waxing community at Lefkandi in Euboea. Meanwhile, western Boeotia seems to have prospered, filling in the landscape toward East Lokris and Phokis, where the northwest-southeast axes on either side of Mount Parnassos form an arc of significant sites reaching from the Corinthian Gulf deep into central Greece. Moving north, East Lokris continued to prosper, especially in the bay of Atalanti and around Kalapodi. In Malis, in particular in the Spercheios valley and its surroundings, there is a general continuity of settlement locations, and there is even growth in the number of sites.

Thessaly, too, experienced growth in this period, nearly doubling in the number of sites from 21 to 35. It has 11 more sites than the next most heavily occupied region, which highlights the unique character and significance of an area once seen as peripheral (Georganas 2011; Karouzou 2017). Also noteworthy is the appearance of Kefala on Skiathos, just outside the northern outlet of the Euboean Gulf. This may have been an important stepping-stone on the sea route to the northern Aegean (Mazarakis Ainian 2012b).

MAP 18. Prehistoric Iron Age site locations compared to the Postpalatial Bronze Age.

Central Euboea seems to swell in importance in the Early Iron Age, indicating a trend that began in the Postpalatial Bronze Age, most notably at Lefkandi. The location of sites elsewhere on the island is also significant. Rovies and Dafni are located across from prominent places in the bay of Atalanti. The cluster of sites on the Euboean side of the Euripos also grows in number. This growth is accompanied by the disappearance of settlement locations on the Boeotian coast. Finally, we should note the appearance of Plakari (ancient Karystos) in southern Euboea (Crielaard and Songou 2017). According to our present data, this is (surprisingly) the first new site established in southern Euboea since the Middle Bronze Age.

Sites vary greatly in terms of the quantity of material, the level of study, and whether or not they represent a settlement, a cemetery, or a handful of sherds. Owing to the relatively small size of all sites in this period, there was a need for these communities to interact with one another for basic subsistence and survival.
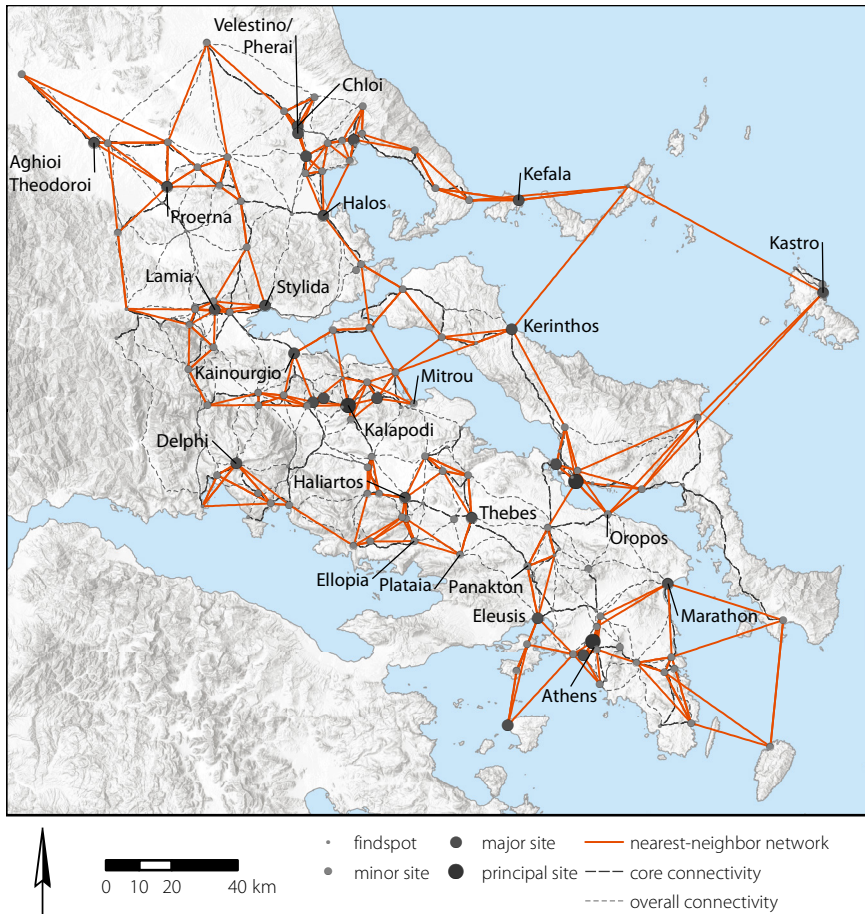
MAP 19. Prehistoric Iron Age sites, joined by a connectivity model, with a nearest-neighbor network of communities (see also map 18 and appendix for additional place names).

In the absence of a regionally centralized authority, these interactions would have been subject to change and improvisation, much as they were in the Postpalatial Bronze Age (and in other periods of Greek prehistory). The general pattern of modeled interactions in the Early Iron Age (map 19) is similar to that seen in the previous period (see map 15), though it is most noteworthy in the intensification of interaction in a few particular zones—namely, Athens/Attica, central Euboea, East Lokris/Phokis, and Thessaly.

In the Postpalatial Bronze Age, there was a clear separation between southern Attica and the rest of the Euboean Gulf, as Attica was more in touch with the Saronic Gulf and the Cyclades. This pattern was maintained in the Early Iron Age. Throughout this period, settlement patterns in Attica became more dispersed, and

the size and influence of Athens grew: this was likely on account of demand for its high-quality pottery and its role as an innovator in the Protogeometric style (Snodgrass [1971] 2000, 43–44).[2] In addition to the ceramic evidence, which is clear on the primacy and wide dispersal of Attic pottery, the settlement pattern and the resulting model of regional interactions open up to link with Boeotia—most likely via Panakton and Thebes, but also with Euboea, Aghia Irini on Kea, and Zagora on Andros (although the Attic Protogeometric travels far beyond these near neighbors). Wealthy burials at Athens, on the Areopagus and at the Kerameikos, testify to connectivity—through trade in metals and luxury items—with northern Greece and the eastern Mediterranean.

One of the more significant features of the Early Iron Age in central Greece is that Athens emerges as the preeminent center of settlement across the region as a whole. No other site appears to be as large or influential in this period. The apparent extent of the town, the number of burials, the influential pottery production, and the connections to the rest of the Greek world all exceed what can be documented at other sites. With its remains scattered over some 200 hectares, the community at Athens appears to be about twice the size of the next largest in the Greek world, at Knossos (ca. 100 hectares) (Morris and Knodell 2015, 347; Dimitriadou 2019).

There are also diachronic trends that make Athens stand out. In the Early Protogeometric period, Athens seems to be the only occupied site in all of Attica (Alexandridou 2017), though it is difficult to know what to make of this. The apparent presence of only a single site of this date may ultimately say more about the evolution and spread of the Protogeometric style than about continuity of occupation. Nevertheless, Attica appears to have experienced marked growth in the Late Protogeometric and Early Geometric periods as Eleusis, Marathon, Brauron, and Thorikos emerged as significant centers. While the interregional orientations of Attica were mostly to the south and east during this period, long-distance links between Attica and northern Greece—most likely via the Euboean Gulf—are increasingly apparent and were part of a legacy that ran from much earlier in the Bronze Age well into the Classical period (Kotsonas 2015; Leone 2015).

Settlement in central Euboea also saw poignant intensification in this period, both locally and regionally. The network growth that is the result of more sites coming into the model seems to follow the behavior of scale-free networks, where new nodes attach preferentially to those that are already well-connected. There is no question that Lefkandi was a hub of exceptional importance, reaching far beyond the nearest neighbors modeled in map 19. This was anticipated in the influence of its ceramic workshops in the LH IIIC period (see map 16), and it is highlighted by the far-reaching connections to Cyprus, Egypt, and the Levant that

2. See Desborough 1952 for Athens as the origin of the Protogeometric style. See also Snodgrass (1971) 2000, 43–44; Dickinson 2006, 131–32.

made it exceptional in the Early Iron Age (Coldstream 2007; Nijboer 2008; Kosma 2012; Papadopoulos 2015). New sites, not occupied during the Postpalatial period, appear at Phylla, Nea Lampsakos, Kamari, and Magoula (see map 18; see appendix for particular locations), while others grow considerably at the end of this period and in the next (e.g., Eretria) (Coulton 2002; Verdan, Kenzelmann Pfyffer, and Léderrey 2009).

Elsewhere in central Greece, new settlement networks appeared—for example, in western Boeotia and central Thessaly—while others were largely maintained, even if in a thinning settlement pattern—for example, in southern Boeotia and northern Attica. The Skourta Plain, where four small sites are known, provides an interesting case (Munn and Munn 1989, 1990; Farinetti 2011, 394–96). In this model the sites appear to be maintained as important points of contact between Eleusis and Thebes, and indeed Panakton is one of the few sites to have a stratified sequence of LH IIIC to Protogeometric pottery (Munn 1996).

Settlement in eastern Boeotia also drops off considerably. The one site on the mainland coast of the Euboean Gulf between Marathon and Mitrou is Oropos (Skala Oropou), which seems to have more in common with Euboea in this period. Indeed, this site may have functioned as an extraterritorial outpost for Eretria in the Middle and Late Geometric periods and possibly before these periods as well (Mazarakis Ainian 2002; Charalambidou 2017). In Protogeometric times, Oropos was certainly closer to the Euboean network than to other sites in Boeotia. Beyond Oropos and the route through the Skourta Plain, Prehistoric Iron Age activity in Boeotia seems to be oriented to the west of Thebes, with Haliartos and Askra as other significant sites (see maps 4, 18, and 19).

Farther west, there is a significant concentration of sites between the bays of Itea and Antikyra, highlighting the significance of these locations as access points from the Corinthian Gulf through the Great Isthmus Corridor (Vatin 1969; Kase et al. 1991; Sideris 2014). A line of sites from Delphi to Lamia indicates that this was still an important route (Dakoronia 1991). Curiously, however, there is no Iron Age material documented at Amphissa until the eighth century. In the Kephisos valley, too, there is a decline in the overall number of sites, although this is another area of substantial continuity of occupation, especially at Elateia.

Kalapodi acted as a bridge between Phokis, East Lokris, Malis, and Boeotia and also shows marked continuity in cult activity (Kaiser, Rizzoto, and Strack 2011; Niemeier 2016). Several new sites appeared in its general vicinity as well, indicating growth in the significance of this inter-regional shrine.[3] While cult activity at Kalapodi can be traced back to at least LH IIIA, a change toward the "votive habits" that would characterize Geometric and Archaic sanctuaries happened as early as the 9th century BCE (Felsch 2007; Niemeier 2016).

3. The case of Kalapodi, even though it is an inland site, in fact highlights the importance of the Euboean Gulf, since its role as a regional sanctuary was eclipsed by Delphi after the Geometric period on account of network shifts (McInerney 2011).

East Lokris experienced a similar pattern of growth. Extensive burial evidence has been documented at Atalanti, and continuous occupation is also known at Agnanti (Papadopoulou 2017). Significant clustering in the network model occurs especially around the bay of Atalanti, where centers like Kynos and Mitrou also exhibit direct continuity from the Late Bronze Age to the Early Iron Age (Dakoronia 2003; Dakoronia and Kounouklas 2009; van de Moortel 2009).

Finally, the network that develops around the Pagasetic and northern Euboean Gulfs is particularly important. Several sites emerge as competing centers on this crossroads between the northern and southern Aegean. The bay of Volos is at the outlet to the sea for the major land route from the north, which we know was important for metals and other commodities, and there is a clear growth in settlement in this area at many locations that are better known for their prominence in later periods. A growing body of evidence from the Malian Gulf, Lamia, and the Spercheios valley shows that Malis, too, must be considered a significant player during the Early Iron Age (Papadopoulou 2017, 317, fig. 5). On Euboea, Lichas and Oreoi are important nodes along the strait that exits the Euboean Gulf for the Aegean; farther afield, Kefala (on Skiathos) and Theotokou (in Magnesia) are well positioned to catch traffic from both the gulf and the Aegean route to the north.

Overall, there is a gradual reordering of the settlement pattern in particular parts of central Greece, with new clusters forming and loosely interspersed sites in between. The broader dispersal of settlement that was characteristic of the Postpalatial Bronze Age (and was the direct result of decentralization) gave way to greater concentration in areas of growing importance. The areas that seem to be the focus of this settlement intensification had already come to the fore in LH IIIC, and in the Early Iron Age they remained significant as other areas dropped off and people moved closer to areas of greater interest. At certain sites—especially Lefkandi, Athens, and various places in Thessaly—new strategies of social differentiation were pursued that made use of both local efforts toward group integration, such as feasting and funerary practices, and exotica brought from long distances (see further below).

Finally, some comment must be made on the nature of the evidence. Most of the patterns discussed above are based on funerary evidence rather than on extensive evidence of settlement, which is relatively rare in the Prehistoric Iron Age (see table 4). This pattern may indicate the use of ephemeral materials for the construction of buildings and habitation areas. People were obviously living somewhere, but these locations may be less visible archaeologically than in other periods. Papadopoulou (2017) has suggested that the settlement and funerary evidence we do have from central Greece probably indicates social organization based on small family units for most communities. This is something that must be inferred for the vast majority of cases, since, of 152 sites in the study area, only a handful have Early Iron Age components that have undergone extensive excavations. The burial record, by contrast, offers some of the most widespread and significant evidence for the Early Iron Age (Morris 1987; Whitley 1991).

The Creation of Inequality through Individual Networks

Topologies of relationships between people operate most intensely on a local scale, though they make crucial use of regional and long-distance connections. In the Prehistoric Iron Age, we can see a variety of ways in which particular individuals used such networks in the expression of social and political inequality. Patterns do not occur uniformly across regions and even vary on a site-to-site basis. Yet in many places we do see an intensification of sociopolitical complexity, population growth, and overseas trade. These trends run contrary to notions of universal decline in the Protogeometric period, though we must also keep in mind that much of the Greek world does seem to experience a drop in population and material production (see, e.g., Snodgrass [1971] 2000, xxiv; Murray 2017). Early Iron Age burials, especially elite burials and the grave goods that accompany them, allow us to reconstruct certain networking practices of elites (the deceased and those who interred them).

Athens.   Funerary remains constitute our principal evidence for the size, extent, and population of the community of Athens during the Early Iron Age. Groups of wealthy graves of PG, EG, and MG I date are scattered throughout the present-day city (Dimitriadou 2019, 142–46; for abbreviations, see table 1). These indicate an overall settlement size of ca. 200 hectares, which was probably organized in semidistinct groups of households that nonetheless comprised a single large community, at least in terms of regularized social interaction. The main clusters of evidence all fall within the central area of the modern city, complicating our understanding of the period. Nevertheless, we can tell that the remains of early Athens are roughly bounded by the Eridanos and Ilissos rivers, and that they extend over most of the area of the later Classical city, demarcated by the Themistoklean walls. The spatial extent and complexity of the community indicate a different level of local (and perhaps regional) integration than seen elsewhere in the Greek world at the time. This seems to signal, along with the wide dispersal of Attic pottery, that Athens's star was already on the rise. Pockets of funerary evidence that likely correspond to semidispersed habitation clusters can be observed as early as LH IIIC (and include Submycenaean). Many of these zones continued to be used or expanded in the Protogeometric and Early–Middle Geometric periods. By the Late Geometric period, enough infilling had occurred to suggest more or less contiguous loci of habitation.

The large cemeteries, especially the Kerameikos, have received the most scholarly attention of any in Early Iron Age Greece, especially in terms of mortuary practice.[4] Beyond the Kerameikos, significant Early Iron Age funerary remains

4. Excavations at the Kerameikos site have been conducted by the German Archaeological Institute in Athens since 1913, following excavations by the Archaeological Society of Athens in the nineteenth century (Knigge 1991). Relevant publications include several volumes on graves that date from the twelfth to the eighth centuries (Kraiker 1939; Kübler 1943, 1954; Ruppenstein 2007). On synthetic studies of mortuary practice, see Krause 1975; Morris 1987; Whitley 1991; Papadopoulos 1993.

have been found at the location of Plato's Academy, where ritualized drinking assemblages have come to light from EG I (Mazarakis Ainian and Livieratou 2010; Mazarakis Ainian and Alexandridou 2011), and in the Agora, where ceramic production remains have been found alongside burials and possible signs of habitation (Papadopoulos 1996c, 2003; Mazarakis Ainian 2012a; Papadopoulos and Smithson 2017).

In general, the number of burials stays relatively consistent from PG to MG I, before an increase in MG II and a dramatic rise in LG I and LG II. Morris (1987, 93–96) uses these shifts as a starting point to argue not for a substantial population boom in LG but rather for formal burial as an indicator of social rank in the periods in which it is scarcer (PG–MG). The general picture of wealth found in some of the PG–MG graves, along with their relative rarity overall, suggests that burial itself (or at least archaeologically visible burial) was a privilege accessible to only the upper class of society and a strong indicator of social inequality and the presence of an aristocracy. In the eighth century, a shift occurs, which is argued to be coincident with the emergence of the polis. Burial came to be accepted for all citizens in an egalitarian effort that at the same time aimed to legitimate other social inequalities (for example, between Greeks and others, as well as between citizens and noncitizens). These points are well articulated by Morris (1987) and they are generally accepted by others (e.g., Papadopoulos 1993; Bintliff 2012, 226). Some factors complicate this picture, however. For one, graves of the eighth century were not ostentatiously marked but would nevertheless have still been sited among earlier, marked graves, and as deliberate expressions of social status (Small 2015, 80–82). Such practices would have been accompanied by drinking activities, oriented around monumental kraters and using utilitarian ones, which had continued relevance to expressions of political authority (Bohen 2017). Dimitriadou (2019), integrating data that has been gathered over the last 30 years, has shown that settlement evidence probably does correspond with actual population growth, as Athens evolved from dispersed clusters of habitation areas into a more coherent community (see also Papadopoulos 2003, 299, fig. 6.15). So, while Morris's shift in expression of burial is valid, real growth was likely occurring as well, alongside the long-standing, exclusionary and inclusionary practices surrounding death and burial in particular places.

The most famous of the Early Iron Age burials of Athens is the tomb of the "Rich Athenian Lady" (Smithson 1968; Coldstream 1995; Liston and Papadopoulos 2004; Stampolidis and Giannopoulou 2012). The grave goods indicate the wealth or status of the deceased, or at least of those aiming to associate themselves with her—presumably family members. Pottery items found with the burial were of extremely high quality and date to the EG II period; these include a belly-handled amphora used as a funerary urn, a small neck amphora, and several pyxides and model granaries—most notably, a chest with five model granaries on top (probably a jewelry box). A variety of other types of finely made pots were also present

(Smithson 1968, 83–109; Langdon 2008, 64). In addition to the pottery finds, metal pins, bronze fibulae, gold rings, gold earrings, a necklace, faience discs, glass beads, two ivory stamp seals, and one ivory disk were found (Smithson 1968, 109–16; Papadopoulos and Smithson 2017, 124–76). The overt wealth expressed in the deposition of such objects was complemented by their diverse origins. Coldstream (1995) noted the similarity to other wealthy burials from Athens, as well as from Lefkandi and Knossos; but before we draw special connections between these three sites, we should acknowledge that these are simply the wealthiest, best preserved, and best published Early Iron Age cemeteries in Greece. Feasting evidence is also apparent, with animal bones associated with the burial representing over 70 kilograms of meat that would have been consumed at the funerary event (Liston and Papadopoulos 2004, 29; Ruscillo 2017, 566–67). The spectacle of the funerary event must also be considered paramount to the assemblage, as we see in other places, such as Lefkandi.

The grave goods in this and other wealthy burials from Athens demonstrate connections to a variety of distant locations. Faience and ivory likely had Egyptian origins, although these materials probably would have come to Athens via Cyprus or the Levant, which are also possible points of origin for the bronze. Other metals—namely gold—were also imported, possibly from the northern Aegean, the Cyclades, or Egypt. These items were valuable in this local context precisely because they were distinctively nonlocal, making reference to a wider, exclusive network of connections in which the Rich Athenian Lady and those burying her were entangled. Indeed, such burials are part of a wider pattern of expression of Early Iron Age elite identity, which can be seen in the "princely" burials of both men and women in several parts of the Mediterranean world (Stampolidis 2012). This exclusivity was made even more explicit by two factors. The first and most obvious (if we accept Morris's 1987 thesis) is that many members of the population did not receive any type of burial whatsoever at this time. The second is that feasting practices were focused on the burial of a particular individual; they happened in open space, yet were a type of place-making activity that highlighted social inequalities by emphasizing (conspicuously) various types of consumption at a burial event (Hayden 2009; LeCount and Blitz 2010). This stands in contrast to the feasting practices of the Postpalatial Bronze Age, which seem to have occurred more frequently in nonfunerary social contexts. Funeral feasting at Athens, then, indicates a concentration of this particular type of social practice around elite individuals and their postmortem celebrations, rather than the living dispersal of resources seen in aspects of Bronze Age feasting. Nevertheless, Early Iron Age rulers' dwellings in Athens and elsewhere in Attica (the Academy, Eleusis, Thorikos) signal that the world of the living was important in the performance of status and inequality as well (Alexandridou 2018; van den Eijnde 2018).

Early Iron Age societies, including at Athens, find their best comparanda with "intermediate" or "transegalitarian" complex communities. The mortuary record

signals that individuals within these societies were far from equal ("egalitarian" society is in most cases probably a misnomer), but there is little evidence for social inequality or political organization supported by strong, lasting institutions. Morris's (1987) model for dynamic patterns in the consumption of grave goods fits quite well with the idea of community complexity advanced by Porter (2013), which allows for looser modes of social organizations and fluctuations across space and time.

Lefkandi.   Snodgrass (1994, 87) called the Euboeans the "great discovery of early Greek archaeology since World War II." This was in no small part attributable to the spectacular finds at Lefkandi from the 1960s onward, although it was also related to increasing evidence for Euboean activity in the eastern and central Mediterranean throughout the Early Iron Age.[5] The discovery of the Toumba building at Lefkandi, and the wealthy burials within it, turned on its head the assumption that the Early Iron Age was exclusively a time of isolation and egalitarianism (Catling and Lemos 1990; Popham, Calligas, and Sackett 1993).[6] Lefkandi was a significant site throughout the Bronze Age, especially in the Postpalatial period (see chapter 4). Nevertheless, it is best known for its Early Iron Age cemeteries and the associated settlement at Xeropolis. The most important discoveries for the Early Iron Age are the elite burials located in the Toumba building, a monumental apsidal dwelling or funerary monument, and in the Toumba cemetery immediately east of it (figure 6). Together these burials reflect sustained practices of social differentiation, rooted in places of particular significance. Such significance was derived from the memory and repetitive performance of events that took place in the landscape and the social and material associations they bore.

The Toumba building is a long, apsidal structure on an east-west orientation, with verandas on the north and south sides and a porch on the east. Fill from the destruction of the building dates to the Middle Protogeometric period, or

5. For the Euboean "discovery," see Boardman 1957, 1959, 1980, 1990; Popham 1983, 1994; Lemos 1998, 2002. For repudiations of Euboean preeminence, see Papadopoulos 1997, 2011.

6. Archaeological investigations at Lefkandi have occurred in several phases. The site was included in the survey of Euboea conducted by the British School at Athens in the 1950s and 1960s (Sackett et al. 1966, 60–61, with earlier references), and excavations at Xeropolis began in 1964 (Popham and Sackett 1968). Beginning in 1968 and running throughout the 1970s, excavations took place at five cemeteries west of Xeropolis. The results of these excavations were published in *Lefkandi I* (Popham, Sackett, and Themelis 1980). The Toumba building was discovered in 1980, when it was illegally bulldozed by a farmer intending to use the land for a new outbuilding, and excavations resumed at this location and at the Toumba cemetery, immediately to the east. The Toumba building is published in two installments as *Lefkandi II* (Catling and Lemos 1990; Popham, Calligas, and Sackett 1993). The Toumba cemetery is the subject of *Lefkandi III*, though only the plates have been published since the excavation in the 1980s (Popham and Lemos 1996; for preliminary observations, see Lemos and Mitchell 2011). Excavations at Xeropolis resumed in 2003, under the direction of Lemos; annual fieldwork summaries have appeared in *Archaeological Reports* (see, e.g., Lemos 2010a; 2012, 22–24).
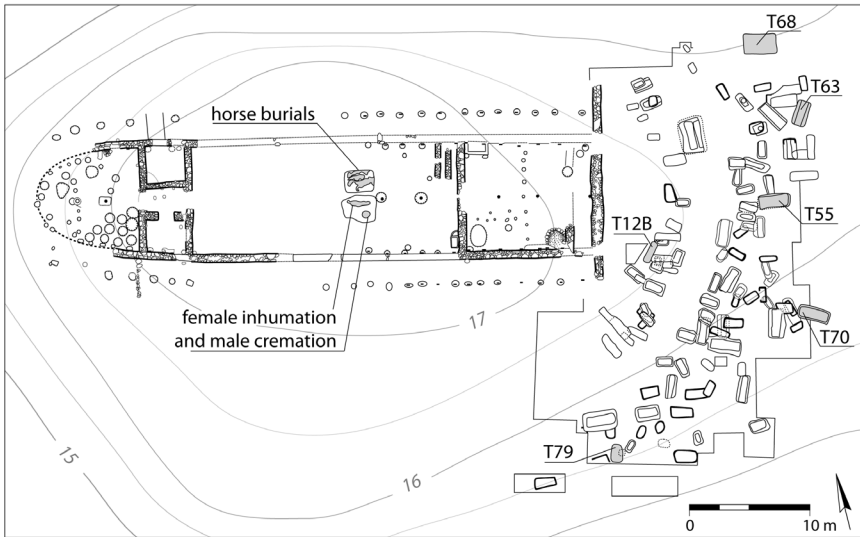
FIGURE 6. Toumba building and cemetery at Lefkandi (illustration by Denitsa Nenova, after Popham, Calligas, and Sackett 1993, plate 5; Popham and Lemos 1996, plate 3).

1000–950 BCE, and all evidence suggests that it was built in the same period, then quickly and deliberately destroyed and turned into a monumental mound that would have dominated the surrounding landscape (Catling and Lemos 1990, 92; Popham 1993, 98).[7] At about 50 by 14 meters, the building is monumental in scale, with an area over twice that of any contemporary building; indeed, no building of comparable size is known in the Greek world for the next 300 years (Mazarakis Ainian 1997, 48–49). Following the construction of the building, turning the site into a mound was itself a large-scale undertaking, and the excavators estimate that between 500 and 2,000 person-days of labor went into its construction (Coulton 1993, 55–56). Whatever the intention and agency behind the creation of this monument, it signals the mobilization of a large amount of human and material resources. The ultimate function of the building—as essentially a funerary marker—further highlights its association with particular individuals. Large-scale

7. The exact sequence of events for the construction of the Toumba building, the burials, and the mound remains contested. It is known that everything happened fairly close together (nearly all ceramics are MPG), but the archaeological record cannot reveal for certain whether the building was made as a rulers' dwelling and then demolished to turn it into a tomb, or whether it was built specifically to be a tomb (Popham 1993, 97; Antonaccio 1995, 236–41; Mazarakis Ainian 1997, 54–57; Morris 2000, 221). Moreover, its resemblance to early temple forms (which do not appear until the eighth century) has also led to discussions of the possibility of a religious function, though the rulers' dwelling/funerary architecture interpretation is by far the most common and probably best (see also de Waele 1998; Pakkanen and Pakkanen 2000).

building projects in the Postpalatial Bronze Age, while present, were almost exclusively community-oriented, such as the settlement walls or other structures of more ambiguous function (e.g., at Kynos, Lefkandi, and Mitrou).

Despite its size, the Toumba building still had much in common with other structures of this period. It is comparable to "rulers' dwellings" or large houses at Emborio on Chios and Nichoria in Messenia (Mazarakis Ainian 1997, tables III and X), both in its apsidal form and internal features. A further parallel exists at Thermon, where the apsidal building, Megaron A, which was originally built in Mycenaean times, seems to have been standing and still in use for burials in the Early Iron Age (Mazarakis Ainian 1997, 44–45; Morris 2000, 222–28), which was when Megaron B was built (Papapostolou 2011). While these parallels exist, the short use-life and function of the Toumba building—seemingly built to be destroyed and turned into a funerary mound—make it one of a kind.

In the center of the Toumba building, two human burials and four horse burials were found below the floor (see figure 6). The human burials are of a cremated male, often referred to as the "Hero of Lefkandi" (Popham, Touloupa, and Sackett 1982; Morris 2000, 195; Antonaccio 2002), and of an inhumed female, who has sometimes been viewed as a suttee (Popham 1993, 21) but has more recently been thought of as a "princess" (Stampolidis and Giannopoulou 2012). Through these burials and their associated grave goods, as well as those in the adjacent Toumba cemetery, certain networking practices, whereby elite groups at Lefkandi engaged with both past and present material remains in an effort to construct power relationships and social inequalities, become apparent.

The "hero" of the male cremation burial was likely between 30 and 45 years old at the time of his death. The cremated remains were placed inside a large bronze amphora, most likely of Cypriot origin, dating to the thirteenth or twelfth century BCE, though vessels of this type have also been found in eleventh-century contexts on Cyprus (Catling 1993, 86–87). The bronze was thus at least 50 years old at the time of deposition, and more likely between 100 and 300 years old. The amphora is decorated on its rim and handles, which contain, respectively, a single register of lions, bulls, and archers, and double registers of lions and bulls. This iconography is also most likely derived from Cyprus, although there are hybridizing elements that blend together Aegean, Cypriot, and Levantine styles (Catling 1993, 86–92). As an heirloom, this object may signal meaningful continuities from the Postpalatial Bronze Age in terms of overseas contacts. In the amphora were found a linen robe or shroud and cremated human remains, all of which were covered by a bronze bowl. An iron sword, a razor, a whetstone, and a spearhead were found around the amphora (Popham, Touloupa, and Sackett 1982; Antonaccio 2002).

The female inhumation was found in the same shaft as the cremation, immediately to the north. She was laid out with arms and feet crossed, and she was adorned with grave goods at least as significant as those found with the male. These include an electrum ring, bronze and iron pins, a gold brassiere consisting of

two gold discs over the breasts, and a lunate piece of gold between them (Popham, Touloupa, and Sackett 1982, 171–73; Popham 1993, 20). There was also a necklace of gold beads, faience, crystal, and a central gold pendant that has been identified as an Old Babylonian gorget, which would mean that the artifact was between 600 and 1,000 years old at the time of the burial (Popham 1994, 15; Morris 2000, 219; Lemos 2010b, 58). An ivory-handled iron knife was found next to her right shoulder; this led to the speculation that this person had been a human sacrifice (Popham 1993, 21). With no other evidence for such a practice, though, this speculation seems largely unfounded.

Turning to the context of these burials, we see that there are further meaningful markers. The first involves the presence of four horse burials in a shaft dug at the same time as the one for the human burials, but immediately to the north. These were almost certainly sacrifices that were part of the funerary event that took place at the site. There are many examples of horse burials associated with elite funerary remains from the Mycenaean period, some of which come from elsewhere along the Euboean Gulf—for example, from the Mycenaean tholos tomb at Marathon (Marinatos 1972, 190; Cavanagh and Mee 1998, 115). Horse burials were also common on Cyprus, with which Lefkandi was in demonstrable contact (Carstens 2005). The burials at Lefkandi also bear similarities to later ones, which recall Homeric practices, at Salamis, on Cyprus (*Iliad* 23.163–257; Blackwell 2010, 144–45).[8] While the horse burials at Lefkandi are unique in the Protogeometric period, horse sacrifices (like many Homeric features) had important antecedents in Mycenaean times, which could very well have been referenced deliberately. Regardless of these foreign and cross-temporal associations, the status that horses afforded in early Greece is well known, and horseback riding was an aristocratic practice in Greece and the wider eastern Mediterranean as early as the thirteenth century BCE (Kelekna 2009, 175–80; Kelder 2012). The sacrifice of four of these animals underscores social inequalities at Lefkandi, as well as the wider spatial and temporal distribution of such practices.

An enormous ceramic krater was placed over the burial shaft in the Toumba building (Catling and Lemos 1990, 25–26). This practice, too, has important Mycenaean roots and also anticipates later funerary ritual, since burial events were important occasions for feasting, drinking, offering libations, and sacrifice. Like other aspects of material culture at Toumba, this krater was monumental in scale; at 80 centimeters in height and 88 centimeters in rim diameter, it would not be surpassed in size until the Dipylon krater (from Athens) in the eighth century BCE. In addition to its exceptional size, the Toumba krater also invites visual

8. Homeric practices recalled in Cypriot burials include horse sacrifice, placing honey and oil in amphorae beside the dead, human sacrifice(?), cremation and pyres, putting out the funeral pyre with wine (asserted from unburned vessels found above the urn used for cremation), wrapping cremated remains and placing them in a container, construction of a funerary mound, coating furniture in ivory and silver (Blackwell 2010, 145, table 1).

associations with the east through the use of certain motifs—most notably the centrally displayed tree of life (Morris 2000, 228).

All these elements point to a funerary event on a grand scale. Clearly the persons buried in the Toumba building were important, and the people responsible for their burial sought to link themselves to these persons through a monumental building project, the deposition of prestige goods, and funerary practices involving feasting and drinking that were performed at the location of the burial. In addition to the evidence of the monumental krater placed above the burial, most of the vessels that can be associated with the use of the building (rather than the fill used to create the tumulus mound) have applications in feasting and funerary practices (Catling and Lemos 1990, 4).

The material associations with Toumba as a gathering place of collective memory survived long after the original burial event. References to the burials in the Toumba building can be seen in several of the 83 tombs and 34 pyres that were excavated in the Toumba cemetery, by far the wealthiest of the six known burial grounds at Lefkandi (see figure 6).[9] Among the most explicit references to the burials within the building are the horse burials contained in Tomb 68. Other such explicit references involve urn cremations and weapons burials in Tomb 79; Near Eastern heirlooms in Tomb 12B; an engraved, Near Eastern bronze bowl from Tomb 70 (probably from Cyprus); a double burial with an urn cremation and inhumation in Tomb 55; gold discs and necklace in Tomb 63; and several other burials containing weapons (Popham, Calligas, and Sackett 1989; Popham 1995; Popham and Lemos 1996). While warrior burials are not exclusive to the Toumba cemetery, their placement suggests that these and other tombs were deliberate references, rather than simply coincidental. Tomb 79 is also significant for its links to eastern Mediterranean trading systems, leading to the characterization of its inhabitant as "a Euboean warrior-trader" (Popham and Lemos 1995). This tomb contained 16 balance weights and fragments that have nearly identical parallels in Late Bronze Age Cyprus and the Levant, which highlights the importance of tying the deceased to long-distance interactions and their continuity over time (Kroll 2008). The associations between grave goods and sociopolitical status are complex, however. It is not sufficient to point to distance and quantity alone as markers of status. The context and particularity of objects must be examined as well. In the case of Lefkandi, several of the exotica found in Early Iron Age tombs are best described as trinkets, talismans, or amulets, which Arrington (2016) has argued represent multiple eschatological belief systems within a mixed community of locals and foreigners, tracing some particularities to Cypro-Phoenician traditions; Murray (2018a) has made a similar argument concerning the LH IIIC cemetery at Perati. Various modes of signification were therefore present in the Toumba

9. The list of parallels presented here is incomplete and must await the full publication of *Lefkandi III*; the plates of this volume were published in the 1990s and provided the basis for this analysis (Popham and Lemos 1996).

cemetery, setting the individuals buried there apart from the wider community in terms of both status and connections to the wider world.

The Toumba complex at Lefkandi attests to a degree of social inequality unprecedented in the Postpalatial Bronze Age or Early Iron Age. The practices exhibited here have more in common with the grave circles, tholoi, and wealthy chamber tombs of the Mycenaean period than with the warrior burials of the Postpalatial period, though there are of course some shared elements here as well. These commonalities are significant, as they indicate that the Lefkandi phenomenon is an exaggeration of preexisting practices rather than something completely new. The growth of Lefkandi—as a settlement and in its significance in wider networks in the Euboean Gulf, the Aegean, and the eastern Mediterranean—began in the Postpalatial Bronze Age, and then reached an apex in the Prehistoric Iron Age, far beyond any other site in the Aegean world, with the possible exception of Athens. The persons buried in the Toumba building, along with those who strove to make ancestral links with them, represent access to and consumption of foreign exotica and items of particular material value or technological novelty. The links Lefkandi forged with the east clearly served to make the central Euboean Gulf an important hub of activity throughout the Early Iron Age.

Continuity and Change in Early Iron Age Burial Customs.   Early Iron Age burial customs in the rest of central Greece were markedly varied, both within and between the landscapes under study in this book. Some sites demonstrate direct continuity from the Postpalatial Bronze Age, including deliberate engagements with the cemeteries of previous generations as well as evidence for transformation over time. In most areas, single burials became more common while multiple burials in conspicuous funerary structures are less so, unlike the examples discussed above (Papadopoulou 2017, 301; see also Mee and Cavanagh 1984, 58–62; Lemos 2002, 185–86; Dickinson 2006, 183–95). Medeon and Paralimni both exhibit direct spatial continuity, though with more "disorganized" burial forms (Papadopoulou 2017, 301–2). At the same time, Elateia saw continuous use of a Mycenaean chamber tomb cemetery, including the tombs themselves, until the ninth century BCE. The same happens in the Spercheios valley, where Mycenaean chamber tomb cemeteries at Vikiorema and Kompotades are also reused for multiple burials in the Early Iron Age, while other sites, such as Lamia and Stylida, change to single burial customs.

Southern Thessaly provides the clearest example of Early Iron Age regionalism, most notably through apparent population growth and its unique burial record, which features small Protogeometric-Geometric tholos tombs. As discussed in the previous chapters, there is not a clear "collapse" scenario in Thessaly in the Postpalatial Bronze Age, although there is a decline in overall site numbers (see figure 2). In the Prehistoric Iron Age, site numbers return nearly to the same level as in the time of the palaces—a pattern of growth also seen in Malis, though not quite on the same scale.

In Thessaly, the mortuary record shows that the use of certain burial grounds is maintained from LH IIIB to the Geometric period. Unlike elsewhere, tholos tomb construction expanded and even became widespread, and Mycenaean tholoi continued to be reused (Georganas 2011, 627). Over 60 examples of Protogeometric tholoi are known from some 35 sites (Georganas 2011, 628; Karouzou 2017, 364, fig. 2; see also Arachoviti 1994, 135, fig. 13; Georganas 2000). Most of these date to the Late Protogeometric period (950–900 BCE), though specific dating is often impossible. These tholoi are usually small (two to four meters in diameter) and built on or near topographic features of some prominence. They were family tombs; some were in use for well over a century; and finds—including ceramic and metal vases, rings, fibulae, and beads, as well as swords, knives, arrowheads in iron and bronze, and whetstones—are quite similar to those found in elite burials elsewhere in Greece (Georganas 2000, 51–52).

Thessalian tholos tombs demonstrate direct continuity from the Mycenaean period, and not only as loose imitations. Several small tholoi, along with the larger examples from Georgiko, Kapakli (at Volos), Kazanaki, and Dimini, were constructed in the Mycenaean period. The Mycenaean construction of smaller tholos tombs, measuring between 1.9 and 5.2 meters in diameter, was a clear precedent for the PG tholoi that followed. This tradition seems to have been strongest around the Pagasetic Gulf, perhaps initially as a result of its ties with other parts of the Mycenaean world via the Euboean Gulf. But once this tradition reached Thessaly (probably in LH IIIA, after the heyday of tholos construction in the Peloponnese), it stuck, and in the Protogeometric period it expanded.

The mortuary landscape across central Greece signals that there was not a clear, universal break with the Mycenaean world. Funerary practices changed in many places, to be sure, but there was strong continuity in tradition scattered throughout the landscape, especially in Phokis, Malis, and Thessaly. A sort of western/northern group of communities with distinct funerary traditions might be seen in contrast to developments at Athens and Lefkandi, though we must also keep in mind that these latter two sites are exceptional and hardly representative of broader patterns. Boeotia, northern and southern Euboea, and elsewhere in Attica (at least until the Middle Geometric) seem to follow the intimations of decline so often made for this period.

Social Organization and Village Politics

What, then, can we say about the overall picture of social organization in Early Iron Age central Greece? The central question, as in other periods, is how to articulate the political organization and dynamics of nonstate entities, especially when they vary widely over space and time. This question is indeed relevant for all of Aegean prehistory, from the Neolithic period onward, where we are dealing with societies that are clearly complex but are not at a level of social or territorial integration where they would be classified as states. These are community-based social entities, which exhibit hierarchies, inequalities, and political economy, but have

little central organization, interregional uniformity, or clear definitions of territory (with the exception of the short-lived Mycenaean palaces). The vast majority of individuals living in Greece from the Neolithic period to the Prehistoric Iron Age lived in what are probably best described as small-scale village societies, made of communities comprised of several households and kin groups.

One significant transformation that happened in the Prehistoric Iron Age was that differences between certain communities became more pronounced than they had been in the Postpalatial Bronze Age. Precocious centers like Lefkandi and Athens grew much larger than their contemporaries and exhibited much greater influence, both locally and regionally. At this point, these were the two largest sites in central Greece by an order of magnitude, enough to classify them above the level of other sites that might nevertheless be deemed "major" hubs during this period (see map 19). Thebes, too, seems to have been a major center, though later building and the history of excavation and publication make it difficult to define the nature of the Early Iron Age settlement there in clear terms. One difference between the better understood settlements of Lefkandi and Athens is that Lefkandi was clearly *the* principal draw in central Greece in terms of external imports in the Protogeometric period, while Athens does not demonstrate a similar level of attraction until later (Kourou 2015). Such centralized consumption is not unlike patterns in the Late Bronze Age. A similar pattern can be seen at Athens with respect to settlement size. While Athens, and perhaps Lefkandi, might have been on the cusp of developing into urban centers during this period, the rest of Early Iron Age central Greece remains a world of villages.

Most of the sites in the Early Iron Age settlement pattern are small-scale, comprised of fragmentary evidence that demonstrates the presence of a community but little else. Architecture, where it has been documented, is generally simpler than in the Mycenaean period. There is nothing in the Early Iron Age world that can be considered state-like or palatial, although the large houses sometimes called ruler's dwellings likely served political purposes at the level of the community (Mazarakis Ainian 1997). Papadopoulou (2017, 299–301) has argued that most of central Greece witnessed a shift from "complex" to "loose" patterns of organization during this period, though some communities—namely, Delphi, Medeon, and Elateia—retained elements of complex organization. To this list of sites we should add, of course, those discussed above, as well as Atalanti and certain other sites where social differentiation has been revealed by wealthy burials (such as Ellopia and Stylida). While these pockets of complexity are distributed in various regions throughout central Greece—and rather evenly—this probably should not be taken as evidence for regional centralization. It rather represents incidental concentrations of activities, people, and things in a regional landscape that did not experience political integration beyond the local level.

Signs of leadership are occasionally manifest in the central structures or elite burials mentioned above, though these are relatively few. Part of the problem, of course, is the preponderance of funerary over settlement evidence, which is why

archaeologists have traditionally looked to the mortuary record for evidence of sociopolitical hierarchy and organization (Morris 1987; Whitley 1991). Others have looked to the textual records from other periods. One question is whether or not we can detect Hesiod's *basileis* or Linear B's *qa-si-re-u* in Early Iron Age society. If we can distinguish comparable roles in the Bronze Age and in the eighth centuries, it is a reasonable assumption that they existed in this period as well (see, e.g., Finley 1954, 142; Crielaard 2011b). The archaeological record suggests that elite individuals certainly existed, but it yields little definitive information about rulership or political organization. In well-documented cases, like Lefkandi from an archaeological perspective and Argos from later texts, there seem to have been oscillations in the nature of leadership in early Greece, sometimes more focused on an individual, at other times involving a number competing factions (Kõiv 2016). Without projecting forward or backward and while considering the variety in the settlement pattern across different regions, it seems risky to put much faith in evidence from Linear B or early Greek poetry. Looser notions of hetararchy and fluidity of power, within and between the communities of Early Iron Age Greece, seem much more likely.

As in other periods treated in this book, variation is the rule in the Prehistoric Iron Age. Major sites and centers vary considerably among themselves, but there is likely more baseline similarity among smaller groups with less complex organization. A typical Early Iron Age community probably consisted of several family units living in structures built of ephemeral materials (wood posts, waddle and daub, mudbrick). Political organization was loosely integrated and probably had multiple bases of power, including status within a family unit or kin group and personal prestige as perceived by the community as a whole—based on wealth, family, biography, and access to interpersonal and intercommunity networks. Papadopoulou (2017, 306) notes that patterns in burial offering might support status being tied to personal prestige rather than to family status, with the exception being a few groups with higher status or authority. Overall, then, things look quite similar to the Postpalatial Bronze Age, though we do see a pattern of certain sites, already powerful in the Postpalatial Bronze Age, consolidating and expanding in terms of political complexity, social inequality, and regional interest. The majority of people, however, were probably living in more loosely integrated, agropastoral communities.

TECHNOLOGY TRANSFER
AND PRODUCTION NETWORKS

Major innovations in metal and ceramic production technologies occurred in the Prehistoric Iron Age. These are, for metals, the inception and development of iron technology and, for ceramics, the spread of the Protogeometric style, which came with innovations in firing, decoration, and vessel forms. Processes from

raw material procurement to the distribution of finished products (the full *chaîne opératoire*) must be accounted for if we hope to understand production systems as coherent social practices distributed across various spatial scales (Mauss 1935; Leroi-Gourhan 1964; Lemonnier 1993; Dobres 2000). A network approach emphasizes the links and nodes that make up production processes as wholes rather than privileging (1) particular points in those processes, (2) the finished products that are often better studied from the perspective of consumption (as seen in the burial contexts above), and (3) studies of imports and exports (on which see further below). Such an approach has the particular value of articulating interactions across local, regional, and (at times) interregional scales, even in the absence of direct evidence for particular connections. As in the Postpalatial Bronze Age, we should imagine that the mobility of traveling craftspeople played a key role in technological dispersals within and beyond central Greece.

The Coming of the Age of Iron

The transition from bronze to iron as the predominant utilitarian metal brought sweeping changes to Mediterranean life. New networks of production formed to accommodate this new material—often on a more regional basis than in the Bronze Age—on account of the wider obtainability of iron ores. This accessibility led Childe (1942, 183) to refer to iron as the material that "democratized" warfare, industry, and, perhaps most importantly, agriculture (with the advent of the iron ploughshare, which replaced wooden antecedents). Childe's ideas in this regard were largely prefigured in the writings of Engels ([1884] 1972, 220), who called iron "the last and most important of all the raw materials that played a historically revolutionary role." The specifics of the bronze-iron transition in Greece (and the wider Mediterranean) became a topic of major interest in the 1970s and 1980s (Waldbaum 1978; Wertime and Muhly 1980). Periodic reviews of new evidence have appeared since then (Sherratt 1994; Waldbaum 1999), although there is no up-to-date, comprehensive overview of the technology and archaeology of early iron metallurgy in the Mediterranean.[10]

The technology of early iron production is fundamentally different from other metallurgical practices (see, e.g., Rehder 2000). First, iron smelting (the conversion from ore to metal) is more complicated than copper smelting. Copper is smelted in a liquid state and melts at about 1083 degrees Celsius. The melting point of iron is 1530 degrees Celsius, but it is extracted from ores in a solid state at around 1100 to 1250 degrees. After the initial smelt, the product (the bloom) must be worked to squeeze out excess slag, hence the name "wrought iron." There are three processes, or heat treatments, used in the hardening of iron: carburization, quenching, and tempering. Carburization is essentially a diffusion process by which iron becomes

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10. Snodgrass (1980b) wrote the closest thing to such a synthesis over forty years ago. Summaries for Greece specifically can be found in Snodgrass ([1971] 2000, 213–95) and Dickinson (2006, 146–50).

alloyed with carbon. Unfortunately, problems of preservation, especially on the edges of objects, make hardening processes difficult to detect in materials dating to the Early Iron Age. The data we do have, however, suggest that deliberate heat treatment and carburization developed as hardening techniques as early as the twelfth century BCE on Cyprus and are important markers for the spread of specialized ironworking to Greece (Tholander 1971; Snodgrass 1980).

The technological complexity of this process demonstrates that transfer must have happened in the context of relatively intense interaction between craftspeople from different societies. So, by what mechanisms did early iron technology develop and come to the Aegean specifically? Snodgrass ([1971] 2000, 237–39) attributed the adoption of iron technology in Greece to a bronze shortage, which was caused by political upheaval throughout the eastern Mediterranean and the disruption of the tin trade, which made the more widely available iron a natural commodity to turn to. This is the so-called *circulation model*. And yet, there have been several aspects of the material record uncovered since the 1970s that do not suggest a bronze shortage; in fact, they show most notably that bronze remains quite common in burials of the Early Iron Age (Waldbaum 1999, 29; Papadopoulos 2014, 181–86; Murray 2017, 174–77, 261–63, with further references on the debate). Bronze votives are also present in early sanctuaries across the Greek world, and even more so than iron, which was also a prestige good before it was a practical one (Voyatzis 1990).

The overwhelming majority of excavated iron objects come from mortuary contexts. This fact led Morris (1989) to suggest a *deposition model* for the increase in iron objects at this time. He argued that the increase in iron in mortuary contexts had to do with its status as a prestige rather than a utilitarian material. While it is no doubt true that many of the buried objects, such as weapons, had symbolic significance, Snodgrass (1989, 29) makes the important point that the evidence for carburization and heat treatment reinforces the argument that they were also made for utilitarian purposes—as, for example, in Cyprus—from a very early date. A middle ground incorporating elements of both deposition and circulation models, where both prestige and the economics of raw material availability can contribute to our understanding of early iron metallurgy, therefore seems most appropriate (Papadopoulos 2014, 182–83). A historical perspective is also useful. While there may not have been a particular shortage of bronze, the wider availability of iron only became relevant after its consumption and the technological knowledge of its production became more widespread, which in Greece took place over the course of the eleventh to the eighth centuries BCE.

Technological knowledge of iron production seems to have been carried to the Aegean in the eleventh century, not long after its innovation on Cyprus, which had long been a point of interface for Aegean traders and craft producers. Rather than there having been a tin shortage that caused a breakdown in the bronze trade, it seems that technological innovation spread through networks that were
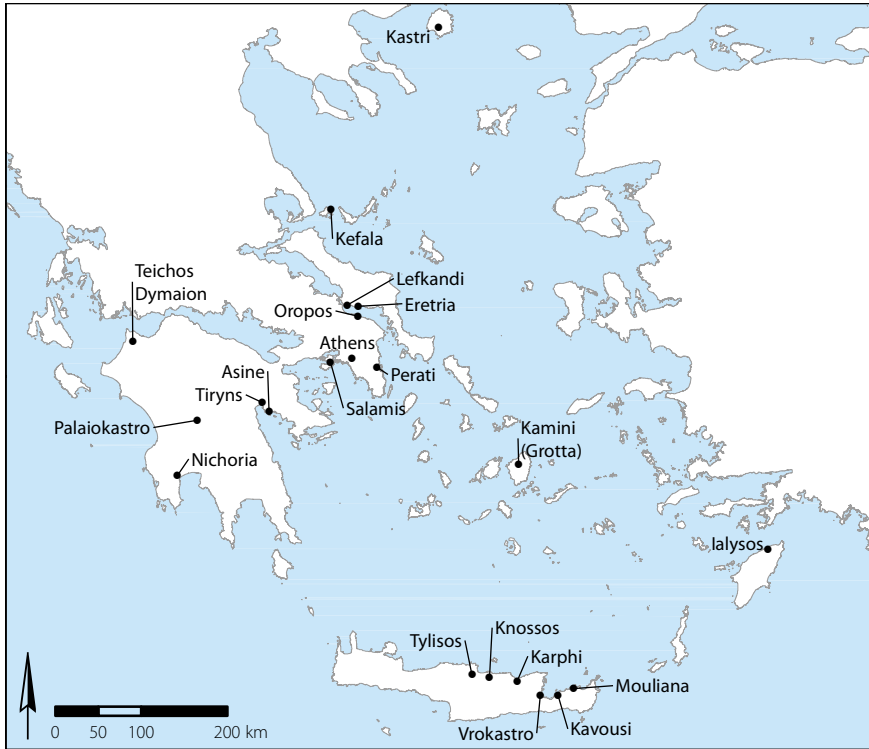
MAP 20. Location of early iron finds in Greece (after Dickinson 2006, 148, with additions).

reconstituted following the collapse of the Mycenaean palatial systems. This is probably better considered a context than a cause for the spread of early iron-working. Technological knowledge was transmitted first through long-distance interaction, probably at places like Lefkandi, and later dispersed through regional networks, which resulted in the rather rapid spread of iron metallurgy in Greece. It is noteworthy that the earliest evidence of iron metallurgy in Greece comes from sites that are demonstrably well connected to the eastern Mediterranean in earlier periods (map 20).

Greece is rich in iron ores. Morris (1992, 131–32) argued that rich metal deposits, including the iron ores of Laconia, Euboea, Thasos, and western Crete, drew Phoenician interest and stimulated economic activity on a pan-Mediterranean scale. Greece also boasts types of ores that are not present on Cyprus.[11] Nevertheless, there is a fundamental difference between the occurrence of metal deposits

11. Muhly (2008, 71) writes that Cyprus has no iron resources, but he surely means no iron ores (even so, a complete absence seems unlikely). Iron resources are actually relatively abundant on Cyprus in the form of gossans, ochres, and umbers.

and their present workability, and the question of whether or not they would have been recognizable and workable in antiquity (Muhly 2008, 67–68). While we should not leap to conclusions in interpreting the significance of ore deposits, they should not be dismissed so easily as having been of poor quality and therefore insignificant for Early Iron Age smelters. A fundamental problem, of course, is that evidence for ancient mining is extremely difficult to detect in areas that have seen modern exploitation, which is true of many mineral resources in Greece.

Euboea in particular has extensive sources of iron ore (Bakhuizen 1976, 1977). These are easily visible in the landscape on account of their purple color and metalliferous appearance, and they could have been identified as soon as people knew what to look for. A limited study of the composition of the lateritic ores of central Euboea suggests that they contained enough iron to make them workable in antiquity, and that they possessed a nickel content that may have had hardening effects (map 21; see also Photos and Tylecote 1988).[12] While these ores are useable, they are not comparable to the high-quality ores that could be found elsewhere in the Mediterranean. The hematite ores of Elba, for example, have much higher iron contents, which vary but can be as high as 70 percent (Tanelli et al. 2001).

Despite the seemingly important role of iron resources and metallurgy in Greece, very few archaeometallurgical analyses of early iron objects have been carried out. Jones (1980) studied material from Lefkandi, though these were only compositional analyses.[13] Other studies have been undertaken for Nichoria and Geometric material has been analyzed at Asine, though by the time that these studies are concerned with, ironworking was better established (Rapp et al. 1978; Waldbaum 1999; Backe-Forsberg and Risberg 2002). The earliest remains of actual iron smelting in the Aegean come from Oropos, where slags and other evidence for metalworking have been excavated in contexts dated to the eighth and seventh centuries BCE (prior to this, finished objects are our only evidence of iron in Greece) (Doonan and Mazarakis Ainian 2007). Microstructural analysis has revealed that the slags were a product of iron smithing and at times contained inclusions of copper, suggesting side-by-side metalworking industries, which also occurred at Eretria (Doonan and Mazarakis Ainian 2007, 364–65; Verdan 2007). Oropos is therefore important for the social implications of metalworking as well as for its location on the Euboean Gulf and the interactions across it. Slags have also been found at the Early Iron Age site of Kefala on Skiathos (Mazarakis Ainian 2012b, 61). Other sites with iron production remains that have been metallurgically studied date to later periods (see, e.g., Kostoglou 2008). The amount of material studied from a technological perspective for all periods is quite low, and for the Early Iron Age it is almost nonexistent.

12. With a permit from the Institute for Geology and Mineral Exploration (IGME), I sampled ore sources throughout central Euboea to determine their chemical composition as a way of assessing usability and general quality.

13. Additional material from Lefkandi has been studied by other specialists, though this work has not yet been published.
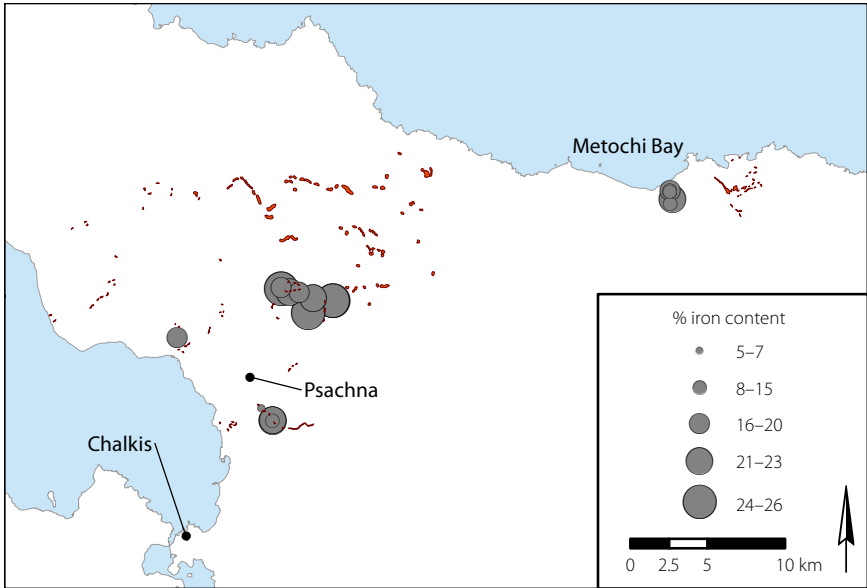
MAP 21. Map of iron ore sources in central Euboea (in red), with results of portable XRF analysis showing percent iron content of collected samples (top); photo of an iron ore source near Psachna (bottom).

In light of the distribution and the character of early iron remains in Greece, three points should be emphasized: (1) parts of Greece were quite rich in iron ores; (2) iron ore is like any other rock without the technical knowledge to smelt and smith it; and (3) even if there were locally available ores, this does not mean that

higher-quality raw materials would not be sought elsewhere. This third point has been suggested as at least a partial impetus for the intensification of Greek colonial activity in the Early Iron Age (Bakhuizen 1976; Markoe 1992; Ridgway 1992; Tsetskhladze 1995). It is perhaps more likely that Greeks and Phoenicians initially looked west and north for more precious metals and located new sources of iron in the course of this wider search. Regardless of later endeavors in metals industries, the Prehistoric Iron Age witnessed the emergence of this new technology in the Greek world out of a milieu initially involving Greeks, Cypriots, and Phoenicians: it seems to have arrived first in the regions surrounding the Euboean Gulf, from which it then spread rather rapidly, not unlike other technologies of the Early Iron Age, like writing (see further in chapter 6).

Ceramic Production

The Protogeometric style of painted pottery is another hallmark of the earliest Iron Age in Greece. Its origins in Athens, its adoption in Euboea, and its rapid spread through much of the Aegean have led to discussions of various stylistic koinai, especially associated with Attica and Euboea (Murray 1975; Lemos 2002; Seroglou 2009; Donnellan 2017). Studies of Protogeometric and Geometric pottery have traditionally focused on typologies and sequences based on vessel form and decoration, generally following approaches applied to later black- and red-figure Greek vases of the Classical period (Whitley 2002, 23–25). In Protogeometric and Geometric contexts, these approaches attempt to identify and analyze distinctive styles, and to associate them with certain regions or individual painters. This is perhaps more difficult when dealing with designs that are abstract rather than figural. Nonetheless, variation in vessel form and decoration, as well as in fabric, can be used to discern regional traditions and in some cases to identify individual painters or potters. Scientific provenance studies have been relatively rarer for this period than for other prehistoric epochs, though they have recently shed considerable new light on Early Iron Age pottery from Euboea (Kerschner and Lemos 2014).

Discussion here focuses mainly on the Attic Protogeometric and its related styles, which are influential throughout the Euboean Gulf and much of the southern Aegean. At the same time, there are several areas of the Greek world where the ceramic styles of this period developed independently or have no relation to what is elsewhere considered Protogeometric. These areas include the western and northwestern Peloponnese, inland Thessaly, and parts of Macedonia (Snodgrass [1971] 2000, 84–89; Papadopoulos 2004).

The Protogeometric style is marked by the first use of the multiple brush, used to create the mechanically drawn concentric circles or semicircles that are characteristic of this period (Papadopoulos, Vedder, and Schreiber 1998). General elements of decoration involve dark paint applied to a lighter surface, whereon carefully placed bands emphasize the shape of the pot. In the Geometric period

we see the further development of these tendencies. Geometric decoration became more complex and new diagnostic features, such as the meander pattern, began to appear. We also see the gradual introduction and elaboration of figural scenes, which often depict funerary narratives on large vessels deposited in burial contexts or used as grave markers.

Detailed stylistic analysis can be found in regional overviews of Protogeometric and Geometric pottery, which have also traced the circulation of ceramics in wider Aegean and Mediterranean contexts (see, e.g., Coldstream [1977] 2003, [1968] 2008; Lemos 2002). The areas that appear to have been most influential in this period are Athens and Euboea, the former recognized as a stylistic innovator and driver, the latter seen as the developer of a widespread koine and trading network (Lemos 2002). Some places within this sphere of influence have even been characterized as Euboean "outposts"—namely, Skyros, Oropos, and possibly Kefala on Skiathos (Lemos and Hatcher 1986; Charalambidou 2017, 93–94). On the contrary, other recent work has questioned whether koine is an appropriate term to describe stylistic similarities in pottery found in a northwest to southeast arc from Torone to Naxos. Donnellan (2017) has examined patterns of consumption in funerary contexts to suggest that there was in fact a significant amount of stylistic variation in assemblages from Torone, Marmariani, Volos, Lefkandi, and Skyros—all frequently mentioned as participants in such a koine. She suggests rather that consumption patterns were selective and variable across regions, and that the shared elements exhibited are perhaps better understood in theoretical frameworks of networks or interaction spheres (Donnellan 2017, 61). A network perspective has the advantage of highlighting such shared attributes while also signaling the specificity of their application. In the context of funerary practice, the consumption of particular goods with connotations of connectivity, either imported from or influenced by neighboring regions, shows the social importance of maintaining regional connections, especially for the aspiring elites discussed above.

While more nuanced and decentralized interpretations of consumption are welcome, recent provenience studies have confirmed the pivotal role of central Euboea. Thanks to an extensive program of sampling and neutron activation analysis, we now know that clay deposits at Phylla and Vasiliko were used extensively in a widely exported clay and pottery production industry from the Bronze Age to the present (Mommsen 2014). The clay source is located in the Lelantine Plain only about two kilometers north of Lefkandi, and it has been used in recent times for brick and tile production (map 22). Actual production remains in the form of kilns and workshops are scarce, although there is a relatively sparse record of landscape survey in central Euboea (see chapter 2).

Mommsen (2014) has identified a distinct grouping of chemical signatures shared among pottery coming from central Euboea and other nearby sites: the "Euripos Group." This signature is seen in both pottery found in Euboea and in
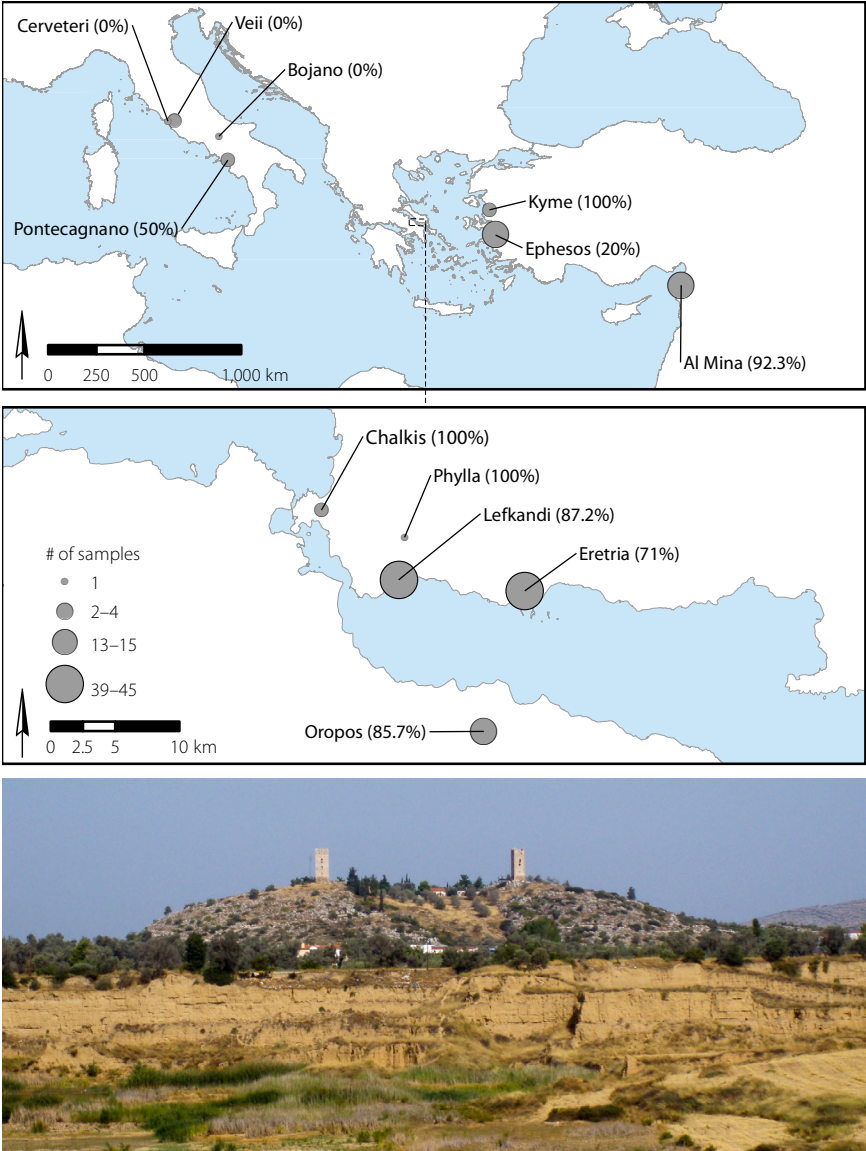
MAP 22. Clay source at Phylla (bottom) and combined map of sites analyzed by Mommsen (2014), showing the number of samples analyzed from each site and percentage of samples that match the "Euripos Group."

pottery in the Euboean style found elsewhere. Moreover, experimental analysis of the clay source itself has shown that all vessels in the Euripos Group were made of clay mined there. Of the 101 Late Bronze Age to Early Iron Age samples

tested from the Euripos area, 76 belong to this group (Mommsen 2014, 17) (see map 22). Several previously analyzed vessels also belong to this group and source, including Late Helladic vessels from Thebes, Grey Minyan wares found on Aegina, three sherds from Troy, and pottery from various other sites along the Euboean Gulf. This group was also represented by 12 of 13 pendant semicircle skyphoi (a form associated particularly with Euboea) from Al Mina and certain sites in Italy (Pontecagnano) and western Anatolia (Ephesos, Kyme) (Mommsen 2014, 17–18). Based on these data, it seems that the Phylla clay source was one of the most important in central Greece, certainly for the Postpalatial Bronze Age and the Prehistoric Iron Age, and quite possibly for earlier periods as well. Resource procurement could have been closely observed by Lefkandi during this period, which also raises questions pertaining to its status in other periods. What was happening with this source in the Palatial Bronze Age? Is Lefkandi the production center for the bulk of the pottery in the LH IIIC koine discussed in chapter 4? What is the long-term history of this source, including the medieval and modern periods, when Chalkis was known as an important center for ceramic production?

Production remains for pottery, like those for metals, are relatively rare. Nevertheless, kiln fragments were excavated in the fill layers of the Toumba building at Lefkandi, along with a large amount of ceramics (Sackett 1993, 75–76). This lends further support to the idea that Lefkandi was a major manufacturing and distributive center in the Protogeometric period (and probably earlier). Further remains of ceramic production from the Early Iron Age have been excavated at Athens and Torone (Papadopoulos 1989, 2003, 2005). Analysis of production waste from pit and well deposits from the Early Iron Age potters' field in the Athenian Agora is unique in revealing aspects of experimentation in production. Here, test pieces were used to assess the behavior of paints and clays under firing (Papadopoulos 2003, 7–9). These were typically made from failed vessels (prefiring) and were removed with a hook or rod at different times in the firing session through a hole in the kiln. From these and other remains Papadopoulos (2003, 210) was able to reconstruct a three-stage firing process that included (1) firing under oxidizing conditions, (2) firing under reducing conditions, and (3) reoxidization with a subsequent gradual decrease in kiln temperature. This three-stage process had been available, more or less, since the beginnings of the Late Bronze Age, although it was applied to much different effect to create a black gloss in the Protogeometric period. Stylistic innovations, using the pivoted multiple brush to create concentric circles, spread quickly as well, first appearing in the Aegean and eventually also appearing on Cypriot and Phoenician wares (Eiteljorg 1980; Papadopoulos, Vedder, and Schreiber 1998). This evidence, which we observe first in Athens and then see spreading elsewhere, indicates the complexity of the technological process, which could have been transferred across regions only by people with technological knowledge on the move, often over significant distances.

MOBILITY, MIGRATION,
AND MEDITERRANEAN (PRE)HISTORY

While new technologies played interstitial roles in social interactions within and between Early Iron Age groups, these practices are difficult to trace in detail. Other aspects of long-distance interaction, such as trade in commodities and large-scale mobility, can be equally challenging. One might compare the complexity and the Mediterranean scope of such processes to the "international spirit" Renfrew (1972, 34) described for the Early Bronze Age. The Early Iron Age, however, is further complicated by a mythohistorical record that records migration events of Dorians, Ionians, and Aeolians, all of which have little or no material signature but which nevertheless factored significantly into later Greek practices of identity formation. They must therefore be examined alongside real proxies for long-distance interaction and mobility both within the Aegean and in the wider Mediterranean, which, during this period, becomes a coherent entity for the very first time. That is to say, this is the first time in the history of the Mediterranean basin that some of its inhabitants—namely Tyrian "Phoenicians" reaching Gibraltar—had a panoptic, itinerant conception of the sea as a whole in addition to connections between particular places that were sustained over generations. Even if archaeological and historical sources seem not to agree on what happened or how, one thing is clear: the more we learn about this period, the more we see people on the move, not only in Greece but also all around it (see, e.g., Molloy 2016; Kotsonas and Mokrišová 2020).

Sherratt and Sherratt (1993, 361–63) list a number of major developments that differentiate the first millennium from the second in the eastern Mediterranean: mercantile city-states replaced palace-states; iron production undercut centralized economies that flourished previously by controlling bronze making; new forms of political power came from economic shifts; tensions grew between agrarian and commercial interests; trading stations arose outside the "urban" world of the eastern Mediterranean; notions of political boundaries changed in response to the growth of sea trade; the spread of literacy highlighted ethnic differences; slave trade grew in volume and extent; demand for precious metals as economic currency increased. All these factors had major impacts on the Mediterranean interaction zone, of which the regions of central Greece were a part. Two specific cases deserve further explication: the Phoenician westward expansion and Euboean activities in the eastern Mediterranean. The Euboean Gulf served variously as a destination, a conduit, and a base for both. We should also consider why other parts of Greece seem to have been left out of this picture. I focus first on the tangible evidence of growing overseas interests between Phoenicians and Greeks, especially Euboeans. I then turn to a problematic literary record that may provide some vague context—but no clear answers—concerning larger developments in Greece and the Mediterranean world.

Phoenicians Sailing West

Sailors from Levantine city-states (collectively termed "Phoenicians") were the most active drivers in the nascent process of Mediterraneanization, though they are often overlooked in discussions of later "Greek" colonization.[14] An expansion westward began in the late second millennium BCE; the most important developments occurred in the early first millennium, initially preceding Greek expansions, and then took place later in both cooperation and competition. Metals were almost certainly a prime mover. Nearly all areas of early Phoenician interest (in Iberia, Sardinia, Etruria, the northern Aegean, and Cyprus) are rich in metals. The Phoenicians appear to have pursued a strategy of using key places to plug into developing networks that were already heavily involved in metal production and trade (map 23). So, while the Phoenician involvement in these regions had important antecedents in the Bronze Age, and while the Phoenicians made use of preexisting trade routes (Niemeyer 2006, 148), their ability to access local networks brought the pursuit of these commodities to a new level. This quest for metals—and the quest's arrival in Iberia—are recorded in the Greenland ice cores in the form of a noticeable spike in atmospheric lead pollution, which is linked to silver production dated to around 800 BCE (McConnell et al. 2018, 5729, fig. 3). This marker was preceded by the establishment of permanent settlements and mining operations in the western Mediterranean.

While metals may be considered a prime mover in a broad sense, there are, of course, other relevant factors, not least in the Phoenician homeland. The city-states of the Levantine coast arose in the wake of the troubled palace-states at the end of the Bronze Age (Ugarit, Alalakh, Hatti, and Egypt). Byblos and Sidon seem to emerge as the top contenders in the middle of the eleventh century, since they appear in the *Tale of Wenamun*, where Byblos is described as the primary exporter of cedar and Sidon is another destination of interest.[15] The city of Tyre seems to experience a meteoric rise in the early tenth century, initially as a dependent and then as a partner of Sidon, over which it would eventually assert hegemonic status (Aubet 2001, 31).

While Phoenician interest in the wider Mediterranean predates Tyrian preeminence, the floruit of westward expansion began in the tenth century. This outgrowth was possibly related to the establishment of Tyrian control over the large

14. "Phoenicians" (Φοίνικες) is a general term applied by various Greek authors to the peoples living along the northern Levantine coast, although this is not what they called themselves. Their name for themselves seems to have been closer to the biblical Canaanites, although their identity seems much more tied to particular city-states than any broader regional notion of ethnicity. See Aubet (2001, 6–13) for a discussion of terminology and etymology, and Papadopoulos (1997, 2011) for the Phoenicians' underrepresentation in discussions of Greek colonization. For more recent bibliography on the Phoenicians, see Bondì et al. 2009; Pappa 2013; Elayi 2018; Quinn 2018; López-Ruiz and Doak 2019.

15. But see Sass (2002) for other possible dates for the *Tale of Wenamun* (1075–925 BCE).
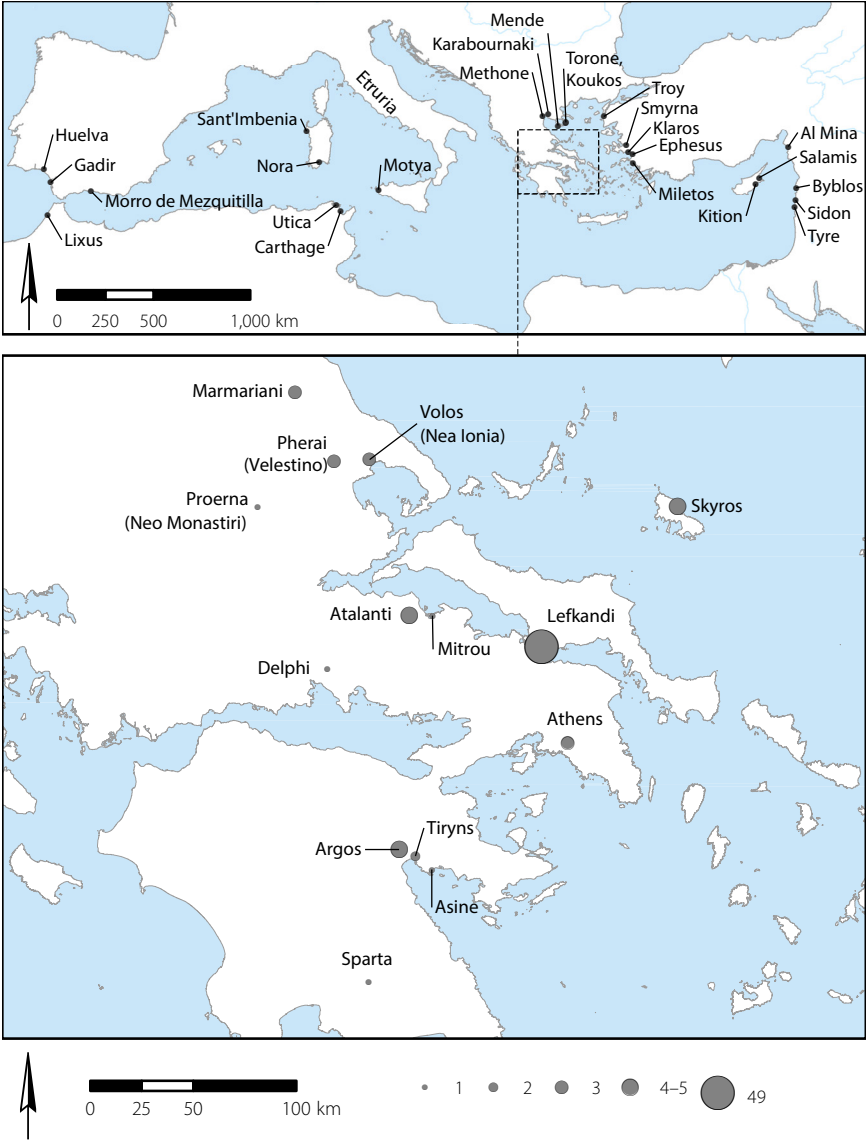
MAP 23. Sites mentioned in the text with evidence for long-distance interaction (top) and PG–MG imports in the Aegean (bottom) (import data from Murray 2013, 434–35; 2017, 102–11, table 2.5).

amounts of land that once belonged to other cities, such as Sidon. The presence of a nearby—but distributed—hinterland perhaps would have led the state to turn its attention elsewhere—in all likelihood to places that had long gripped the attention of enterprising merchants. Moreover, a general feature of increasing social complexity—one also seen in the Mycenaean Palatial period—seems to be an

increased demand for commodities, whether in the form of raw materials (in this case metals) or foreign exotica. In the Tyrian case, where the economy seems to have been more commercially oriented than palace-driven, metals were pursued as the most flexible and valuable commodities available until their later (seventh century BCE) adaptation as coinage. From the tenth century BCE onward, we can see a Tyrian commercial expansion into the western Mediterranean, as well as at Kition and Salamis on Cyprus and in the Aegean—most notably at the precocious communities of Lefkandi and Athens (Negbi 1992). The so-called warrior-trader from Tomb 79 of the Toumba cemetery at Lefkandi was a contemporary of this expansion and may himself have been a Phoenician trader (Popham and Lemos 1995; Papadopoulos 2009, 115).

The earliest Phoenician settlements in the western Mediterranean are dated by historical sources to the twelfth century BCE (Aubet 2001, 161–63). These are Gadir, Lixus, and Utica (see map 23). However, the earliest archaeological evidence is not until much later. Until recently, there was no solid archaeological evidence for Phoenicians in the western Mediterranean before the eighth century (van Dommelen 1998, 70; 2005, 118). Recent work at Huelva, however, has revealed Phoenician material in southwestern Iberia dating to the ninth century; this has been interpreted as indicating "precolonial" activities (González de Canales, Serrano, and Llompart 2006; Nijboer and van der Plicht 2006). It is very likely that Phoenician traders were involved in other locations in the west as well; if so, this involvement would predate the foundations of permanent settlements at places like Morro de Mezquitilla, which may also go back to the ninth century BCE (Arnold and Marzoli 2009). In the central Mediterranean, the earliest dates come from Carthage—which has settlement remains from the late ninth and early eighth centuries—where there is also Euboean material, especially from the tophet (Docter et al. 2008).

In Sardinia, the Nora Stone has long been cited as the earliest Phoenician inscription on the island. It is dated to the ninth century BCE based on letter forms, though its lack of context makes this date somewhat problematic (van Dommelen 1998, 72). More interesting and reliable are the finds from Sant'Imbenia, which has Phoenician and Greek pottery, including a Euboean skyphos, from the late ninth century (Oggiano 2000). On the other hand, sites from which we would expect a similar date, such as Motya in Sicily, do not have clear evidence of Phoenician occupation until the end of the eighth century BCE. This Phoenician expansion coincides with the onset of the MG period in Greece, and it is noteworthy that when Greek material appears in the western Mediterranean contexts mentioned above, it seems to have arrived alongside Phoenician goods, and most likely through Phoenician agency (Kourou 2017). Only later did Greek sailors take a more active role in such enterprises.

So what drove these early Levantine interests in the west? In the ninth century BCE, trading expeditions clearly intensified, probably because of changing relations within the Levant. During the reign of the Assyrian king, Assurnasirpal

II (883–859 BCE), tribute payments were recorded as coming from Phoenician city-states; this may have fueled Tyrian interests in metals even further (Niemeyer 2000, 103; Aubet 2001, 88–95). Such demands for tribute became even more frequent in the eighth and seventh centuries, by which time permanent settlements had been established throughout the Mediterranean.

The Phoenician expansion westward was a complex process (Aubet 2001; van Dommelen 2005; Bondì et al. 2009). Long before permanent settlements were founded, Phoenician traders had inserted themselves in local and regional networks throughout the Mediterranean world, from Huelva and Gadir, west of Gibraltar, to Mesopotamia. This is also apparent in the fact that nearly all the sites with early archaeological evidence for Phoenician occupation are very much "mixed" in terms of the origins of material culture present. In the west, Huelva contains not only Phoenician but also Nuragic material from Sardinia. On Sardinia, Sant'Imbenia represents an indigenous Nuragic context, into which Phoenician and Greek material was introduced. There is a similar mingling of cultural elements in the earliest levels at Carthage.

The northern Aegean, too, was of interest from an early date, probably based on the rich metal sources of the Chalkidike and Pangaion. Later (eighth century) evidence in the form of Phoenician pottery comes from Methone (Kotsonas 2012, 238; Papadopoulos 2016b, 1246, fig. 7; Kasseri 2012), as well as Karabournaki (Tiverios 2004, 297), and Torone (Fletcher 2008). The delta of the Haliakmon River seems to have been a crucial node for multiple goods, since this part of Pieria is notably rich in both metals and timber, and the river itself is navigable for a great distance inland. Indeed, the more we learn about Methone, an Eretrian colony, the more significant it appears to have been in a network involving Euboea, Athens, various parts of western Anatolia, and Phoenicia (see most recently Morris et al. 2020).

Central Greece, the Northern Aegean, and the Eastern Mediterranean

From the evidence of imports, settlements in central Greece, especially those on or around the Euboean Gulf, seem to have been the largest draws of long-distance interaction in the Early Iron Age—most notably at Lefkandi and later Eretria (see map 23). Kourou (2015) describes four stages in the development of contacts between the Greek world and the eastern Mediterranean in the Early Iron Age:

1. There is a Protogeometric prelude in which a few objects may indicate limited or incidental contact, either with Cyprus or the Levant, limited to the EPG period.
2. There follows a first stage of regular contacts, characterized by LPG–EG imports at Lefkandi (Kourou also includes the MPG Toumba building burials in this phase). Atalanti, Marmariani, Volos (Nea Ionia), Velestino (Pherai), and Skyros have modest numbers of finds, while several other sites in central Greece have some as well (Neo Monastiri/Proerna, Mitrou, Delphi). Finds elsewhere are

limited to Tiryns, Argos, and Asine in the Argolid. There is a notable paucity of material from Athens and Attica. Crete, on the other hand, has a wealth of imports throughout these periods.

3. A second stage of regular contacts is characterized by proto-orientalizing metalwork in Attica. There is still an abundance of finds from Lefkandi, but this is now complemented by an influx of metalwork, especially filigree, granulation, and cloisonné in Athens and on the east coast of Attica. This phase begins in the Prehistoric Iron Age that is the subject of this chapter and blends into the Protohistoric Iron Age that follows.

4. A third stage of regular contacts is distinguished by the wealth of LG offerings (*athyrmata*) in sanctuaries (see chapter 6).

Several sites in the northern Aegean indicate connections with central Greece (especially Euboea) from a very early date (Tiverios 2008, 1–17). Views of Euboean prominence in colonization movements, both in the northern Aegean and in the central Mediterranean, have been challenged by Papadopoulos (1996b, 1997, 2011), who urges caution and points out the literary bias of arguments concerning the historicity of early Euboean activity abroad. Nevertheless, this should not be taken as a complete rejection of Euboeans playing a significant role outside their island, and increasing evidence, not least the archaeometric studies of Euboean ceramics discussed above, allows a more accurate reconstruction of the context and character of Euboean activities (Tiverios 2008, 12; Mommsen 2014; Charalambidou 2017).

In Euboea itself, Lefkandi is clearly the dominant site in long-distance trade networks. It was not simply the biggest consumer of foreign goods in the Aegean; it was clearly a *destination* for trade networks involving Cyprus, the Levant, and the northern Aegean. This trade network involved (at least in part) Euboean ceramics and metals from the Chalkidike. Certain individuals from Lefkandi seem to have been central to this trade, since nearly all tombs with Near Eastern imports also contained northern Aegean grave goods (Lemos 2001, 217; Leone 2015, 229; Charalambidou 2017, 87).

Numerous sites in the Chalkidike have significant quantities of Euboean pottery present. At Torone, an Early Iron Age cemetery has been excavated, revealing high numbers of imported Attic and Euboean PG pottery, in addition to apparently local imitations (Papadopoulos 2005a). Mende and Koukos extend this picture, as do recent finds at Methone, though the most significant of these are Late Geometric, corresponding with its establishment as a colony of Eretria (Kotsonas 2015; Morris et al. 2020). In this earlier period, the overall picture of people from Attica and Euboea in the north is not suggestive of colonization, but it certainly is of trade. In the earlier Prehistoric Iron Age, Attic ceramics appear in greater numbers, although eventually these give way to Euboean Subprotogeometric types, reflecting an intensification of Euboean (at this stage Lefkandiot) interests (Papadopoulos 2005a, 579–80).

The breadth of Euboean interests and activities is also reflected in the wide (if not dense) dispersal of Euboean pottery in Cypriot and Levantine contexts (Kourou 2017, 27–30; Murray 2017, 194–208, map 4.1). This has led to discussions of "precolonization" (Popham 1994), particularly involving pottery from Al Mina (Boardman 1959, 1990; Popham 1983). While several Al Mina vessels are now demonstrably of Euboean origin (Mommsen 2014), the quantification of pottery from Al Mina and other Levantine sites where Greek pottery has been found does not suggest that there was a permanent Greek population in these areas (Papadopoulos 1997, 196, table 1). It does, however, reflect participation in a network of exchange that links the production centers of the pottery to its find spot. At the very least, Al Mina was a port of trade and hub of interaction between the Aegean and the Levant (Luke 2003).

The larger distribution of Protogeometric pottery outside the central Greek heartland is somewhat problematic. Most recently, Murray (2017, 191, table 4.4) has quantified the distribution of Greek pottery in the central and eastern Mediterranean: there is a peak in LH IIIB (248 sites, ca. 9600 sherds), followed by a decline in LH IIIC (108 sites, ca. 3700 sherds), a very sharp drop in the Protogeometric period (9 sites, ca. 100 sherds), and some recovery in the Geometric period (96 sites, ca. 2350 sherds). These numbers do not, however, account for the large amount of Protogeometric pottery from western Anatolia, where some 25 additional sites (at least) have pottery from this date (Lemos 2002, 210–12; Vaessen 2015). Particularly significant were Miletos, Smyrna, Ephesos, and Klaros in Ionia, as well as Troy and several sites in the east Aegean islands. Lemos (2007) argued that quantities were quite small, though in years since it has been revealed that PG pottery dominates the total assemblage of several of these sites, in contrast to lower numbers in the Mycenaean period (Vaessen 2014). It is now clear that a Protogeometric nadir was not as extreme as previously thought. An actual quantification of Protogeometric pottery in western Anatolia would make the picture of Early Iron Age trade and production networks in the eastern Mediterranean look quite different.

At some point, at the beginning of the Middle Geometric period, Athens entered the scene, as evidenced in the growing presence of imports in wealthy tombs. There was also a change in emphasis from Cypriot imports to Phoenician. In PG and EG times, the rare imports found in Attic tombs were usually Cypriot bronze bowls (Blegen 1952; Korou 2015, 220). Cypriot artifacts diminished in the MG period, superseded by various Near Eastern objects such as faience and glass scarabs and beads—for example, in the tomb of the Rich Athenian Lady, in Kerameikos 42, and in Dipylon 13; Marathon, Anavysos, and Merenda also appear to have been major centers with ties to the Levant but not to Cyprus (Korou 2015, 220).

The overall pattern seems to be that Lefkandi was the dominant hub for long-distance trade in the Aegean during the earliest period of the Iron Age, probably building on its prosperity in the Postpalatial Bronze Age and its status as

a booming center for pottery production. Its geographic centrality was also significant, connected as it was throughout the Euboean Gulf—the best route connecting the northern and southern Aegean. These historical and geographical circumstances made it a destination for traders from both the eastern Mediterranean and the north. At the same time, Athens was a flourishing settlement, active also in wider maritime spheres, initially through its innovations in ceramic production. Eventually it attracted the attention of Phoenician traders, perhaps through its assumption of control over the metal resources of the Lavriotiki, signaling another articulation of local, regional, and interregional modes of interaction. The onset of the MG period may represent the first time Athens itself assumes control of this part of eastern Attica, which may also be reflected in the metallurgical innovations that take place in Athens at this time, when new, Near Eastern techniques arrived in goldwork, along with metalworkers interested in the silver resources of Lavrio.

Literary Phantoms or Historical Migrations?

Migration plays a major role in both ancient and modern narratives concerning early Greece. Herodotus, Thucydides, and other ancient authors put certain migratory events—the Dorian, Aeolian, and Ionian migrations in modern parlance—between the "age of heroes" and the beginning of history with the first Olympiad (776 BCE) (Vanschoonwinkel 2006; Osborne 2009, 47–51). These population movements were used by ancient authors to explain the distribution of the three principal dialect groups of the ancient Greek language—Dorian, Ionic, and Aeolic—and are therefore usually in the domain of historians or historical linguists. Such themes are only rarely treated by archaeologists, not least because there is little archaeological evidence to support claims of large-scale migration, leading some to describe these and other migratory groups as "literary phantoms" (Papadopoulos 1997; see also Hall 1997; Mac Sweeney 2017; Kotsonas and Mokrišová 2020). Nonetheless, mobility and migration clearly form a part of Greek historical consciousness, which may also have extended back into pre- and protohistory.

   The concept of the Dorian invasion can be traced to Herodotus (1.56–58), who discusses a group of people "coming down" into the Peloponnese as responsible for the Dorian dialect. Historians of the nineteenth and early twentieth century called this the Dorian invasion, suggesting that linguistic change followed a violent influx of new people who were also responsible for the collapse of Mycenaean civilization (e.g., Müller 1824; Casson 1921). One of the problems with this argument is that it is based on a text that does not actually describe what modern historians have often debated. Herodotus talks about the movement of people and dialects, but he says nothing about population replacement, violent conflict, or sociopolitical change. He discusses the "coming down of the Heraklidai" (the descendants of Herakles), which has been interpreted to mean the migration from the north of new groups of people who brought with them a new type of material culture. As Hall argues

(1997, 4–16), this narrative tells us more about nineteenth-century conceptions of culture change, positivist history, and ethnicity than about historical realities. Archaeological evidence demonstrates traceable continuities throughout the Late Bronze Age to Early Iron Age transition. No changes in material culture suggest population replacement. While some migratory events may well have taken place in what was certainly a highly mobile world, they can hardly be characterized as a singular or uniform process. On the linguistic side of things, the fact that Linear B records Mycenaean Greek clearly demonstrates continuity from the Late Bronze Age to the Early Iron Age. There cannot, therefore, have been a Dorian "coming of the Greeks." It is noteworthy also that most arguments concerning a Dorian invasion were developed before the decipherment of Linear B in 1952.

The tradition of the Aeolian migration holds that colonists traveled from Thessaly, Boeotia, Achaia, or some combination of these to the northeast Aegean, where they established settlements beginning some 60 years after the Trojan War and four generations earlier than the Ionian migration (see Rose 2008, who refers especially to Strabo 9.2, 13.1–3). This is linked, as are the other migration narratives, to the regions in which one of the three main dialects appears in later times—in this case, a northeast Aegean homeland. Bronze Age interactions between Aegean and Anatolian populations are evident both archaeologically, in the form of trade goods, and in Hittite diplomatic texts describing the kingdom of Arzawa (of which Troy/Wilusa was a vassal). By the tenth century, a trading network was in place involving Troy, Thessaly, and Lokris, which is linked to Troy in the tradition of the Lokrian maidens, women who were sent annually from Lokris to Troy as compensation for Ajax's rape of Kassandra. Rose (2008, 420–21) argues that there would have been centuries of interaction in the northeast Aegean, with a changing cultural blend of Luwian, Phrygian, Lydian, and Greek, but there is no one region or agent responsible for a single migration event.

The Ionian migration has been the subject of much recent scholarship, not least owing to an interest in explaining the origins of some of the more significant cities of the ancient Greek world in western Anatolia (Papadopoulos 2005a, 580–88; Vaessen 2015; Mac Sweeney 2016, 2017). The traditional narrative is that the Dorians destroyed the Mycenaean palaces; then refugees fled to Attica and, after some 60 years, to Ionia in an event called the Ionian migration:

> The most powerful victims of war or faction from the rest of Hellas took refuge with the Athenians as a safe retreat; and at an early period, becoming naturalized, swelled the already large population of the city to such a height that Attica became at last too small to hold them, and they had to send out colonies to Ionia. (Thucydides 1.2.6; see also Cook 1962).

Historians and archaeologists have tried to place this event chronologically in either the Postpalatial Bronze Age or the Prehistoric Iron Age, based mostly on literary sources. This chronology also depends on how one wants to date a mythohistorical Trojan War. Archaeological evidence for such a population movement is

controversial, however. Protogeometric ceramics are found at some 25 sites scattered throughout western Anatolia. This led Lemos (2007) to suggest an earlier migration in the wake of the Mycenaean palatial destructions. We now know that the evidence for Greek pottery in Anatolia is in fact much more abundant in the PG period (Vaessen 2014). In turn, the archaeological evidence of Attica is more widespread in the Postpalatial Bronze Age, although this is followed by apparent growth and expansion at Athens in the Prehistoric Iron Age. Essentially, either period might be shoehorned into this migration hypothesis based on the archaeological evidence, which signals more activity in western Anatolia and less in Attica during the PG period than in the previous LH IIIC. Others (e.g., Crielaard 2009) reject the idea of an Ionian migration altogether, pointing to evidence of Mycenaean involvement in the region as early as the Palatial period (see also Vaessen 2015, 814–18). A recent assessment of archaeological and literary evidence as a whole concludes (1) that there is evidence for long-term Greek involvement in the region from Mycenaean times onward (perhaps even earlier, given the clear Minoan material at Miletos); (2) that the Early Iron Age evidence is not consistent with a sudden influx of people; and (3) that migration stories in antiquity came out of political needs to construct a shared identity, linked to Ionian and Athenian political interests (Mac Sweeney 2017, 412–15).

One feature of all these migration events is an emphasis on ancestry and founder heroes as a means to establish shared identity within a regional landscape. Several scholars have demonstrated that these are tied to the deliberate construction of ethnic identities that can be linked to various political agendas, and that they developed over time (Hall 1997; Malkin 1998, 2011; Rose 2008; Mac Sweeney 2017). The archaeological evidence in each case does not support a sudden influx or replacement of population, but it does support a large amount of long-distance interaction, probably involving multiple ethnic groups, that was sustained over a long period of time. While there is no specific "kernel" in any of these migration narratives, they probably do reflect general attitudes toward the mobility of people, both at the times in which the narratives were developing and in earlier periods as well. Linguistic evidence suggests that by the appearance of the alphabet in the eighth century, these dialect zones were already developed, and may even be traceable to the Mycenaean period (Janko 2018). However this may be, any distinct dialects that appear in the textual-historical record must have evolved in the linguistically murky waters of the preceding centuries, with roots in long-standing interaction processes going back at least to the Mycenaean period.

CONCLUSIONS: PATTERN AND VARIATION, DEVELOPMENT VERSUS DECLINE

Variability appears to be the rule during the Early Iron Age. This obtains in regional settlement patterns, in the mortuary record, in social organization, and in terms of relationships with the wider world. While I have highlighted the main centers

of dynamic activity, it must be kept in mind that places like Athens and Lefkandi represent exceptional—though certainly influential—cases, not unlike the palaces of the Palatial Bronze Age. The vast majority of sites dating to the Protogeometric and earlier Geometric periods lack evidence for overseas contact, long-distance exchange, or high levels of social complexity.

Such circumstances need not be seen in a negative light. Indeed, "lower" levels of social complexity generally signal lower levels of inequality, which is probably better viewed as a positive aspect of society. At the same time, certain technologies and innovations were nonetheless on the move, along with other cultural elements that are not detectable in the archaeological record—a developing oral tradition, religious practices dispersed across regional scales, and cycles of agricultural production and consumption. This, indeed, resembles the Iron Age of Hesiod, in which most people lived as subsistence farmers and shepherds: "mere bellies" (*Theogony*, 26). While Hesiod had a negative view of his own time, this must be seen as literary nostalgia rather than as some guide to work back from in terms of social or archaeological history. In spite of the mostly local and small-scale operations of Early Iron Age society, there were certain people and groups—craftspeople, traders, pirates, innovators—who traveled far and frequently. We see traces of them in the pottery styles and metal technologies that they dispersed across central Greece and the wider Mediterranean. So, while there are some aspects of the archaeological record that can be characterized in terms of decline, there is much more to the story, especially elements that are traceable through technology and other ephemeral evidence for interconnection. These processes in the Early Iron Age are not unlike what Renfrew (1972) described for the Early Bronze Age in his *Emergence of Civilisation*. Just as the Early Bronze Age Cyclades were part of a much wider eastern Mediterranean interaction sphere, so too was central Greece part of a much wider set of social, technological, and material networks in the Early Iron Age.

In spite of its (now dated) "Dark Age" moniker in Greece, the Early Iron Age is in fact the first period in which the entire Mediterranean comes together, in the sense that certain groups (Phoenicians) are involved in interactions across its entire extent. This is not to say that there were sudden transformations of notions of identity across the entire basin, but this was the first time that some individuals plying its shores could have reasonably conceived of it as a geographical whole, one spanning the Levantine coast to the Strait of Gibraltar.

The Prehistoric Iron Age is one of the more challenging periods to deal with in this book. For one thing, it is the longest, lasting some 250 years (see table 1). For another, it is the most variable, both among the regions of central Greece and in the wider Mediterranean world. What is more, it is difficult to distinguish clear *societal* transitions from the previous Postpalatial Bronze Age, even though the *material-technological* distinctions are quite obvious.

The sum of the evidence reveals a richly varied landscape across the early Greek world. Central Greece is crucial as certain hubs emerge at Athens and Lefkandi, dialogues with the past evolve in Thessaly, Malis, and Phokis, and a reorganization of settlement takes place in Boeotia. The Euboean Gulf shows how a route-based conception of connective geography supersedes a proximal one when we consider the means by which connections were made within the Aegean between north and south. Phoenician, Euboean, and Athenian traders were involved in networks that spanned distances far beyond the Aegean interaction spheres that transmitted stylistic preferences and technological knowledge. As in other periods, access to these networks was restricted to certain members of society and used very deliberately in the creation of difference and to make and maintain social inequality on a local level. In this way, networks were consolidated conceptually, even as they were expanding geographically. These multiscalar dynamics ushered in significant social change in the village communities of central Greece, as some grew in size and complexity, while others became retracted, small-scale, and localized. Such developments laid the foundations for the even greater social changes that would follow in the eighth century and after, when the few hubs of Mediterranean interaction in central Greece would expand into much more intense and widespread networks that would characterize the rest of early Greek history.