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## Entanglements, elite prerogatives, migratory swallows, and the elusive transfer of technological know-how into the western Mediterranean, 1000–700 BC

Nijboer, Albertus

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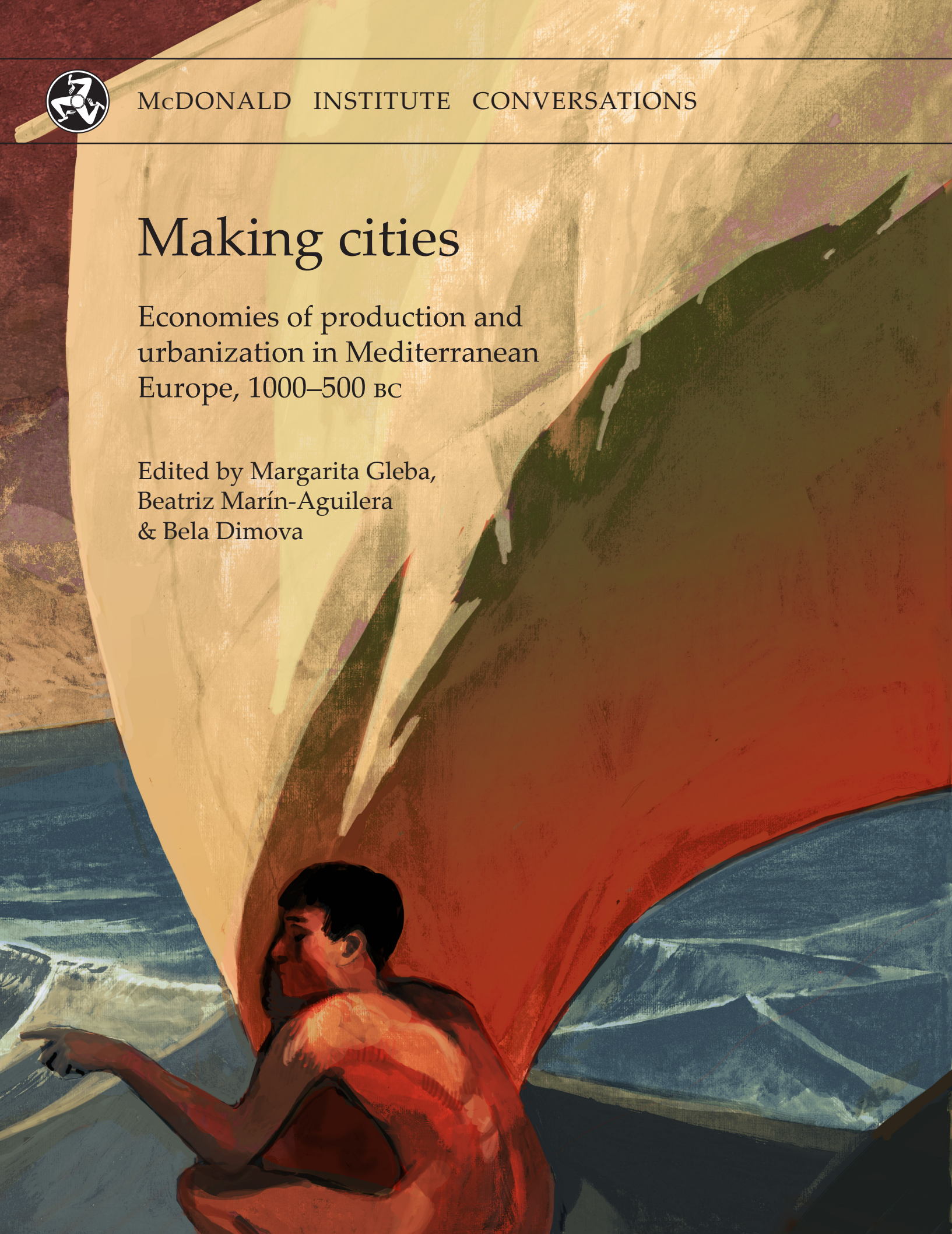


McDONALD INSTITUTE CONVERSATIONS

# Making cities

Economies of production and  
urbanization in Mediterranean  
Europe, 1000–500 BC

Edited by Margarita Gleba,  
Beatriz Marín-Aguilera  
& Bela Dimova



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## Economies of production and urbanization in Mediterranean Europe, 1000–500 BC

Edited by Margarita Gleba,  
Beatriz Marín-Aguilera & Bela Dimova

*with contributions from*

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## Chapter 21

# Entanglements and the elusive transfer of technological know-how, 1000–700 BC: elite prerogatives and migratory swallows in the western Mediterranean

Albert J. Nijboer

The fragmented, indigenous polities along the coasts of the Western Mediterranean, including western Italy, became progressively incorporated in a long-distance, overseas, exchange network that covered almost the whole Mediterranean from the tenth century BC onwards. Such communities could become dynamic recipients of goods and expertise that transformed some of their material culture in a decidedly hybrid blend as will be illustrated below. This period is often referred to as the Orientalizing phenomenon, which is accompanied by early city-state formation in some Mediterranean regions that were previously non-urban. Most new manufacturing techniques initially produced high value–low output commodities for which there was a significant need due to local social competition, the rate of which is essential for making cities. Some of the commodities in time gradually altered into low value–high output goods by increased demand, being produced in workshops that signify full centralization and eventually towns with thousands of inhabitants after 700/600 BC. Other skills introduced became hardly anchored in the western Mediterranean during the period 1000 to 700 BC partially due to the still non-urban social-economic environment, restricting demand and display. From a cross-cultural, comparative perspective, it appears that all urbanization is accompanied by some form of craft specialization that resulted in a number of commodities that became available for many: low value–high output goods produced in workshops by skilled craftspeople.

This paper is less about such urban workshops than the fundamental stage that precedes it, creating long-distance exchange networks both by land and by sea that contributed to centralization. To quote Trigger (2003, 342): ‘What stimulated increased economic interdependence and political integration in early civilizations seems to have been the trade and craft specialization encouraged by the politically

motivated demands of the upper classes for prestige goods and by expanding markets for better-quality mass-produced commodities as population densities increased’. While Trigger’s sentence is based on an assessment of seven early civilizations, all urban, he did not include the Mediterranean during the Iron Age. However, many of his constants, one of which is quoted above, do also apply to other civilizations and can be illustrated with the slow but definite opening of the entire Mediterranean by mainly the Phoenicians from the tenth century BC onwards. While doing so, they mirrored their homeland, which acted as a mental map, not just in the selection of geophysical locations for their staging posts in the western Mediterranean, such as promontories and small islands just in front of the coast (Aubet 2001, 16, 164; Thucydides 6.2.6), but also in their concept of commerce. To some extent, their advance into the western Mediterranean echoed the prerequisites of their existing Levantine trading network. In their homeland with its coastal city-states, long-distance, inland supply and demand for commodities depended on cooperative exchange relations with polities abroad: commodities from afar, food supplies, metals and luxury goods that subsequently became registered and stored in their warehouses. The Phoenician/Tyrian enclaves and warehouses established in the western Mediterranean mimic those in the Near East (Aubet 2012; Neville 2007, 22–3). In the report of Wenamon, one finds a vivid, literary account of the sophisticated conditions and infrastructure that prevailed in a major Phoenician town during the Early Iron Age, including archives, a palace, warehouses, regulations, temporary shelter and interstate arrangements concerning long-distance trade (cf. Egberts 1998; Baines 1999; Simpson 2003, 118–24; Wachsmann 2008).

The second part of Trigger’s quote above, citing ‘expanding markets for better-quality mass-produced commodities as population densities increased’ as

reflecting conditions for cities, is hardly examined here but is represented in quite a number of contributions in this volume such as the papers on Corinth (by Ioulia Tzonou) or on Zagora (by Lesley Beaumont). From c. 700/600 BC onwards, the formation of city-state systems in some coastal regions of the western Mediterranean with its associated, more institutional control over resources and relations of exchange, could lead to political and military confrontation between indigenous communities and seafaring settlers. In this respect one can detect a difference between the hegemonic arrangements of the Phoenicians in their homeland as well as overseas and the rising, more centralized, autarkic, city-states of ancient Greece in quest of agricultural land.

This paper mainly examines the essential period prior to the 'full-blown' urbanization, colonization or limited territorial appropriation of resources during the seventh and sixth centuries BC. It investigates roughly the tenth to seventh century BC in which some form of elite collaboration between indigenous and seafaring groups became established, creating a shared, basic prelude for the urban, classical culture of Greek city-states, of Rome with its Latin allies, of Etruscan city-states, and some cities of other peoples. It focuses on the jumbled transfer of luxuries and know-how, creating a long-distance network by land and by sea that supported centralization to sustain ongoing social ranking, another constant for urbanization in Trigger's seminal publication (2003); no established cities existed without enduring social stratigraphy.

### **Movement of peoples and goods**

In recent years, a number of publications and activities have engaged with the historical movement of peoples and the transfer of technological know-how as a factor supporting innovations in societies (cf. Kiriati & Knappett 2016; Broodbank 2016).<sup>1</sup> Most of these focused on Mycenaean or Classical Greece, the Mediterranean as a transmitting sea, or on other time frames than the period discussed in this paper. Nonetheless the overriding theme remains the same: the close relationship between long-distance and trans-cultural exchange of objects and technologies from an epistemological point of view, with issues such as 'mobility', 'community' and 'utility' (Gosselain 2016). One of the terms elaborated by Gosselain, 'connectivity', is crucial for the period examined. He describes it as 'a structural framework that combines nodes (villages, towns, markets, trading posts, ports), vectors (roads, valleys, rivers, maritime routes) and means of travelling (humans, animals, ships). Such structural frameworks only offer possibilities for the

circulation of people and cultural items' (Gosselain 2016, 194). It does not mean that such infrastructure was necessarily exploited systematically everywhere by an established upper class. Usually, the maritime routes are emphasized for the Iron Age but other nodes are as essential, which will be illustrated below. The interpretation of the archaeological data requires nonetheless the basic perception that 'knowledge circulation is less easily controlled than people circulation' (Gosselain 2016, 196).

In line with the enquiries in the publications mentioned above, the practices of reproduction<sup>2</sup> in some regions of the western Mediterranean, during the period 1000–700 BC, create a fine example of increasing 'connectivity'. Unfortunately, the theme is too sizeable for a paper and can only be illustrated with some examples of knowledge circulation, such as the introduction of the alphabet, monumental architecture and the advance in the use of the metal iron, hence Early Iron Age. This will not result in a one-dimensional account of mere copying or introduction, adoption and anchoring of the introduced knowledge. Based on the archaeological record of some regions in the western Mediterranean, there was just introduction and hardly any acceptance, while others were more open to change, a pathway that was often correlated with growing demand within communities and the sustainable rate of social stratification, centralization and ultimately urbanization.

A concept that I consider important for the period, is the migratory 'swallow craftsman/merchant' as an intermediate category for the dichotomy 'settled'/'itinerant'. This plain division in two categories, that dominated the colonization debate to some extent, is questioned, for example, by Aubet when she discusses naval routes and seafaring practices; in that time, a return trip from Tyre to Gadir would frequently last more than a year. In between, there were staging posts that often became customary, and the return journey was definitely not immediate. Time lapsed while waiting for favourable winds and currents (Aubet 2001, 166–91). The 'swallow craftsman/merchant' of this paper is a slight adaptation of one of the categories defined by Ramón (2011) in his typology of seasonal, migrant potters in northwestern Peru based on ethnographic and historical data. It is intriguing that all categories of migrant potters had to function within a given set of social-economic conditions that prevailed in the host community, as many of the early Phoenicians in the West appear to have done, which would explain somewhat the elusive response and varying impact following their arrival. Ramón's classification includes a category that he describes as 'settled swallows', because eventually the groups of

potters relocate permanently after initially circulating between home and host communities for a period of time, specializing in the making of particular vessels in pottery workshops. However, it is questionable if Phoenician ‘swallow craftsmen/merchants’ originally relocated permanently abroad. The tenth-century BC story in the Scriptures of the Tarshish fleet that was sent every three years by King Hiram I of Tyre to the far West (Lipiński 2004, 217–65) corresponds with the archaeological record of swallows and an object-based phase with wide distribution patterns and rather limited entanglement. Nonetheless, by the ninth century BC, some of the swallow craftsmen/merchants did become settled swallows, akin to Ramón’s classification, as recorded for Huelva and Utica (see epilogue). However, I suggest that the majority were still transitory before returning homewards, like swallows that sense the right moment to fly southwards passing on their way the Straits of Gibraltar (cf. Sparks *et al.* 2002). In addition, the word ‘swallow’ conveys a notion of transience and airiness that I consider characteristic for the period examined: difficult to catch and frame but definitely not settled, autarkic and closed. Therefore, I have adapted for this paper Ramón’s potters as ‘settled swallows’ into ‘swallow craftsman/merchant’ to underline that they were not just travelling, but stayed ashore some time, often within a local community, a condition that was advantageous for both parties involved. Cooperation seems to have been the norm, as in Ramón’s study, otherwise mutual entanglement would be impossible. ‘Swallows’ often come with an associated infrastructure that was temporary or they used the one already at hand. Therefore, their presence is difficult to trace, except for the output. The distribution of specific artefacts indicates that goods were exchanged and that it was originally object oriented, involving artefacts such as iron knives, ivory combs, fibulas of Huelva type, or rotating spits found occasionally from the Iberian Peninsula to the Levant or *vice versa* (cf. Mielke & Torres Ortiz 2012; Nijboer 2008b; 2013; 2018). These artefacts come with radiocarbon dates that can definitely be assigned to the tenth century BC, if not before.

Both cases, Ramón’s migrant potters in the Andes and the Phoenician ‘swallow craftsman/merchant’, are accompanied by cyclical migration and by their role as agents of stylistic and technological transformation. Elsewhere I have labelled the historical phase prior to colonization, ‘the prospecting phase’, and the ‘swallow craftsman/merchant’ appears to be a component of it, retaining the technical and cultural expertise of their home country. Archaeology indicates that the Phoenicians of the tenth and ninth century BC in the western Mediterranean frequently worked within a given local

social-economic environment, often temporarily, that could result in blended material cultures. This kind of interface is crucial when examining cultural interaction. Or, as Ramón stresses, the ‘swallows’ reappeared as ‘included stranger’ from pre-colonial times, once anthropological research changed to incorporate whole regions instead of individual communities (Ramón 2011, 171).

The protracted Phoenician advance into the western Mediterranean from the tenth to the seventh century BC, can be split into four categories:

- 1) The swallow craftsman/merchant navigating between home and host communities, who stayed ashore for a limited period of time. It resulted in the distribution of novel, prestige objects and no anchoring of pioneering know-how. An extreme case of this phase is reflected in the story of ‘silent trade’ between Phoenician/Punic merchants and north African tribes, described by Herodotos (*Histories*, IV, 96).
- 2) The swallow craftsman/merchant circulating between home and host communities, staying on land some weeks or months. The process was object oriented and led to the distribution of novel, prestige objects into the interior and the introduction of technological know-how that subsequently became scarcely transferred.
- 3) The swallow craftsman/merchant who settled as an individual or in small numbers, resulting at most in overseas enclaves often within an indigenous setting such as Huelva and probably Sant’Imbenia. The process is associated with the transfer of novel know-how, which frequently did not become structurally implemented by neighbouring communities.
- 4) The swallow craftsman/merchant who settled in larger numbers with the intention to establish a new, small settlement ashore, and leading to increasing exchange of goods and ideas. It is a form of overseas colonization from c. 800 BC onwards. To some extent, these Phoenician settlements functioned as outposts for ongoing activities of categories 1 to 3 in other regions in the western Mediterranean and beyond that did not become colonized, for example with Etruria and Old Latium (*Latium Vetus*).

These four categories mark growing connectivity between local populations and overseas newcomers with whom cooperative interaction could be forged. The small polities involved created specific conditions that unquestionably did not result finally in coastal towns all along the shores of the western

Mediterranean, but only in specific regions as will be argued below. In her 2017 paper, Eugenia Aubet uses a different terminology and opens with Phoenician merchant venturers. She focuses though on the above categories 3 and 4 and less on the transfer of know-how that must have included artisans. Even if less visible in archaeological terms, categories 1 and 2 precede the settling, reinforcing directional trade and ‘an ever more heterogeneous market’ (Aubet 2017, 260). Furthermore, the Phoenician ‘swallow craftsman/merchant’ does not only occur in the western Mediterranean but also elsewhere, for example in Cyprus or at Knossos on Crete. A recent study records the limited but rising number of Near Eastern luxury imports from the eleventh century BC onwards, while only later some of these were locally imitated (Antoniadis 2017). As such, categories 1 to 3 can be distinguished at Knossos, though a full enclave is unlikely to have existed. Similar conditions also arose in Italy (cf. Nijboer 2008b).

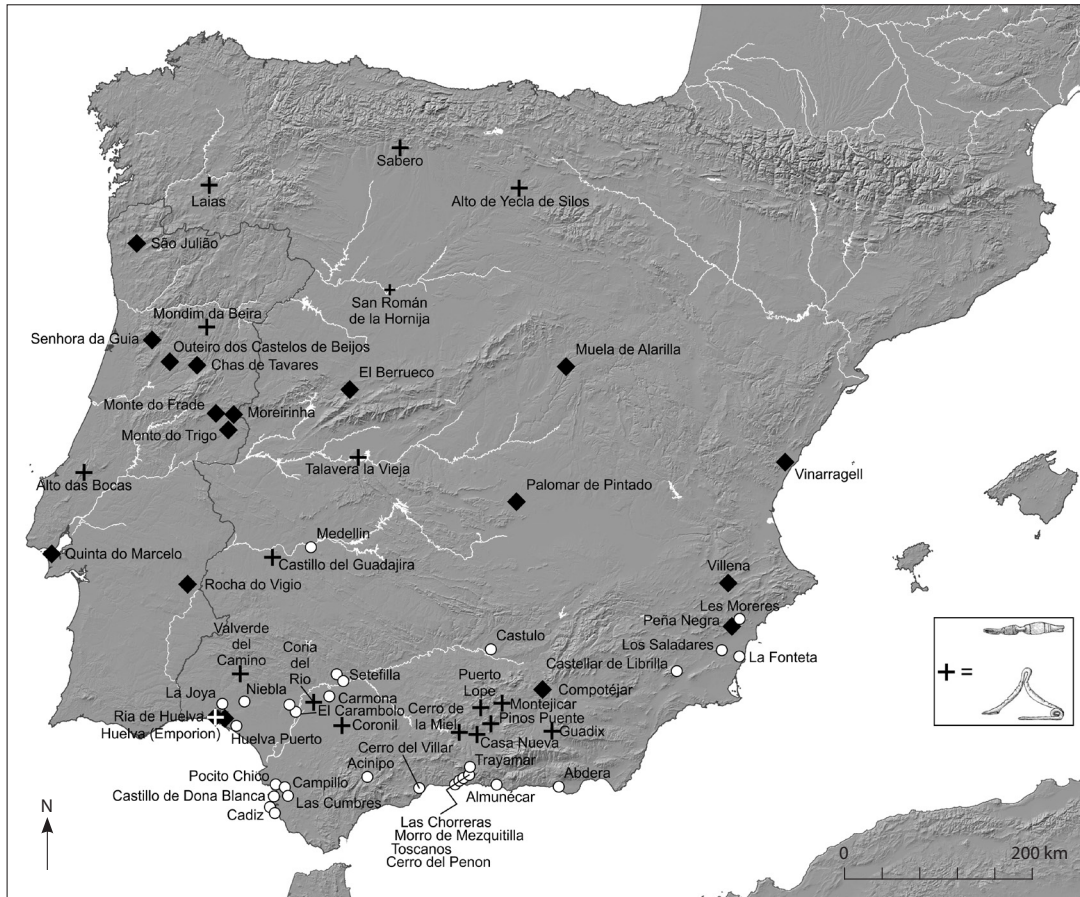
## Iron

The emergence of iron in Spain is one of the characteristics of its Orientalizing phenomenon (cf. Neville 2007; Sanmartí *et al.* in this volume). This is also recorded for Portugal with radiocarbon dates centring on 2900–2800 BP (Vilaça 2005; 2006; 2013). The associated <sup>14</sup>C analyses suggest a date as early as the twelfth–eleventh centuries BC for the first iron artefacts on the Iberian Peninsula, but I will examine mainly the rise of the structural, common use of iron and the tenth and ninth century BC for which the evidence is considered more sound.

The structural, generic use of iron emerges in many cultures in the Mediterranean and beyond, with knives and other small tools/weapons with sharp cutting edges, though in a smaller quantity than similar copper alloy tools. It is described by Snodgrass as stage 2 in the development of the iron technology (1980, 336–7). Often, this phase is triggered by the preference for the sharp, cutting qualities of the iron/steel knife blade. The third and final stage in Snodgrass’ scheme is identified by the prevalence of iron tools over copper alloy tools, marking a medium to low value of iron. This third phase requires essentially the smelting of the abundant, local/regional iron ores as reflected for southern Spain in Figure 21.1. This map presents the data on early iron in Spain/Portugal, differentiating between the eleventh–ninth century BC, or the prospecting phase, and the period after c. 800 BC when some small Phoenician, permanent settlements emerged in south and southwest Spain. The finds record that the use of iron in large parts of Spain/Portugal pre-dates the foundation of such settlements while there is a

quantitative leap during the eighth and seventh centuries BC, especially in southern Spain, it seems. It is questioned to what extent iron was worked from local ores on the Iberian Peninsula during the prospecting phase, apart from the trading and manufacturing centre Huelva (González de Canales Cerisola *et al.* 2004; 2006; Nijboer & van der Plicht 2006). Most of the iron artefacts assigned to the eleventh–ninth century BC are knives and other small tools found in settlement contexts. Neither these nor other early iron artefacts document local/regional types, characteristic for the Iberian Peninsula that could indicate local smithing. In addition, the number of iron artefacts is limited when compared to the data on ironworking of the eighth and seventh century BC (Fig. 21.1). Thus, for the Iberian Peninsula, it remains an option that during the eleventh–ninth century BC iron itself was imported from overseas as bars or worked at Huelva and possibly a few other temporary, small, indigenous-Phoenician enclaves along the coast. Subsequently, the finished iron/steel knives and other tools were transported to the interior employing the overland network of settlements. This network, shown in Figure 21.1, is not just reflected by the distribution of early iron but also by the distribution of the contemporaneous, elbow fibulae of Huelva type (Martin & Ávila 2016). Figure 21.1 thus illustrates an interior exchange network for the Iberian Peninsula during the tenth and ninth century BC. However, the nodes within this network seem to be miscellaneous, less centralized and stable than those emerging in Italy during the tenth–ninth century BC (see below). Elsewhere, I have described the elbow fibulae of Huelva type as the Huelva-Achziv fibula since some are recovered on the other side of the Mediterranean, on Cyprus and in present day Lebanon and Palestine/Israel (Nijboer 2008a). Hence, this type of fibula links both sides of the Mediterranean during the tenth and ninth centuries BC, being correlated with the introduction of iron almost all over the Iberian Peninsula, except for the north. The presented reconstruction of the launch of iron on the Iberian Peninsula is in line with the model of Kaufmann and her co-authors (2016), who state that the consumption of iron ‘prestige objects’ is not based on local smithing during the eleventh–ninth centuries BC. They wrote: ‘Relationships were forged with Andalusian and Tartessian chieftains who were able to increase their own status by the acquisition of finished Phoenician products in exchange for silver, including iron which was unknown to them before Orientalizing contact in the final Bronze Age ...’ (Kaufman *et al.* 2016, 35–9). Trade in iron artefacts is recorded between Phoenicians and indigenous groups during this prospecting phase on the Iberian Peninsula but the transfer of the





**Figure 21.1.** Early iron and the distribution of Huelva-Achziv type fibulae on the Iberian Peninsula, mainly from settlement contexts (E. Bolhuis, Groningen Institute of Archaeology): 1. diamonds – prospecting phase (eleventh–ninth century BC); iron finds plus iron production so far only attested at Huelva in a Tartessian-Phoenician context; 2. circles – colonial iron production plus iron finds (late ninth – seventh century BC) (adapted from Mielke & Torres Ortiz 2012); 3. crosses – distribution of Huelva-Achziv type, elbow fibulae (adapted from Martin & Ávila 2016, fig. 8).

associated technological know-how is not. Based on the archaeological evidence available to me, this cannot be contradicted though I consider it a minimal position since knowledge travels more easily than people (Gosselain 2016, 196), while some of the dots on the map (Fig. 21.1) refer to huts with evidence for bronze-working (Mielke & Torres Ortiz 2012).

The data on early iron for Italy relating to Snodgrass' stage 2 are for some sites considerable while being broader, since iron weapons and ornaments seem to be almost absent on the Iberian Peninsula. This might be due to the different archaeological contexts involved: intentional deposition in tombs for the Italian Peninsula *versus* the often accidental preservation of metals in settlements for the Iberian Peninsula. Ironworking was adopted swiftly in Italy by various indigenous communities since local/regional types of iron fibulae and weapons/tools emerge from the tenth century BC

onwards and rapidly increased in number during the ninth century BC (Nijboer 2018). It is open to debate when the prolific, local iron-ores became worked into bar-iron, though the amount of iron artefacts deposited in some burial grounds, dispersed all over the Italian Peninsula, indicates that this must have been a least from the ninth century BC onwards. Conclusive, early production sites and/or smithies, where iron-ores or bar iron were worked, are rarely recorded for Italy, or elsewhere in the Mediterranean, and this leads to speculation about the transmission of the necessary technology (Gualtieri 1977, 213–29; Hartmann 1985, 285–9; Delpino 1988; Giardino 1995, 114–19; 2005; 2010; Tartari 2014–2015). This section of the paper deals with the structural use of iron tools and weapons and not with the earliest iron artefacts recovered. Unlike what the data from Spain and Portugal suggest, it is improbable that the Phoenicians were directly involved in the

**Table 21.1.** Number of iron artefacts per phase at Torre Galli (c. 950–850 BC); local production of iron due to native typology of ornaments and weapons (After: Pacciarelli 1999).

Phase	<i>Fibula serpeggiante</i>	Other fibula types	Knife	Shaft	Lance point	Sword, mainly short one
1A	5	2	9	2	2	8
1B	11	2	14	-	2	4

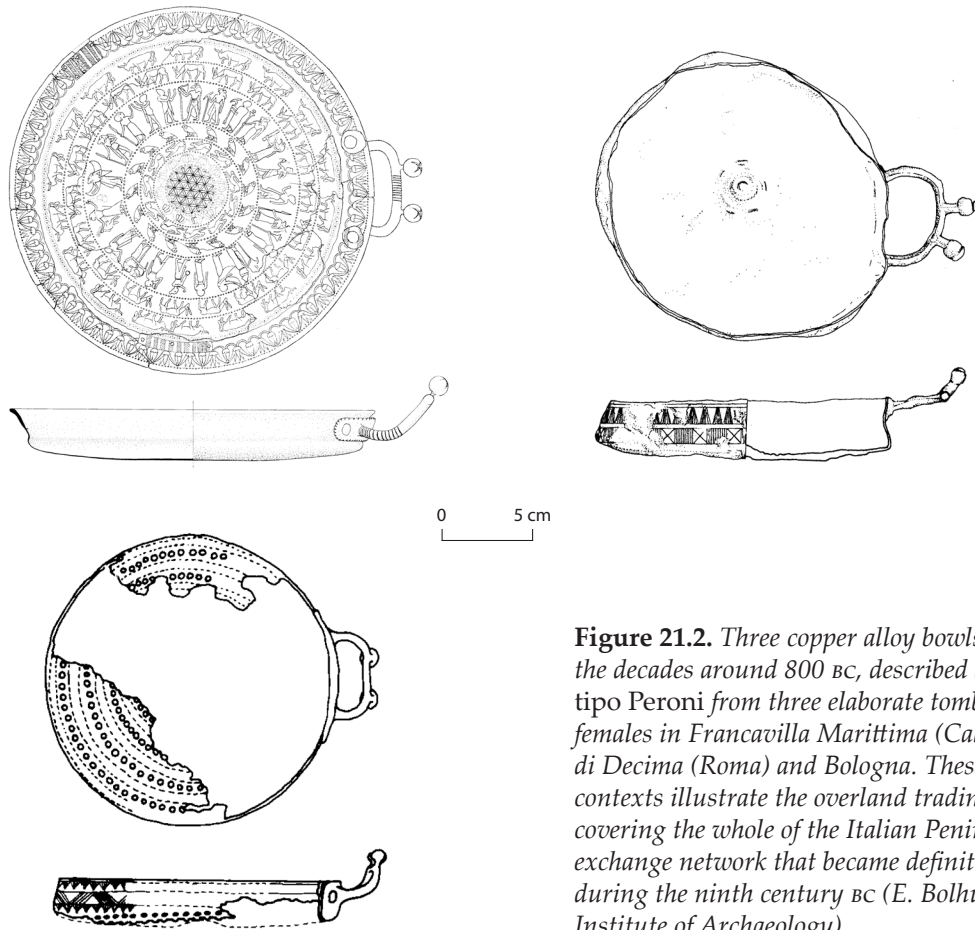
+ A few iron ringlets/rings

rapid spread of iron and the required know-how in Italy. Iron might have been locally worked occasionally prior to the tenth century BC. During the Early Iron Age, the lasting use of iron appears to have been transmitted mainly through the firm Villanovan exchange network of the ninth century BC that covered almost the entire Peninsula. Nonetheless, the first site in Italy with a considerable number of iron artefacts, Torre Galli in Calabria, has clear links with the Levant (Pacciarelli 1999, 61–2, 101–2; Sciacca 2011). The catalogue of the necropolis contains 205 Early Iron Age tombs that could be assigned to either Torre Galli phase IA (89 tombs) or phase IB (116 tombs), roughly dated here from 950 to 900 and from 900 to 850 BC (Pacciarelli 1999, 62–5). Of these 205 tombs, more or less 25 per cent contained iron, amongst other artefacts, while several iron weapons are associated with ivory parts according to the author. From Table 21.1 with its number and variety of iron artefact types, it is deduced that iron was not an exceptional metal at Torre Galli during phase 1A (950–900 BC). It rather reflects conditions as in Snodgrass' stage 2. Structural, local iron-working in Calabria is implied at least from the tenth century BC onwards by to regional artefact types in iron such as the *fibula serpeggiante meridionale* (Pacciarelli 1999, 133). Torre Galli is furthermore known for its imports from the Levant (Sciacca 2011). Its Aegyptiaca belong to the oldest found on the Italian peninsula (De Salvia 1999, 213–17), while faience beads, scarabs, semi-precious and cut stones, as well as ivory were recovered, occasionally in combination with other Levantine artefacts. These oriental commodities, found in 10 per cent of the Torre Galli tombs, were most likely carried overseas by Phoenicians since they definitely crossed the whole Mediterranean by then. This matches well the premise by Kaufman *et alii* (2016), asserting that the local elite were able to increase their own status by the acquisition of Phoenician commodities. In addition, the data from Torre Galli fits in well with Villanovan ceramics recovered at Utica in Tunis and Huelva in southwest Spain (González de Canales Cerisola *et al.* 2004; 2006; López Castro *et al.* 2016).

The emergence of an overland Villanovan exchange network in the decades around 900 BC with Etruria as core region and with stable nodes that continued to develop during the subsequent centuries,

has been acknowledged by many (cf. Pacciarelli 2000; Bietti Sestieri 2005; 2012). In terms of connectivity, the Italian Peninsula is supreme due to the countless river valleys towards the coasts, emerging on both sides of the Apennines. Quite a number of the Villanovan centres within this network became towns during the seventh and sixth centuries BC. In order to illustrate the strong Italian exchange web, as was done for the Iberian Peninsula in Figure 21.1, a rare, specific type of bowl is mentioned that was used in a banqueting ritual (Fig. 21.2). As such, this type of bowl precedes in function the ribbed bowl used during elite banqueting rituals from c. 750 BC onwards. This illustration shows three copper alloy bowls dated to the decades around 800 BC, described as *Coppe di tipo Peroni* from three elaborate tombs assigned to females in Francavilla Marittima (Calabria), Castel di Decima (Rome/Old Latium) and Bologna (Nijboer 2006). These artefacts and contexts illustrate an imported, reworked and mended Phoenician bowl and its local adaptations, as well as the overland trading network covering almost the whole of the Italian Peninsula. This interior exchange web became definitely established during the ninth century BC and reflects Trigger's notion well; trade and craft specialization were fuelled by the politically motivated demands of the upper classes for prestige goods. Many Italian colleagues consider the Early Iron Age to be proto-urban, marked by this interior network, increased centralization, and organized exploitation of the natural resources that comes with sustainable social stratification (cf. Pacciarelli 2010). For me, a pre-Roman town in Italy remains primarily a sixth century BC phenomenon of houses with tiled roofs, ample fortifications, nucleation of workshops leading to high output–low value commodities, and at least two monumental sanctuaries, amongst others. Most of such settlements are larger than 40 ha. Even so, there is for Italy during the Early Iron Age ample evidence for a phase of nucleation and centralization, a level in between a central village (a couple of hundred inhabitants) and a town (a couple of thousand inhabitants).

For both the Iberian and Italian Peninsula, the eighth century BC is crucial in quantitative terms. In Spain, this seems to be triggered by the foundation of permanent Phoenician settlements along its southern coast. For Italy, the eighth century BC is decisive due



**Figure 21.2.** Three copper alloy bowls dated to the decades around 800 BC, described as Coppe di tipo Peroni from three elaborate tombs assigned to females in Francavilla Marittima (Calabria), Castel di Decima (Roma) and Bologna. These artefacts and contexts illustrate the overland trading network covering the whole of the Italian Peninsula; an exchange network that became definitely established during the ninth century BC (E. Bolhuis, Groningen Institute of Archaeology).

to the considerable growth of the Villanovan and other indigenous settlements and expanding exchange relations, including now also the Euboeans and some other Greek-speaking groups. The main difference between both peninsulas is the north–south dichotomy that looks far more pronounced in Spain and Portugal than it is in Italy. Apart from Etruria, where the Early Iron Age surfaced during the tenth century BC, it emerged in northern Italy during the ninth century BC. It seems that iron was much later introduced in northern Spain. This is also reflected in alterations of the ceramic craft from c. 800 BC onwards. While in a number of coastal regions of Italy evidence for workshop production with the fast potter’s wheel and advanced kilns is available from c. 800 BC onwards with a speedy transition from imports to local imitations, Mielke and Torres Ortiz (2012) reconstruct this process as emerging in the south and southwest of Spain during the eighth century BC, gradually expanding to central Spain by the sixth–fifth century BC (cf. Sanmartí *et al.* in this volume).

The elusive nature of technological transfer for iron-working was illustrated in this section by two different paths towards increased output of iron tools

and weapons during the eighth and seventh century BC. The quality and vigour of the connectivity or interior exchange web that was maintained by a rising elite, seems to have been crucial for the spread of the associated ironworking know-how.

### The alphabet

There is a decidedly hybrid blend when Levantine *savoir-faire* becomes locally adopted during the Iron Age. This remains best illustrated with the introduction of the alphabet that is never a mere copying but always a crossbreed between the basic, though astonishingly versatile system of 20 to 40 alphabetic letters in combination with linguistic twists and phonetic values per language or dialect. Janko (2015, 2) even notes slight differences in the alphabet between the Euboean sites Eretria and Chalkis. One could quote as well the fifth century BC Herodotus (*Histories* 5.58; Jeffery 1967, 153):

At first they [the Greeks] used the same script as all Phoenicians use. Then, as time

went on they changed with the language (phonē), the shape (rhythmos) also of the letters. At this time the Greeks occupying most of the land around them were Ionians. These learnt the letters from Phoenicians, and reformed a few of them, but in this usage spoke of them by name as 'Phoenician' (Phoinikēia) – as was just, the Phoenicians having brought them to Greece [...].

Alphabetic writing began in the Levant around 1800 BC and 'technically speaking, the Phoenicians were responsible for standardizing the alphabet, rather than inventing it' (Rollston 2016, 133) by the eleventh century BC. Writing was an elite activity in the Iron Age Levant; an elite that included leading merchants in Phoenician city-states. By the ninth century BC, the archaeological record of the Mediterranean reveals a limited number of Phoenician alphabetic inscriptions at sites, such as Knossos on Crete (North Cemetery, Tomb J; Coldstream & Catling 1996; Antoniadis 2017) and Huelva in southwest Spain, though the local anchoring of alphabetic letters is considerably later. This might be correlated to the rate of centralization and urbanization feasible, as well as the need for an alphabetic writing system in indigenous societies. Nonetheless, the associated contexts reveal that the spread of the alphabet involved an elite network. Its introduction is thus older than the local implementation that comes with adaptations as written down for the Ionians by Herodotus (see above). Figure 21.3 illustrates the Phoenician alphabet during the eleventh–tenth century BC, the Euboean one around 700 BC, the seventh century BC Etruscan alphabet, and the seventh–sixth century BC Latin alphabetic letters, as well as the related modern alphabet in capital letters (based on Rollston 2008; Clackston 2011; Panayotou-Triantaphyllopoulou 2017). While many similarities are obvious, one can detect modifications as well per language. The most apparent ones are the phonetic alterations from Phoenician being a Semitic language with principally consonants or consonantal morphemes, to Euboean, including vowels. I could have added as column in Figure 21.3 other languages such as Hebrew or Tartessian, of which the script was also based on the Phoenician alphabet emerging during the eighth–seventh century BC, but this is not yet deciphered and might include syllabic signs (cf. Dietler 2009, 5; Sanmartí 2009; Sanjuán *et al.* 2017). Moreover, I object to the simplistic quality of schemes such as those in Figure 21.3 since it negates the considerable variations recorded for local scripts during the early stages of alphabetic writing in each language/dialect. Noteworthy deviations in letter forms are documented for Euboean in the decades around 700 BC, as well as

Phoenician	Euboean Greek	Archaic Etruscan	Archaic Latin	Modern capital letters with some indication of their phonetic value
𐤀	Α	Α	Α	A
𐤁	—	—	—	B
𐤂	Β	ϸ	ϸ	C
𐤃	Δ	—	Ϸ	D
𐤄	Ε	Ϻ	Ε	E
𐤅	Ϝ	Ϟ	Ϟ	F
𐤆	Ζ	Ϡ	—	Z
𐤇	Θ	Ϡ	Ϡ	H
𐤈	⊕	⊕	—	T <sup>H</sup>
—	Λ	Ι	Ι	I
𐤉	—	—	—	Y
𐤊	Κ	ϰ	Κ	K
𐤋	Λ	ϰ	Λ	L
𐤌	Μ	ϰ	Μ	M
𐤍	Ν	ϰ	Ν	N
𐤎	Ξ	—	—	S
𐤏	Ο	—	Ο	O
𐤐	Π	ϰ	Π	P
𐤑	—	ϰ	—	Ş
𐤒	—	ϰ	ϰ	Q
𐤓	Ρ	ϰ	Ρ	R
𐤔	Σ	ϰ	Σ	S
𐤕	Τ	Τ	Τ	T
—	Υ	ϰ	ϰ	U
—	Φ	ϰ	—	P <sup>H</sup>
—	—	Χ	Χ	X
—	—	Υ	—	K <sup>H</sup>

**Figure 21.3.** The Phoenician alphabet during the eleventh–tenth century BC, the Euboean one around 700 BC, the seventh century BC Etruscan alphabet and the seventh–sixth century BC Latin alphabetic letters as well as the related modern alphabet in capital letters (E. Bolhuis, Groningen Institute of Archaeology, based on Rollston 2008; Clackston 2011; Panayotou-Triantaphyllopoulou 2017).

for the early Phoenician scripts during the eleventh and tenth century BC (Rollston 2008, 84; Panayotou-Triantaphyllopoulou 2017, 237, table 2). Such differences are hard to represent in charts like Figure 21.3 that imply fixed letter forms. The anchoring of the alphabet is an ongoing process of standardization that even nowadays continues with the increasing replacement of handwriting with typewriting and computerization. One would need to specify the level of standardization per century or so. Moreover, writing was not invented for hard substances such as ceramics, metal and stone on which they are often preserved, but on much softer, supple materials such as damp clay, wax, vellum, linen and papyrus that have seldom been preserved, except for those clay tablets that became ceramic once fired. Therefore, some of the recorded variations in the early alphabetic letters per language/dialect might be caused by the difficulty of inscribing materials like pottery.

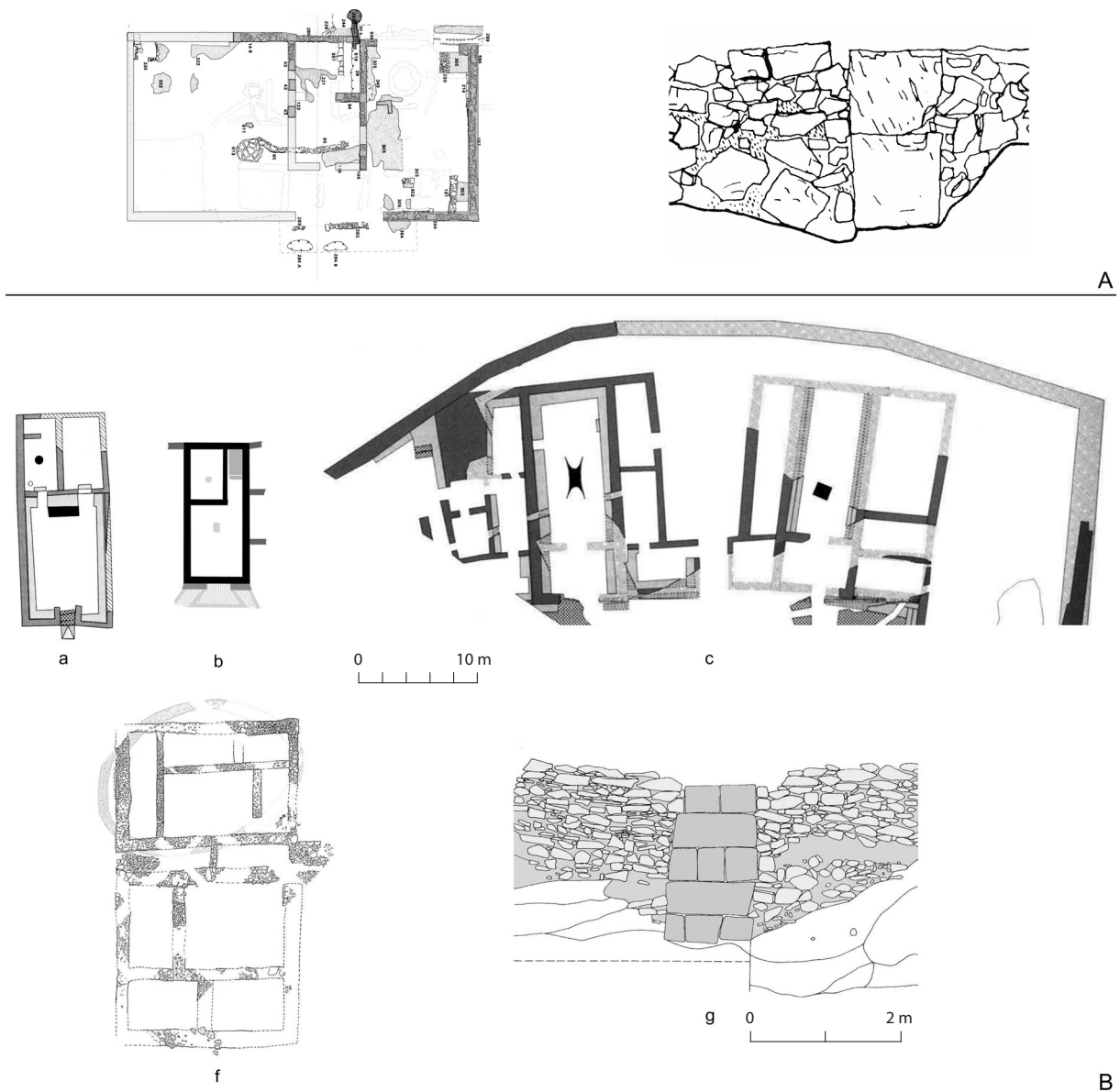
Figure 21.3 includes extant alphabetic letters from the Etruscan and early Latin languages that eventually absorbed many languages in the Mediterranean such as Iberian (cf. Dietler 2009, 5). It is generally assumed that both alphabets derive from Euboean abecedaries but, until recently, the evidence for this correlation derived predominantly from mainland Italy, indirectly recording the poor quality of data on early alphabetic letters from Euboea itself. New finds from the Euboean colony Methone on the Thermaic gulf in Greece itself, provide more detail for the evolution from Euboean to Etruscan. Prior to these finds, the transition from Euboean to Etruscan was frequently illustrated with one of the Etruscan abecedaries, often the ivory writing tablet from Marsiliana d'Albegna (around 675 BC), a site with an archaeological record that is definitely Etruscan without direct links with Euboeans and an essential node in the Villanovan/Etruscan trading network on one of the main routes connecting north and south Etruria. Using Etruscan abecedaries to illustrate the Euboean alphabet results in circular reasoning when it comes to correlations, a theme that has been revived since the finds from Methone (cf. Papadopoulos 2015; 2016; Janko 2015). Yet, the deviations in letter forms at Methone are considerable as documented by Panayotou-Triantaphyllopoulou (2017), while some fluctuate between Phoenician and Euboean appearance, as does the inscribed Dipylon vase from Athens (c. 740 BC) that still preserves a crooked *iota* and a west Semitic sideways *alpha* that is also found on some early Villanovan/Etruscan inscriptions (Janko 2015, 10–11). Based on the inscribed Methone sherds and those from other Euboean sites, one can wonder to what degree the Euboean alphabet itself was standardized by 750–700 BC.

This paper cannot go in more detail on the numerous adaptations of the Phoenician alphabet during

the Iron Age in the Mediterranean that would require a meta-analysis to assess a number of variables and hypotheses on all surviving alphabetic inscriptions from c. 1100 to 600 BC. Such an inquiry would have to include phonetic values, linguistic twists per century, as well as an established absolute chronology for the Iron Age in the Mediterranean, for which there is no consensus yet (cf. Nijboer 2016). Nonetheless, the late ninth century BC alphabetic letters from Latin Gabii (Rome) that are often considered to be Euboean in form, might well indicate a retrograde imitation of Phoenician letters (cf. Sass 2005, 155; Papadopoulos 2016, 1250). As such, they rather record a rare testimony in the lengthy route from introduction to local anchoring of the alphabetic scripts, a development that seems to have lasted centuries. There was probably no linear evolution from Phoenician to Euboean or from the Euboean to Etruscan and Latin alphabetic scripts. Besides, most of the evidence for this development has disappeared due to extinct languages with often disputed phonetic value per alphabetic sign, and the unsuitable vehicles onto which the majority of early alphabetic letters extant today were recorded originally. Nonetheless, as per Herodotus, the alphabet should be called “Phoenician” (Phoinikēia) – as was just, the Phoenicians having brought them to various regions, all over the Mediterranean.

### Early monumental architecture

The third and last example of the elusive nature of transfer of technological know-how from the Levant to the western Mediterranean deals with Iron Age early monumental structures in Spain and Italy, often interpreted as sanctuaries, but including the typical Levantine pier-and-rubble technique for constructing one of the fortifications at Huelva or the shrine at Tarquinia (Fig. 21.4). These rare buildings date from the ninth to early seventh century BC and are frequently preceded by previous, local constructions. It was therefore mostly the form, and not the function of these specific sites that changed for the local communities concerned. The buildings in Figure 21.4 document once more that novel concepts and technologies functioned within an indigenous, elite context, cultivating the input of the included strangers or swallows. At the same time, these buildings record a different architectural concept when compared to the hut-like structures that dominated in the associated, contemporaneous settlements. The early monumental architecture during the Iron Age in Spain and Italy appears in larger complexes with a communal character. The buildings shared a rectangular plan, the precinct, construction of the walls with stone foundations, durable lime-plaster floors and multiple rooms (Bonghi Jovino & Chiaramonte Treré



**Figure 21.4.** Early monumental architecture in Italy (A) and Spain (B), ninth to early seventh century BC. The illustrated buildings are often interpreted as sanctuaries but include the typical Levantine pier-and-rubble technique for constructing one of the fortifications at Huelva (g) or the shrine at Tarquinia (A) (E. Bolhuis, Groningen Institute of Archaeology, adapted from Mielke & Torres Ortiz 2012; Bonghi Jovino 1991; 2010).

1997, 169–79; Bonghi Jovino 2010; Mielke & Torres Ortiz 2012, 267–71). The result though, as illustrated in Figure 21.4, could vary considerably. The structures pertain to local, religious/political establishments and reveal yet again the cooperative character of the relations between the resident elite and the Phoenician swallow craftsmen/merchants. Simultaneously, the construction of such buildings indicates a firmer control over resources and workforce since it must have been directed and planned as was the local production

of transport *amphorae* for the storage, transport and marketing of processed, secondary agricultural products as surplus goods during the eighth and seventh centuries BC. The buildings in Figure 21.4 can be seen as an essential stage towards urbanization. However, full, sustainable urbanization is for some regions in Italy easier to detect than for the Iberian Peninsula, as revealed by several contributions in this volume by our Spanish and French colleagues. Nonetheless, a number of sites in southwest Spain, such as Cádiz and Toscanos,

are likely to have obtained urban features though their size remained relatively small during the eighth and seventh centuries BC, while others, such as Carmona, became settlement centres and essential nodes within the overland exchange network. In west-central Italy, predominantly in Etruria and Old Latium, urbanization is obvious by 600–550 BC, with residents rapidly replacing their hut-like homes with houses with tiled roofs and multiple rooms, but in a manner that is quite different from the shrines depicted in Figure 21.4. For example, the oriental pier-and-rubble technique for constructing walls did not become anchored in central Italy (Bonghi Jovino 1991), and neither does it appear in indigenous Spain. It should however be noted that the Phoenicians had more construction methods for walls than just the pier-and-rubble technique.

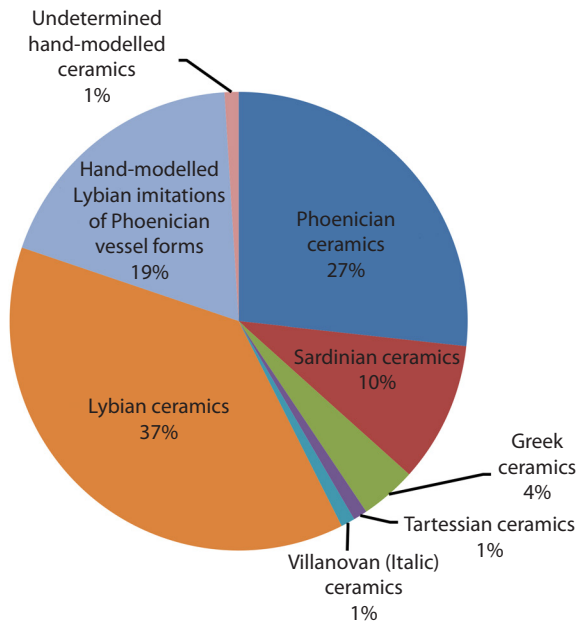
Developments at Etruscan Tarquinia led to a city by 600 BC, and the communal, monumental sanctuary constructed a century before (Fig. 21.4) can be considered as one of the turning points in the urbanization process. During the foundation ritual of the shrine around 700 BC, the ceremony included a votive deposit in front of the entrance that contained an axe, a decorated sheet for covering a shield, and an outstanding *lituus*, a sort of trumpet/horn, 145 cm in length (all in copper-alloy). The shield and *lituus* were intentionally folded, suggesting a sacrificial act (Bonghi Jovino 2010; Bagnasco Gianni *et al.* in this volume). These artefacts are considered ceremonial and, apart from the trumpet, are otherwise found in rare, elaborate, warrior tombs that during this stage often included artefacts that signal religious authority, hence the interpretation ‘warrior-priests’, a phase in between the Villanovan eighth century BC warrior chiefs and the Etruscan and Latin princes of 725 to 650 BC (De Santis 2005). The symbols of power deposited in front of the shrine at Tarquinia and its construction around 700 BC marks a political act that combines communal objectives with religious authority and Levantine know-how.

Thus, the introduction of the pier-and-rubble technique for constructing walls is fairly common in Phoenician settlements along the coasts of the western Mediterranean (cf. Stager 1985, 12–13), but it was hardly adopted by the indigenous populations with whom they collaborated. Within the local communities, these early concepts of monumental architecture were introduced and influential but became scarcely anchored and remained to some extent elusive.

### Discussion and epilogue

Aspects of the budding entwinement between Tyre, some other Phoenician city states, and the myriad of social-economic communities or polities in the western

Mediterranean, were elaborated as an essential prelude to the subsequent nucleation and urbanization that occurred in some regions of the Iberian and Italian Peninsula from the ninth century BC onwards. They correlate long-distance exchange, overland and by sea, with Trigger’s statement regarding the role of the elite and their quest for distinguishing customs and commodities underpinning local dependencies and political assimilation. The rate and permanency of all this differs considerably per polity. Entanglements were recorded in varying degrees of connectivity and are reflected in the four categories of ‘swallow craftsman/merchant’. Nonetheless, exchange of goods and ideas overall increased, gradually leading to organized surplus production for overseas exchange in several regions, documented foremost in the local production of transport *amphorae* from the late ninth and eighth century BC onwards. Some of the Phoenician swallow merchants/craftsmen, navigating between home and host communities employing staging posts, became settled swallows during the ninth century BC. But this settling was not uniform, which can be illustrated by some sites that were well investigated in the past two decades, for example, Huelva and Cadiz in southwest Spain, Utica in Tunis and Sant’Imbenia on Sardinia. The Phoenician presence in Huelva has all the characteristics of a Phoenician enclave or *emporium* within a native ‘Tartessian’ context, including the manufacture of iron tools, the early use of the alphabet, and quantification (González de Canales Cerisola *et al.* 2004; 2006; Nijboer & van der Plicht 2006; Ruiz-Gálvez Priego 2008; Aubet 2012; 2017). On the other hand, Cadiz, located on two to three islands in front of its Bay, appears to be a political, religious foundation stimulating nucleation during the eighth to sixth centuries BC on the mainland, as documented by the growth of a considerable number of indigenous coastal sites (cf. Castellano & Sáez Romero 2018). Some of these coastal sites along the Bay of Cadiz, such as Castillo de Doña Blanca, might have housed Phoenicians as well. At Huelva, the increasing connectivity is well illustrated by the ceramics and metals in both its Town and River deposit; while there is limited evidence for cross-cultural contacts with Phoenicians assigned to the tenth century, the majority of the finds refer to the ninth century BC (cf. Gilboa *et al.* 2008, 168–73; Aubet 2017). Warehousing from c. 700 BC onwards is recorded for small coastal sites in southern Spain, for example at Toscanos (Aubet 2001, 317–21; Kaufman *et al.* 2016). Such warehousing marks the accumulation of surplus production, both local and Phoenician, accommodating directional exchange that was probably registered and quantified, to some extent, by the Phoenician participants within this multi-ethnic setting. Even a site like Carmona in the interior



**Figure 21.5.** Graph with provenance of ceramics from ninth century BC, pre-Carthage Utica (Tunis) revealing Mediterranean exchange network though predominantly of Libyan-Phoenician character (E. Bolhuis, Groningen Institute of Archaeology, adapted from López Castro et al. 2016).

of the Guadalquivir valley might have housed some Phoenician immigrants from the seventh century BC onwards (Neville 2007, 81–2; 123–4).

Settling during the ninth century BC also occurred in pre-Carthage Utica (Tunis), revealing increased connectivity and entanglements during banquets (Fig. 21.5; López Castro et al. 2016; Cardoso et al. 2016). It records that those participating in the exchange network were mainly of Phoenician-Libyan origin though Greek, Sardinian, Villanovan and Tartessian communities were also involved along the line. The diverse provenance of these ceramics matches those in the Town deposit at Huelva. At Utica as well, it is a collection of ceramics that might have accumulated over decades but the associated ceramics are accompanied by an almost immediate local production of Phoenician vessel shapes in a manner that echoes the ceramic activities of the migrant potters described by Ramón (2011), disclosing a mix of techniques and styles, for Utica predominantly of a Libyan-Phoenician blend.

Sant’Imbenia in northwest Sardinia presents another case for the diverse character of entanglements. It is predominantly local in form, while being simultaneously incorporated into a solid west Mediterranean exchange network from the late ninth century BC onwards (Rendeli et al. 2017). The theme

of this book, ‘making cities’, does not apply to this region of Sardinia because one can subsequently not detect towns, as in many parts of coastal Spain and Portugal. Nonetheless, there is definitely a form of centralization in social-economic terms, a phase in between village and town, stressing its market function for long-distance exchange. Finally, one may wonder to what extent the Phoenician swallows eventually settled at Sant’Imbenia, as the site became restructured from 850/825 BC onwards. Simultaneously, a mixed Levantine-Sardinian technology and typology is recorded for ceramics, for example, in the local red-slip table wares and the transport *amphorae* that became distributed widely in the western Mediterranean during the eighth century BC (Rendeli et al. 2017). As such, the Phoenician swallows and the accompanying material record in the western Mediterranean mirror the archaeology of early Medieval, pre-urban Europe around the North Sea with central places and all kinds of emporia/trading stations (cf. Hodges 1982; 1988; Crumlin-Pedersen 1996, 25–7). There, the earliest form of a gateway community also remains somewhat enigmatic due to *ad hoc* arrangements while their inception ‘coincides with inflation in the destruction of goods in a highly conspicuous burial rite’ (Hodges 1988, 44), as it did in Etruria and Old Latium between 800 and 650 BC.

What about the Euboeans and other Greek-speaking communities in the western Mediterranean arriving around 800–750 BC (with associated radiocarbon dates from onwards 2600–2550 BP)? Dietler wrote that ‘Greeks did not establish any colonies in the western Mediterranean until the 6th century BC’ (Dietler 2009, 8; Rouillard 2009). Hardly any of these obtained subsequently an enduring urban character, while most remained enclaves like many of the indigenous-Phoenician arrangements described above. His assessment did not include coastal parts of southwest Italy, Sicily and Campania, where several Greek-speaking communities established overseas settlements by 750–700 BC, though I consider true colonization to include deliberate appropriation of local resources, mainly land, since we are dealing primarily with agricultural societies. This appropriation of resources is more a seventh- and sixth-century BC phenomenon, with differences between ‘Greek’ and ‘Phoenician’ colonization. The debate on absolute chronology does not seem to hint at an autonomous role for the Euboeans in the western Mediterranean prior to 800 BC even if this creates some fundamental problems, for example those hinted at in the section on the alphabet. With growing numbers of radiocarbon dates around 2900–2700 BP from indigenous-Phoenician contexts in the western Mediterranean, the role of the Euboeans



and possibly some other Greek-speaking communities becomes short-lived, confined to a couple of generations curbed by local hostilities and warfare. This might turn out to be impossible to acknowledge given Homer and modern ‘Graecomania’ (cf. Dietler 2009, 13–20), a theme that is definitely beyond the scope of this paper. I rather close this contribution on the fundamental prologue towards colonization and urbanization, covering mainly the tenth to eighth centuries BC, by emphasizing the elusive character of the transmission of technological know-how: perceptible but hard to frame due to diverse forms of interaction, exchange, cross-cultural consumption, as well as mixed responses. One response that definitely comes to the fore is the ensuing nucleation and centralization that comes with slightly more organized surplus production supporting Trigger’s ‘politically motivated demands of the upper classes’. This prologue could result in ‘making cities’, but frequently it did not. Moreover, comprehensive urbanization of the western Mediterranean that transcends the coastal phenomenon examined here comes only with full Romanization.

## Notes

- 1 Also see [https://www.academia.edu/31734590/Summer\\_School\\_2017\\_Ancient\\_Technologies\\_and\\_the\\_Voyage\\_of\\_Luxuries](https://www.academia.edu/31734590/Summer_School_2017_Ancient_Technologies_and_the_Voyage_of_Luxuries)
- 2 As a synonym for copying or imitation/anchoring of technological novelties.

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## Making cities

Large and complex settlements appeared across the north Mediterranean during the period 1000–500 BC, from the Aegean basin to Iberia, as well as north of the Alps. The region also became considerably more interconnected. Urban life and networks fostered new consumption practices, requiring different economic and social structures to sustain them. This book considers the emergence of cities in Mediterranean Europe, with a focus on the economy. What was distinctive about urban lifeways across the Mediterranean? How did different economic activities interact, and how did they transform power hierarchies? How was urbanism sustained by economic structures, social relations and mobility? The authors bring to the debate recently excavated sites and regions that may be unfamiliar to wider (especially Anglophone) scholarship, alongside fresh reappraisals of well-known cities. The variety of urban life, economy and local dynamics prompts us to reconsider ancient urbanism through a comparative perspective.

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