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**Minds and mines: settlement networks and the diachronic use of space on
Cyprus and Crete**

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Introduction

As in all archaeology several intersecting and overlapping issues underlie and are embedded within our models of past behaviour.¹ Alongside the ubiquitous problem of varied quality and quantity of evidence we have different chronological or cultural constructs, varied scales of observation and analysis, and different approaches and attitudes toward data and explanation. The last are of particular significance in this discussion, as we can conceive of patterns and processes from perspectives which emphasise materialist or ideological factors, seeing networks and relationships as primarily shaped by topography and resources on the one hand or by social, cultural, economic or political forces on the other. Hence our title — ‘minds and mines’.

In many analyses of social relationships and networks there is a common tendency to see these as representing relations of dependency and supremacy, and a tendency to construct ‘territories’ on the basis of spatial proximity constellations. From one perspective quantitative techniques of location theory presuppose the pre-eminence of economic factors in decision making,² somehow cutting off space from the social. Alternatively, ‘the totality of the external world as mediated through subjective human experience’³ should be considered in the study of landscape, and that spatial constellations take place against or in land that humans have ‘modified, built on, traversed, or simply gazed upon’. Landscape is therefore seen as social space which binds together spaces, places and representations, as a ‘created environment, the aesthetics of built form, and the imaginative reflections of spatial representations’.⁴

¹ We would like to thank the organisers of the Parallel Lives Conference for bringing us together in this exercise in collaborative and comparative archaeology. Jenny Webb, Bernard Knapp and Maria Iacovou provided valuable advice, especially on the Cypriot material; Carl Knappett and the members of the ToP project at the Université Catholique de Louvain (T. F. Cunningham, S. Soetens, P. Hacigüzeller, P. Tomkins, M. Devolder, Q. Letesson, F. Gaignerot, C. Langohr) on the Cretan side.

² Smith 2003, 43.

³ Cosgrove 1998, 8–9.

⁴ Smith 2003, 5; compare Given and Knapp 2003, 311–15. For a trenchant critique of this approach, see Fleming 2005.

Some of the differences perceived in patterns of relationships and trajectories of change in our two islands may therefore stem as much from implicit biases in our personal attitudes as from the evidence itself. This is no simple matter, as there is a recursive element here, where the evidence (including past and current scholarly constructs) influences, reflects and feeds back into the development of our preferred modes of explanation. In addition, we have varied, and seldom formally articulated, methods of assessing the nature or degree of interaction — or the alternative approach of identifying or defining boundaries⁵.

This said, key elements in considering settlement networks and the diachronic uses of space are obviously distance and accessibility. These, together with resources (soil, water, raw materials) form key nodes of the fundamental triad of environment, technology and culture which structure much behaviour. While the environment as a whole has an existence independent of humankind, the *perceived* environment — that which is understood and exploited by people — is determined by the available technology and by contemporary attitudes or social formations.

Networks of relationships also take many forms and a variety of overlapping or cross-cutting patterns link people and places at the same time: economic networks associated with the distribution of goods or raw materials; political networks linking or controlling regions and settlements; social networks of kinship and intermarriage; and ideational networks of shared concepts. All of these operate, at different scales, to transmit material or information in different ways.⁶ We may explore the construction of identities of different forms⁷ and see how these play out at different times in the terms of the relationships within, and especially between, groups or communities ranging in size from the family or household at one extreme and each island (or indeed the eastern Mediterranean) at the other.⁸ This relates directly to another way of understanding the structure of communities, which may be categorised as either *natural* or *imagined*.⁹ ‘Natural’ communities are more static, fixed in place within a settlement or locale while ‘imagined’ communities can take different forms, are more fluid and are based not on proximity but on relationships and on broader perceptions of identity: here there is less direct equivalence of ‘community’ and ‘site’.

We may also see the networks and connections between communities as more or less symmetrical; more egalitarian or more hierarchical; more dependent or more independent; more informally based on kinship and a ‘moral order’ of relationships between individuals in smaller-scale societies or more ‘technical’, framed by expediency or coercion in more complex systems;¹⁰ or as representing a horizontally integrated system of relationships between equals or vertically integrated in hierarchies of power and wealth. These overlap with Feinman’s two general political-economic strategies which explain social inequality.¹¹ A network-based strategy implies authority depending on relationships with individuals in other places and societies and its ability to mobilise portable wealth, which are necessary for the legitimisation of authority. Corporate-based networks imply a variety of societal

⁵ Lightfoot and Martinez 1995.

⁶ Knappett 2006.

⁷ E.g. Frankel and Webb 1998.

⁸ Cf. Yeager and Canuto 2000, 10.

⁹ Isbell 2000. See also Knapp 2003; Sollars 2005.

¹⁰ Redfield 1953.

¹¹ Feinman 1995, 266–8.

segments of different size, each with a different access to production. In the second mode, individuals play a less important role but both modes are not exclusive.

Every network therefore involves spatially placed human groups of different size and nature, engaging in different types of interaction through specific physical space. While settlement patterns can provide crucial evidence of the scale and structure of networks or nature of social integration,¹² this is problematic, given the nature of available evidence and the fact that our archaeological record and survival patterns in general, and recovery techniques in particular, influence our data immensely and have a profound effect on the distribution maps that form the basis for all spatial assessment of settlement networks and the diachronic use of space.¹³ We must recognise that little reliance can be placed on current information regarding the distribution or nature of sites on either the two islands.¹⁴

In considering spatial networks in Cyprus, we have to be content for most periods with generic similarities or the broad distribution of wares or raw materials to suggest social, economic or regional associations or shared concepts. Sometimes, particular raw materials or particular artefact types can be used to argue for specific links, but often we can only use proxy measures, most commonly endowing pottery with the power to represent different forms of social interaction¹⁵. Even here formal measures of the degree of relationship have very rarely been attempted. Only in the later periods is the archaeological evidence significantly complemented by textual references to intra-island political divisions.

In Crete divergent settlement trajectories existed within the island. Topographical compartmentalisation, combined with local resources and solutions, has consistently resulted in a variety of responses to insular and extra-insular socio-economic pressures or circumstances and in settlement patterns that are impossible to simplify. Since the 1970s, most analyses of spatial networks have applied a variety of quantitative methods to study spatial distributions of whatever phenomenon that occurs in the landscape. Following initial work by Renfrew and Cherry,¹⁶ a variety of quantitative modelling techniques have been applied with varying success to archaeological data for Protopalatial and Neopalatial Crete.¹⁷ Despite the sophistication of these studies, it is worth noting the limited extent to which actual archaeological data has been used compared with textual sources. John Bennet, for example, preferred to rely on information filtered out from the Linear B tablets and on much later historical parallels from Venetian and Ottoman Crete in reconstructing Late Minoan III settlement networks.¹⁸

We may look to all these concepts and issues as we attempt to explore networks of relationships in Crete and Cyprus in each of several successive worlds over three millennia and to consider the stimuli for their transformations. We may contrast patterns and processes of timing, duration and continuity, and the rate, scale and nature of significant transformations of social networks and community interaction. In so doing, we must also — as always — bear in mind the quality of our data and the measures we apply to it. It is a truism in archaeology that we never have enough evidence, and that which we do have is

¹² Cf. Harrison and Savage 2003; Johnson 1977, 481.

¹³ Hodder 1977, 226.

¹⁴ For reviews of surveys on Cyprus, see Iacovou 2004 and Georgiou 2007; for Crete, see Driessen 2001a.

¹⁵ Most often discussed in terms of 'regionalism' (see Frankel 2009).

¹⁶ Cherry 1977, 1978, 1984.

¹⁷ Vansteenhuyse 2004.

¹⁸ Bennett 1985, 1986, 1987, 1988, 1990.

skewed by the quirky and uneven history of research. Such issues militate against easy comparisons between our two islands — and between different periods within each.

Cypriot overview

Over 3000 years from the late fourth millennium BC Cyprus underwent several major shifts in technological and economic systems and associated social formations. These are reflected in the size, structure and distribution of settlements and their relationships with one another. The underlying historical process can be seen during some periods as an internal development with incremental evolution. At other times more rapid or drastic episodes of change are apparent. For this reason the Cypriot sequence has been divided into a series of relatively fine-scale periods, loosely related to the conventional periodisation. The changing structure of networks is illustrated in a series of highly abstract diagrams (FIGS. 5.1–5.2, 5.4) reflecting the main patterns.

Early third millennium BC (FIG. 5.1 a)

Chalcolithic society is hardly known outside the southwest of the island. This limits discussion of broader-scale networks, as that region may not be representative of patterns and structures elsewhere and larger scale networks can only be guessed at¹⁹.

The available technology restricted the scale of farming, encouraged use of lighter soils and favoured areas of better rainfall. These limits on agricultural productivity and production restricted the size of villages, leading to oscillations in structure and relationships involving periodic community fissioning, and the patchy filling of the landscape by new small settlements.²⁰ While some may have been larger or richer than others, there is insufficient evidence for assessing whether or not there was a settlement hierarchy.

Relationships between villages and, to a lesser extent, regions can be seen in the broad similarity of architecture, economy and both functional and symbolic artefacts. This fits with a model of regional integration and the expansion of ‘an existing ideology by the development and standardisation of an elaborate island-wide symbolic repertoire’ which served to establish solidarity through ritual.²¹ Some more specific interactions are represented by the distribution of raw materials (notably the symbolically important picrolite). Other patterns are seen in the distribution of pottery and stone artefacts hint at a complex of connections at different local scales.²² However, networks of interaction may have been based more on a shared ideology than on economic or other factors.

Mid-third millennium BC (FIG. 5.1 b)

Late Chalcolithic networks of interaction can also be regarded as relatively informal and based on kinship, proximity and access to particular raw materials, with no evidence of larger-scale clustering of linked communities. There are, however, significant differences from the preceding system. The decline in distribution of symbolic material (picrolite) and cruciform figures characteristic of the Middle Chalcolithic suggests a ‘realignment of extra-

¹⁹ In central Cyprus a seasonal use of different sites and areas can be identified (Webb *et al.* 2009)

²⁰ Peltenburg 1993.

²¹ Peltenburg 1998, 244.

²² Bolger *et al.* 2004.

regional contacts', implying a 'radical transformation of socio-political organisation'.²³ New forms of internal settlement organisation also developed, with the assertion of control over resources (as epitomised by the 'Pithos House' [B3] at Kissonerga).

At the same time there is evidence of increasing contact with Anatolia, preceding the advent of the Philia Bronze Age cultural system²⁴. The impact of these initial contacts on Chalcolithic social patterns and on subsequent responses remains uncertain in the absence of comparative sites and inadequate dating.

A shift from the earlier ideological representation of individual and community identity and interaction to less cohesive networks based on local economic relationships can be suggested.²⁵ This may be seen as a contraction of a broader 'imagined' community to that of more isolated local 'natural' communities, and attributed to increased environmental stress leading to a concentration on, and intensification of, local resource use. The fragmentation of Chalcolithic society may also, however, have something to do with increasing social and economic pressures created by the spread of Bronze Age settlement.

2400–2200 BC (FIG. 5.1 c)

A new cultural system — the Philia facies — characterised by an entirely different suite of technologies and associated behaviours separates Bronze Age from Chalcolithic society.²⁶

One strong model suggests that the Philia Bronze Age system developed following a migration from Anatolia about 2400 BC,²⁷ and for a time Cyprus was connected into broader international networks involving the distribution of metals, linking eastern and western Anatolia and the Aegean.²⁸

Technological innovations include the use of secondary products as introduced cattle become a major component of animal husbandry.²⁹ Donkeys provided transport for long-distance movement of goods. Cattle, used to draw ploughs, allowed a more efficient and larger scale of agriculture and the use of otherwise less productive areas. The resulting greater productivity allowed populations to increase and settlements to expand. The development of copper production also transformed the perceived and exploited environment and provided an incentive for the spread of settlement into previously neglected areas. It also provided a new basis for inter-site and inter-regional relationships.

A uniformity of ceramics and other items³⁰ argues for close relationships and constant interaction between communities which shared and symbolically projected a strong cultural homogeneity. This facilitated the flow of raw materials and of manufactured goods. In addition, some movement of people was essential to support and maintain smaller settlements with very low population numbers. Both materialist and symbolic dimensions of relationships may therefore be seen.

²³ Peltenburg 1998, 252; see also Peltenburg 1991a.

²⁴ Peltenburg 2007; Bolger 2007.

²⁵ Peltenburg 1998, 254.

²⁶ It is important to note that the originally chronological terms ('Bronze Age' and 'Chalcolithic') now become referents to cultural entities, not simply to units of time.

²⁷ Webb and Frankel 1999; Webb *et al.* 2006; Webb and Frankel 2007.

²⁸ Webb *et al.* 2006.

²⁹ Croft 2006.

³⁰ Webb and Frankel 1999; Frankel and Webb 2006.

While the differences in size and degree of economic independence between villages meant there was some asymmetry in relationships, there is no evidence of coercion. The system displays horizontal rather than vertical integration.

The relationship between the closely integrated network of Philia communities and those people still living in the Chalcolithic tradition requires considerable research. It is likely that for some generations there were two ethnic groups on the island with parallel, overlapping, perhaps sometimes interacting, but discrete networks of relationship (FIG. 5.1 d).³¹

Between about 2400 and 2200 BC there were natural communities within villages, whether of Chalcolithic or of Philia traditions. Each formed part of one or the other of two imagined communities, although the Chalcolithic network may have been far less integrated, and perhaps under greater social and economic stress, than that linking Philia villages. The social networks and imagined communities of Philia people would also have varied. Those living in smaller peripheral sites may have had little or no awareness of more distant places, while people at larger sites, and especially those on the coast associated with international exchange systems, would have had a broader vision of their place within a wider world.

2200–1750 BC (FIG. 5.2 a)

This period saw a gradual evolution from Philia through Early Cypriot I to III and into Middle Cypriot II. There is a broad uniformity in material culture and no remaining trace of Chalcolithic elements. It is likely that the overall population increased, more settlements were established, and settlements continued to expand.³² There is little evidence of foreign connections, and Cyprus was largely isolated. Within this relative equilibrium, different patterns of inter-regional relationships or networks of interaction developed as the close cultural homogeneity of the Philia system broke down into a mosaic of regional groupings³³.

Patterns of ceramic similarity show varied and changing regional associations, generally with closest connections between near neighbours, cross-cut by connections linking sites such as Lapithos on the N coast with those closer to the copper sources on the northern fringe of the Troodos range (FIG. 5.3).³⁴ While some sites were larger and more influential than others, there is nothing to suggest social or political hierarchies, or that relationships were anything other than kin-based. The distribution of some primary products (especially copper) and, to a lesser extent, manufactured goods both stimulated, and was facilitated by, connections based on intermarriage.

An increased regional diversity can be attributed to a number of factors. There was no longer a need to provide a strong symbolic signal of identity; connections between ‘parent’ and peripheral secondary settlements declined as smaller villages grew increasingly self-sufficient with less imperative for importing either goods or marriage partners; the nature of copper production changed — where at least some Philia copper was destined for export

³¹ Frankel 2000, Frankel and Webb 1998; cf. Peltenburg 1991b.

³² Georgiou 2007.

³³ Georgiou et al. 2011.

³⁴ Frankel 1974a, 1974b, 1978; MacLaurin 1985; Webb and Frankel 2001. For an attempt to measure relationships within a single community, see Frankel 1975.

through northern ports such as Vasilia, this was no longer the case, allowing the development of alternative allegiances.

This can be therefore be characterised as a period of incremental growth and economic and social equilibrium, with smaller and larger villages linked in an egalitarian, horizontally integrated system, and with patterns of interconnections based on kinship and the exchange of goods for internal consumption within the island. That is, networks were largely built on social relationships which facilitated economic exchanges.

1750–1650 BC (FIG. 5.2 b)

During the latter part of the Middle Bronze Age different networks emerged, with changes in settlement pattern and increasing connections abroad. Some smaller settlements were abandoned during Middle Cypriot II and populations congregated in larger centres. There was a shift from agriculturally marginal areas near the copper-bearing zones toward these expanding foci.³⁵ This may have been due to a combination of circumstances, including environmental decline which rendered marginal areas less attractive or viable. Social forces may, however, have been at least, if not more, significant.

The underlying patterns of overlapping interactions between nearest neighbours, and increasing social distance with geographical distance continued, but there were also developments of some stronger signals of separation and assertions of identity.³⁶ There is no evidence, however, that the developments toward a larger sites was immediately associated with an equivalent asymmetry in social, political and economic authority.

1650–1550 BC (FIG. 5.2 c)

During the Middle Bronze Age Cyprus became increasingly involved with the outside world. Cypriot pottery, especially wares characteristic of eastern parts of the island, was exported to the Levant and Egypt, alongside copper and other commodities. These external connections, whether initiated internally or externally, were crucial in the development of more complex social formations. This required both new technologies (more efficient ships and new metallurgical processes) and new forms of social organisation associated with larger scale production of both primary products and manufactured goods. The rapidly increased demand for Cypriot material and goods transformed economic relationships from those based on social networks to others based on a more formal — perhaps a more commercial — footing.

The late Middle Cypriot growth of larger centres provided a platform for a new order of relationships, as earlier kin-based networks gave way to commercial and more industrial scale production, associated with a transformed political landscape. During Late Cypriot IA some centres began to dominate broader territories, within which sites now assumed, or were established to provide, new specific functions. Enkomi asserted formal control over

³⁵ Such as Nicosia-Ayia Paraskevi, Ayios Sozomenos, Kalopsidha, Pyrgos and Deneia.

³⁶ The cemeteries at Deneia provide a good example, with the development of some wares or types seldom found elsewhere, including Black Polished ware and large Red Polished basins and jugs with heavy relief decoration. It is, however, also possible that these vessels were not so much signalling a difference between Deneia and its neighbours, but rather social differences within or between the villages associated with the burial grounds at Deneia. That is, they might indicate smaller scale networks within the natural community of the settlement (Webb 2010).

much of the eastern half of central Cyprus³⁷ and a series of forts or fortified settlements appear for the first time. Enkomi thus became a — if not the — paramount commercial and political centre dominating inland villages, fortified sites, copper resources and routes, and served as a ‘gateway’ for the distribution of goods to the Levant. It is, however, possible that all inland sites were part of the one political sphere of influence. There may have been direct competition between Enkomi and other sites — perhaps Morphou-Toumba tou Skourou³⁸ on the W coast or one near Vasilia and Lapithos on the N coast — each vying for control of resources.

For the first time a more formal set of relationships can be suggested, with both commercial exchanges and an associated political dimension to establishing and controlling territory and networks of interaction. The older patterns of horizontal integration now gave way to a vertical pattern, with an increased asymmetry of power and economic dependency.

1400–1200 BC (FIGS. 5.2 d, 5.4 a–b)

In Late Cypriot II the more complete incorporation of Cyprus into the broader commercial and political systems of the eastern Mediterranean enhanced the development of more formal polities.³⁹ A series of ‘cities’ or ‘urban centres’ developed around the coast. Beyond these, functional and structural differences characterised inland centres, smaller agricultural villages and mining communities.⁴⁰ These signal the further evolution of an hierarchical network, with dominant groups in control of a centralised administration, organising copper production and the large scale transport of ores or metal from the mines to the coastal ports, and the collection, storage and redistribution of other goods.

While a general uniformity of products and practices suggests the maintenance of social, low-level economic and ideational networks linking all parts of the island, the nature of political interactions is more controversial. One view is that Cyprus was a single political entity (‘Alasia’) under a single dominant authority based at Enkomi.⁴¹ The hierarchy of settlements would then have had an extra level, above the local administrative, storage and redistribution centres (FIG. 5.4 b). The broad imagined community would have been manifest at an island-wide scale, at least so far as the political and economic elites were concerned.

The alternative model is that of a heterarchical system, with a series of independent polities,⁴² perhaps a later development from an originally more unified system built up around Enkomi (FIG. 5.4 a).⁴³ The number, scale, location and structure of these autonomous polities remain unclear. In this scenario, at a political level, people’s primary allegiance and identity would then have been to their local region, although the evidence of mass production and distribution of pottery indicate exchange networks that cut across the political boundaries, while other symbolic items indicate ideational mechanisms of engagement.⁴⁴

³⁷ Peltenburg 1996; see, however, Crewe 2004.

³⁸ Cf. Keswani and Knapp 2003.

³⁹ Webb 1999; Knapp 1977.

⁴⁰ Catling 1962; Keswani 1993; Knapp 1997.

⁴¹ Knapp 1997, Peltenburg 1996.

⁴² Keswani 1993, 1996; Manning and de Mitter 1997.

⁴³ For example, Webb 1999, 305–6.

⁴⁴ Webb 2005.

Whichever model of political structure of the island as a whole is preferred, at the finer scale the local regional networks probably had much in common, with similar hierarchies of settlement type. Their structure and nature varied according to topography, access to resources and, doubtless, also historical factors and political developments. The flow of primary products such as copper and olive oil, perhaps within a tithe or tribute-based system of economic and political coercion, may have been a critical factor in defining the administrative reach and territory of each centre. Along the S coast, where there was a shorter distance between the coast and copper-producing regions in the hills, there was little need, or indeed space, for intermediate sites such as those which characterised the broader network linking Enkomi with its hinterland.⁴⁵

The imagined communities of individuals living or working in different parts of each region, or having a different role and status within its social and political hierarchy, would all have differed. These might range from the limited world view of a miner or farmer in a more remote small village⁴⁶ to the international view of a merchant trader or administrator of a coastal centre. They would, however, all have been bound together by their place and role within the economic and political hierarchy.

After 1200 BC (FIG. 5.4 c)

After about 1200 BC, as Late Cypriot IIC gave way to Late Cypriot IIIA. Cyprus was affected by the broad social and economic collapses of the major eastern Mediterranean states, either involving more direct impacts of population movements or the flow-on effects of disruptions to trade and other forms of interaction and the collapse of established economic relationships. The loss of the overseas markets and commerce may be regarded as the proximal cause for the abandonment of most — although not all — of the LCII urban centres. This was neither a sudden event nor a universal pattern, but a gradual retraction or recession, affecting different areas and sites to varying extent.

The nature of networks during this short-lived interlude remains unclear, but the established hierarchies of special-purpose sites characteristic of LCII no longer seem to be in operation: their functions in supplying raw materials to distribution centres now made redundant.

After 1100 BC (FIGS. 5.4 d–e, 5.5)

New configurations of settlement and associated networks of relationship rapidly began to develop in the eleventh century BC: there was no protracted period of social collapse. A few locations continued in use, and some new foundations directly replaced older sites. As cogently argued by Iacovou,⁴⁷ the pattern of settlement and of interaction which emerged at this time remained in place for much of the ensuing Iron Age, with a complexity of cross-cutting linguistic, ethnic, economic, ideological and political networks.

Until the last centuries of the first millennium BC Cyprus was divided into a series of formally constituted ‘kingdoms’, perhaps generically similar to the polities of the Late Bronze Age although both their number and location remain the subject of debate, largely based on historical or proto-historical sources rather than archaeology *sensu stricto*.

⁴⁵ Keswani 1993, 78–79.

⁴⁶ Cf. Knapp 2003.

⁴⁷ Iacovou 1999, 2002, 2005a, 2005b, 2006a, 2006b.

These developing independent Iron Age kingdoms, most clearly identifiable in the early Cypro-Archaic period, may have been political and perhaps commercial rivals, with internal relationships affected by varied and changing allegiances to external powers. In addition, the textual evidence suggests differences in language. Some people retained the older Eteo-Cypriot language inherited from the Bronze Age, but others' native language was Phoenician or Greek. Where there was a common language, this may have provided a greater ease of communication between individuals, while the dominant languages in some regions or kingdoms coincided with, or were used in part to support particular political orientations. The various kingdoms were, however, closely linked into economic relationships by the flow of manufactured goods and indistinguishable in material culture and behaviour, as 'the affluent Cypro-Geometric period does not provide material evidence of the differentiation of communities on the basis of language or material culture'.⁴⁸ Overlaid across these political and economic relationships another broad sacred landscape may also be envisaged. The presence of both major and wider array of lesser sanctuaries across the island provided a cross-cutting network of imagined communities linked by particular religious preference or affiliation (FIG. 5.4 e).⁴⁹

Within these broad-scale networks were local clusters of sites: cities, sanctuaries, smaller settlements and other sites identify associations at the local level which integrated particular communities and controlled the flow of goods between them, reflecting general patterns similar to those of the Late Bronze Age (FIG. 5.5).⁵⁰

Cretan overview

Despite a series of violent destructions intervening all throughout its Bronze Age history, starting from the Final Neolithic period onwards, Crete's social organisation and associated economic systems have usually been regarded as relatively stable and continuous up to the thirteenth century BC. Rarely, contrasting views have been proposed.⁵¹ Recently, however, a series of archaeological discoveries, survey results and new studies have questioned this notion, pinpointing times of rapid and radical change.

*Prepalatial (EM I – MM IA)*⁵²

From the Early Neolithic period onwards, ceramic studies by Tomkins or axe studies by Strasser have shown that Knossos participated in a wider network that, apart from providing the household with complementary goods, undoubtedly had a symbolic value, and also included imports from abroad.⁵³ On the basis of survey results, the Final Neolithic period can be regarded as the period when all lowland plains of the island were for the first time settled. Even in the most remote region prospected, small habitation sites, sometimes linked to special function sites (cemeteries, cult places?) have been identified. In other cases, burial sites show great permanence while habitation sites do not, perhaps implying a more nomadic style of life. Some attempts have recently also be made to identify regional

⁴⁸ Iacovou 2006a, 44.

⁴⁹ Ulbrich 2005.

⁵⁰ Given and Knapp 2003, 270–7.

⁵¹ Cherry 1983.

⁵² The chronological division presented here is a matter of convenience.

⁵³ Tomkins 2004, 2007; Strasser 2005.

networks at the very end of the Neolithic in the far east of the island. The identification is based on proximity and view sheds, resulting in discrete clusters.⁵⁴ Apart from Knossos and perhaps a handful of other sites, the scale of these settlements is limited — less than 2 ha — and usually regarded as reflecting small, nucleated villages, hamlets and isolated farms, entirely focussed on the exploitation of local agricultural and marine resources, even if some may have had a few part-time specialists, producing axes or pottery. There is, however, a clear break between these sites and the following EM I occupation and a change in material culture which, apart from possibly reflecting the arrival of newcomers, may also imply a different economic strategy.⁵⁵ A clear illustration of this break is now given by Y. Papadatos's excavation at Petras-Kephala.⁵⁶

But already in EM I, and continuing from then for the next 1500 years or so, the island was characterised by a considerable degree of regionalism and a differentiation of material culture that is especially obvious where architectural practices, burial customs, seal iconography and pottery traditions are concerned. Regionally — and then especially within what we have called *natural polity territories*,⁵⁷ areas that were geographically circumscribed — sites gradually develop in a more or less similar way. From EM II, within many of these natural communities, one remarks the incremental importance of coastal sites, often to the detriment of earlier remote inland areas that are now abandoned. It is these coastal sites that henceforth stand at the top of a limited site hierarchy with two or three tiers. This seems to indicate the importance of coastal interregional connections but also of off-island relations. There is good evidence for the presence of the first monumental constructions⁵⁸ in these coastal sites, including Knossos, Malia, Tylissos and Palaikastro and many of these grow into large villages (Level 4),⁵⁹ some of which cover 3 to 4 ha. At the same time, a site such as Vasiliki underlines the importance of Isthmus connections. But criss-crossing these regional boundaries are certain aspects of material culture, reflecting the generation of a wider, symbolic network, that, at first, seem to follow erratic or random routes. Most telling is perhaps the establishment of peak sanctuaries, of which several date back to this early period. This suggests the existence of a supra-regional network, also hinted at by the diffusion/transmission/distribution of other features. During EM II, for example, Sbonias has detected a great uniformity in seal shapes and designs throughout the island.⁶⁰ And where pottery is concerned, EM I–EM IIA and EM IIB wares show a wide distribution throughout the island (FIG. 5.6). Day and his colleagues have noted that, from at least EM I onwards, Mesara imports — fine painted ware and fine grey

⁵⁴ Tomkins *et al.* forthcoming.

⁵⁵ Although some authors have argued for continuity, this seems to become more unlikely: see refs. in Haggis 1997, 294, n. 20; and Wilson and Day 2000, 51, for the break in ceramic terms (with refs. to Hood's work).

⁵⁶ Papadatos 2008; Papadatos and Tsipopoulou forthcoming. I've added Pap 2008. ok

⁵⁷ Driessen and MacGillivray 1989; Tsipopoulou and Papacostopoulou 1997.

⁵⁸ MacGillivray and Driessen 1990, 399; Schoep 1999a.

⁵⁹ Malia itself already had an extent of about 2.58 ha and recently another large site was identified a few km to the E, near the Arkovouno hill (S. Müller in Blackman 1997, 109). Knossos has been said to cover 4.84 ha (Whitelaw 1983, 339), Phaistos about 1.5 ha (Watrous *et al.* 1993, 224; Watrous 2004) and Watrous's team has identified as a series of small sites (campsites, hamlets) as well as 'the largest EM I-II settlement in the Isthmus of Hierapetra' at Halepa at the east end of the Pacheia Ammos bay which covers 2 ha (Tomlinson 1996, 45; *BCH* 120 (1996), 1234-1235; L.V. Watrous pers. comm.). Blackman and Branigan (1977, 69) discovered a 3.25 ha site in the Ayiofarango, 'possibly the largest Early Minoan settlement yet known'.

⁶⁰ Sbonias 2000.

ware — sporadically reach Knossos but also the very E and W of the island.⁶¹ Gradually, the number of imports rises, especially during EM IIA. Other Mesara wares, including dark-on-light painted jugs were also found at Knossos, Malia, Kalo Chorio and Ayia Fotia. Indeed, ‘the finest-quality pottery of EM I-IIA [at Knossos] seems to have been imported from the Plain of the Mesara... and the ordinary painted wares share a common origin with those of other sites in both the north and south of the island.’⁶² Funerary customs too are not always regionally limited, perhaps suggesting people moving from one area to another. From EM IIB onwards, specific changes can be noted which may be related to the building of more monumental constructions in some of the coastal areas. Where pottery exchange is concerned, Mesara imports occupy a much smaller proportion now at Knossos and fewer high-quality ceramic products occur, partly involving imports from the Lasithi-Pediada area and from E Crete (Vasiliki), alongside local products⁶³. But at a site such as Myrtos-Fournou Koryfi, the South Coast tradition takes up about 50% of the vessels in use during the final occupation of the site, the two other fabrics (Vasiliki and Mirabello wares) each about 25%.⁶⁴ Mirabello ware now reaches Malia, Kalo Chorio, Kavousi, Mochlos and Petras.⁶⁵ But where sealstones and sealings are concerned, a common style links places such as Archanes, Marathokephalo and Platanos in central Crete,⁶⁶ whereas the rest of the island uses different traditions. Such erratic distribution patterns seem to show different networks or imaginary communities at work since often it is clear that it is not the ‘nearest neighbours’ that repeat characteristics. It does stress that simple economic patterns were not the prime movers for exchange. In the later Prepalatial period, the settlement pattern changes somewhat: nucleated villages seem less important and there is a new emphasis on mountain zones. Is this because of external pressure or a result of the exploitation of new agricultural and pastoral resources? More special function buildings seem to be attested (metallurgy at Chrysokamino, guard posts, fortifications...)⁶⁷. Against this background of changing alliances, the great unknown is the role Knossos played within this general frame. Its prime role in Greek mythology and the importance of its Neolithic and Bronze Age remains make it difficult not to include the site in whatever type of symbolic network that is reconstructed.

Protopalatial (MM IB–MM IIIA)

Regional networks seem now to have become stronger and large groupings of material culture are regarded as reflective of regional polity establishments — sometimes dubbed ‘early states’. This is often connected with the monumentalising trend that now characterises the main settlements, each interpreted as heading a largely independent political unit, often consisting of three or four tiers. The regional capitals are relatively large, with Khania at least 7.64 ha, Phaistos 15 ha, Gournia 21 ha, but Knossos already 45 ha and Malia even 60 hectares. The settlement hierarchy is especially clear for the Malia region where the survey team has detected three concentric circles of villages and hamlets

⁶¹ Day *et al.* 1997, 284, with refs.

⁶² Day and Wilson 1998, 354; see also Wilson and Day 1994, 1999.

⁶³ Momigliano 2000, 101.

⁶⁴ Whitelaw *et al.* 1997, 268–9.

⁶⁵ Day *et al.* 1997, 285.

⁶⁶ Sbonias 2000, 287.

⁶⁷ Haggis 2004, 229–30.

around the Palace site, or in the Mesara-Amari region where sites such as Monastiraki and Apodoulou can be seen to show identical sealing practices (including iconography), an almost identical pottery consumption pattern and similar architectural features. The new survey results for Pediada seem to suggest something similar. Moreover, the identification of *soroi* — signalling beacons or the like (placed at regular intervals) — unites the entire central Cretan region with the palace site at Knossos. Each of these regions further distinguishes itself by certain aspects of material culture. An example is the settlement network represented by the so-called Malia state that, according to some, can be identified on the basis of the products of the Malia seal cutter's workshop and by the distribution of documents in the Cretan Hieroglyphic script. Of the about 500 sealstones attributed to the Malia workshop, a fifth comes from Malia itself, three fifths are not provenanced and the other fifth comes from about 40 sites of which almost half (17) are located in the immediate environs of Malia itself, 10 other sites are in east Crete and 14 sites in the central region of the island.⁶⁸ Knossos and Phaistos are, however, almost absent from this series. Poursat and Papatsarouha note how this distribution map agrees remarkably well with that of Cretan-Hieroglyphic documents,⁶⁹ and wonder whether both reflect a single administrative system and perhaps a socio-political link. They have also identified a workshop in east Crete, perhaps at Palaikastro, (re)producing similar seals.⁷⁰ In central Crete, especially during MM I, the Mesara and the north follow their separate iconographic traditions.⁷¹

But although all the surveyed regions of the island — apart from Ayiofarango — show a drastic increase of settlement during this period, Lasithi, Kavousi, Vrokastro and east Crete do not develop a settlement hierarchy.⁷² Lasithi shows small villages and hamlets but no large settlements, whereas in the far east of the island, a few large settlements exist — Palaikastro, Petras (with its palace), Zakros and perhaps Makrygialos-Diaskari — but no secondary settlements: we have described this elsewhere as an *achoritic* system.⁷³ Jan, pls check above two sentences, which have been somewhat redrafted. Ok This is the region, however, with the largest number of small special function sites such as peak sanctuaries, roads and road stations.⁷⁴ From the Early Bronze Age onwards, some paved roads existed within some major settlements, but now the most common overland communication arteries between a series of nearest neighbour settlements were also materialised. This is especially clear between Palaikastro and Zakros and between Malia and Sisi, where the actual Minoan roads have been preserved, often flanked at regular intervals by what have been called guard posts⁷⁵. Their precise function is not yet clear but they seem to reflect a deliberate attempt to control the natural landscape. A similar incentive may then perhaps be identified in the continuing establishment of ritual sites on the peaks of some prominent

⁶⁸ Mostly three-sided prisms in steatite: see Poursat and Papatsarouha 2000 for a detailed discussion.

⁶⁹ Poursat and Papatsarouha 2000, 261.

⁷⁰ Poursat and Papatsarouha 2000, 268.

⁷¹ Sbonias 2000, 289.

⁷² Cadogan 1990, 1995; Haggis 1996, 424; Haggis 2005; Knappett 1999; Knappett and Schoep 2000.

⁷³ Driessen 2001. Cf. Crumley 1995, 29, who distinguishes between *synchoritic* settlements (where the population of the centre is supported by the surplus produced by a rural population), *achoritic* settlements (like the Greek poleis) and *epichoritic* settlements (where the centres are all but deserted except for a few specialists but the outlying area supports a sizeable rural population).

⁷⁴ Branigan 1972; Driessen and MacGillivray 1989; Tsipopoulou 1995, 1996; Tsipopoulou and Papacostopoulou 1997

⁷⁵ Tzedakis *et al.* 1990; Müller 1991.

mountains. The far east shows a high number of such ritual sites that link the main settlements with the pasture zones in a single holistic landscape, as shown by view shed and line of sight analyses (FIG. 5.7). The mere presence of peak sanctuaries links this part of the island with the central region and the Ayios Vasilios valley, leapfrogging mountains and leaving out more neighbouring lands. Soetens has noticed how major places such as Malia, Kato Zakros, Monastiraki, Myrtos-Pyrgos, Kommos, Ayia Triada, and Gournia lack a view towards a peak sanctuary in contrast to many a minor settlement, an observation which reminds one of one of the premises of networks, that they *emerge* rather than being imposed.⁷⁶ But he has also shown how the peak sanctuaries see each other, both in central and east Crete, and this during the Protopalatial and Neopalatial periods. That an important symbolic network lurks here seems beyond doubt. A combination of Thiessen polygons, cost distance analyses, central places and peak sanctuaries results in a mosaic of Protopalatial peer polities, each composed of clusters of sites (FIG. 5.8).⁷⁷ These polities largely follow natural divisions but, as said, their internal settlement network differs considerably. Other features link some areas with each other but leave others out. A case in point is the distribution of ‘real’ Kamares ware. It has a very restricted distribution appearing at a discrete series of Cretan sites (Kommos, Palaikastro, Kamilari, Kamares, Ayia Triada) but is massively present at Phaistos and Knossos⁷⁸. It is now obvious that the shapes occur in functional sets of vessels, pointing to a social drinking practice which played an important role in the function and symbolic meaning of these two last centres. A high proportion of this fine display pottery was effectively produced in the Mesara plain,⁷⁹ perhaps in the same workshops that had produced fine pottery for export during Prepalatial times. This is somewhat a surprise after the relative rarity of such imports at Knossos during EM III–MM IA.⁸⁰ At Malia, however, very few Central Cretan Kamares imports exist and also very few imitations.⁸¹ Instead, the Maliots invented their own traditions, either trichrome or in so-called Scottish style. This last style also exists on the S coast, at Myrtos-Pyrgos, and may suggest close links between the elites at both places.⁸² Malia, however, has the creation of a relief style in common with Knossos and Phaistos, now also attested at Chania.⁸³ Malia also imports Mirabello ware, South Coast ware and Mesara ware when it comes to oval-mouthed amphorae,⁸⁴ and Myrtos-Pyrgos does largely the same. So, the latter site, although closely following Malia to some degree in its fine wares, also produces its own pottery as well as importing from Palaikastro.⁸⁵ Palaikastro in its turn imports Mirabello ware during this period.⁸⁶ And a local East Cretan polychrome style is also exported to Knossos and Egypt.⁸⁷ Hence many of these sites seem ideologically or

⁷⁶ See: Knappett 2006 for network theory; Soetens 2006 for peak sanctuaries.

⁷⁷ Vansteenhuyse 2005; Soetens *et al.* 2008; see now also Bevan 2010.

⁷⁸ Day and Wilson 1998, 352.

⁷⁹ Day and Wilson 1998, 356.

⁸⁰ Wilson and Day 1994, 86.

⁸¹ Poursat 1997, 301.

⁸² Knappett 1997.

⁸³ A MM III conical cup with dolphin relief is illustrated in Vlasaki (2010: 52).

⁸⁴ Knappett 1997, 308, stressing that these vessels, however, are remarkably similar in shape and decoration.

⁸⁵ Knappett 1999.

⁸⁶ Day 1997, 225, n. 38.

⁸⁷ Day and Wilson 1998, 353.

symbolically linked in one way or another but we cannot at this point decide which network was the stronger.

Neopalatial (MM IIIA–LM IB)

At the beginning of the Late Bronze Age, settlement numbers drop in Lasithi and the regions around Gournia, Kavousi and Malia as well as in the western Mesara without nucleation taking place. Elsewhere, however, as on the Akrotiri peninsula, in the Vrokastro area, the Ayios Vasilios valley and in the far east of the island around Petras, Palaikastro and Itanos, the number of sites seems to rise slightly or considerably. There is an island-wide establishment of small sites, usually identified as farmsteads or, when there is obvious architectural elaboration, as ‘villas’.⁸⁸ In some central regions, however, the site hierarchy seems less integrated and less clear than during the Protopalatial period. In the Malia region, for example, the Palace site continues at a much smaller scale than before and the countryside is largely abandoned. This may imply that Malia has by now been incorporated into a larger framework. The same process seems to be the case in the Mesara and central Crete where there is perhaps an increase of rather similar higher order centres — the Phaistos-Ayia Triada-Kommos triangle,⁸⁹ and the Tylissos-Archanes-Galatas nexus — now under the sway of Knossos, the only settlement to grow into an intensively settled site of at least 75 ha during the Neopalatial period⁹⁰. The demotion of the Malia and Phaistos polities would thus have turned them into secondary centres within an integrated hierarchy that acted at a higher level, with Knossos as a real ‘central place’,⁹¹ encircled by Level 3 satellite settlements at regular and shorter distances, e.g. Vathypetro, Kannia-Mitropolis, Pitsidia, Milatos. In E (Mirabello and Siteia) and W Crete, however, the increase of site numbers and the appearance of an integrated, well-developed hierarchy suggest the establishment of ‘states’, illustrating some kind of secondary state formation, following central Cretan events. The abundance of material culture and uniformity between the different areas of the island has been interpreted as a sign for Knossian cultural, if not political, domination; but the picture is less clear than one would hope for. The proliferation of an elaborate architectural style, for example, links the different settlements and areas of the island at the same time as it serves to accentuate their particularistic and idiosyncratic behaviour.⁹² Gypsum, for example, is used as a veneer in some sites if local resources existed — or imitated, if they did not exist, as at Petras — but in regions where there are no local sources we encounter contrasting behaviour: Nirou Chani, for instance, massively imports it from the Knossos area, but Archanes, Amnisos and Galatas only a few blocks, whereas Tylissos and other sites not at all, although they are closer.⁹³ Ashlar, frescoes and other features also cut across natural boundaries. A Versailles effect, undoubtedly, but why in some regions and not in others?⁹⁴ But, as has been shown by McEnroe for Pseira and

⁸⁸ Hägg 1997. I should prefer to call these ‘estates’ or ‘established houses’ (Driessen 2010).

⁸⁹ Shaw and Shaw 1985.

⁹⁰ Whitelaw 2004 for an update.

⁹¹ ‘This is a term for an administrative hierarchy so well integrated that Tier 2 towns encircle the Tier 1 city at very regular distances; in turn, Tier 3 settlements encircle Tier 2 settlements at regular (and shorter) distances’ (Flannery 1998, 18).

⁹² Driessen 1989.

⁹³ Chlouveraki 2000; Chlouveraki and Lugli 2009.

⁹⁴ Wiener 1983; Bevan 2010.

Gournia and by Cunningham for Palaikastro, Petras and Zakros, even vernacular architecture of proximate sites can show significant differences.⁹⁵ Myrtos-Pyrgos follows central Cretan architectural features so closely that it is impossible to deny some direct symbolic or ideological link. Some buildings at Palaikastro follow central Cretan features, whereas others do not; and this seems a situation encountered in other sites. Clearly, the impact of different imagined communities is at work here. Two other domains where other imperatives than simple economic or spatial proximity factors are at work are the discovery of identical seal impressions in a series of settlements and at Akrotiri on Thera. Even if the clay of all these impressions may prove to be central Cretan, this should not be translated straight away in terms of political domination, as Krzyszkowska has shown:⁹⁶ the ones found at Knossos, for instance, originate at Ayia Triada and not the other way around. Pottery studies likewise show that Knossos (or central Crete since finer distinctions are usually not possible) is usually at the giving end where the fine wares are concerned, with vases sometimes showing up throughout the island. Knossos probably also set the pace where for the imitations that were used alongside locally produced fine wares. But when it comes to household pottery, the variety of local traditions among the workshops is evident at the same time as the interaction, especially between east Cretan settlements,⁹⁷ showing a different network in action. Besides these networks, a ritual landscape may have existed in parallel to, or cutting across, other types of boundaries, as is suggested by view shed analysis. The number of peak sanctuaries diminishes, a development paralleled by a monumentalisation of the surviving ones, many of which are now also linked by the presence of identical ritual formulae in Linear A. This handful of Cretan ritual sites was also linked overseas with the peak sanctuaries on Kythera and perhaps elsewhere.

Monopalatial (LM II–IIIA2)

The LM IB fire destructions wipe out most existing settlement networks but, when the smoke rises, the few reoccupied sites all yield LM II pottery, seemingly produced at Knossos that usually contrasts with modest local fine wares, usually developed from LM IB prototypes. The mortuary domain shows considerable variation with, especially at LM II Knossos, several examples of monumental tombs. Whereas the size of Knossos may have remained rather similar to its Neopalatial predecessor, the size of its satellites dropped considerably. Initially, rather few larger settlements are left on the island, and isolated farms and hamlets are also rare, if not absent. If a network existed, it was certainly badly integrated at the beginning, and the absence of a complex local hierarchy may suggest that Knossos was indeed, for some time, in overall control of the island. This may have not lasted for very long.

In LM IIIA1, Knossos pottery remains the most looked for fine ware as examples from the Viannos area (Psari Forada), Mochlos, Chamalevri, Palaikastro and Chania show, but certain settlements such as Palaikastro regain a certain importance since its pottery shows up at Mochlos, Malia and Chania. The progressive establishment of more settlements on different levels illustrates indeed that within this period the political situation also changed, with a more complex local network depending on secondary centres, a situation that seems

⁹⁵ McEnroe 1990, Cunningham 2001.

⁹⁶ Krzyszkowska 2005.

⁹⁷ Day 1987, 506; 1997, 228; Brogan 2004.

also reflected by the Linear B tablets. Integrating the evidence from both sources — epigraphy and archaeology — is no easy matter and contrasting hypotheses have been presented. In Bennet's opinion, Crete was organised in a series of provinces with a clear hierarchy, whereas I have suggested that the Knossian satellites acted more as local extraction nodes.⁹⁸ In the first hypothesis, only the far east and far west are 'Eteocretan'; in the second, the entire island is, apart from the Knossian satellites.

Postpalatial (LM IIIA2–B)

In any case, after the presumed major destruction of the palace at Knossos in LM IIIA2, a series of regional centres — and especially those that originally functioned as secondary capitals or main satellites — regain a degree of independence resembling more the Protopalatial than the Neopalatial situation. This regional dynamism shows up, for example, in local architectural practices as well as in the three major ceramic wares that are encountered during this phase with Chaniot pottery — both fine wares and stirrup jars — at, for example, Kommos, Knossos, Malia and in south central Crete,⁹⁹ but also at Mochlos and Trapeza Keratokambou. Palaikastro ware is found in the Viannos area (Psari, Tertsia), at Malia, Mochlos, and Petras, and south central Cretan stirrup jars are at least also reaching Chania, Knossos, Malia and some other sites. Inscribed Linear B jars, for example, have been found at Malia, Knossos, Armenoi, Mamelouko and Chania, whereas they are absent from the other regions although they were produced in the W, centre and S of the island. Does this mean that nobody outside this handful of centres could still read or understand the message? It is not easy to recognise particular networks apart from these formed by pottery. Settlement numbers are on the rise, with some sites becoming perhaps even international players such as Chania and Ayia Triada.¹⁰⁰ Cretan settlements are in contact but seem, from then on, to develop largely independently, becoming more concerned with the consolidation of local agricultural resources, pasture and textile production. Within certain settlements, one notices a development towards a more disparate organisation and a ruralisation of the towns: at Malia and Palaikastro, for example, isles of habitation surrounded by open space probably used for gardens and pasture seem to replace a more close-knit urban system. During, and at the end, of the LM IIIB period, settlements are struck by destructions or simply abandoned, and in mature LM IIIB no single centre seems strong enough to establish a wider than local network. This may be one of the reasons why the system collapses almost overnight from the mid-thirteenth century onwards,¹⁰¹ when the traditional settlement pattern breaks down.

Postpalatial (LM IIIC)

One of the major events during the advanced Late Bronze Age is, evidently, the breakdown of international, regional and even local networks with many repercussions. That certain population groups even left the island seems almost certain, and others may well have arrived. Even at Knossos a break in the settlement's history has been noticed — either occurring in late LM IIIB or early IIIC — with a phase of 'urban regeneration'

⁹⁸ Bennet 1987, 1988, 1989; Driessen 2001*b*; now also Driessen and Langohr 2007.

⁹⁹ Day 1997, 227, n. 47.

¹⁰⁰ Kanta 2001, 13.

¹⁰¹ Kanta 2001, 13.

afterwards.¹⁰² At the end of LM IIIB and in earlier IIIC, settlements seem rather small and isolated, without any obvious network or clustering being identifiable. Only a handful of low plain settlements seems to survive including Khania, Kastelli (Pediada) and Knossos. From LM IIIC onwards, however, more defensible sites are looked for, some flanking the coast, showing that maritime contacts — whether insular or off-insular — and agricultural resources continued to play a major role,¹⁰³ but many of these seem short-lived probably regarded as too exposed to maritime threats (Kastri Palaikastrou, Amnisos). Interestingly, some of the inland refuge sites also possess fortified coastal sites — perhaps only seasonally used — but showing a pattern that will become more common during the historical period. Both Nowicki and Hayden have found several such sites.¹⁰⁴ There is now clear evidence for fortified settlements, such as at Kastrokefalo, W of Herakleion.¹⁰⁵ Other inland sites have the character of *acropoleis* but are less difficult of access and it are these that often would form the centre of historical settlements such as Prinias, Dreros, Gortyn, Thronos-Sybrita etc.¹⁰⁶ The cultural homogeneity of the island, however, shown by the pottery and funerary customs, but also by what are now called banqueting practices, suggests that, despite the troubled times, contacts are continued, and for a while it appears that an internal network has become dominant — something perhaps not seen on Crete since Neolithic times.¹⁰⁷ Cretan local elites seem to do largely the same thing, gradually even developing a common system of cult by the end of the period, as shown by D'Agata.¹⁰⁸ Where the settlement pattern is concerned, a concomitant evolution seems likely with certain settlements developing into central places for small regional site clusters, differing in size, as for example Karphi or Vasiliki-Kefala.¹⁰⁹ Again, this may have been a short-lived phenomenon.

Subminoan/Protogeometric and Geometric

At the end of LM IIIC, many sites are again abandoned with only a few remaining in use. Examples include the Kastro at Kavousi, from the beginning of the twelfth century until well into the seventh century BC,¹¹⁰ and Vrokastro. A more dispersed settlement pattern is obvious.¹¹¹ These settlements usually grow into bigger sites gradually during the ninth and eighth centuries, as evidenced for example at Vrokastro.¹¹² Some inland sites continue but many are later re-established on the coast, 'when better access to land, sea, and water resources outweighs the need for security.'¹¹³ Before the eighth century, few habitation clusters exist but they often seem accompanied by burial and cult areas.¹¹⁴ With the re-emergence of international contacts — especially thanks to Phoenician and North Syrian

¹⁰² Hatzaki 2005; Warren 2005.

¹⁰³ Hayden 2004, 236.

¹⁰⁴ Hayden 2004, 240, fig. 17.7; Nowicki 2000.

¹⁰⁵ Kanta 2001, 15.

¹⁰⁶ Kanta 2001, 17.

¹⁰⁷ D'Agata 2001, 346.

¹⁰⁸ D'Agata 2001, 348.

¹⁰⁹ Nowicki 1999, 164.

¹¹⁰ Mook 2004, 163.

¹¹¹ Hayden 2004, 240.

¹¹² Hayden 2004, 244.

¹¹³ Hayden 2004, 244.

¹¹⁴ Sjögren 2003, 89.

commercial endeavours — regional and local networks seem to resume also.¹¹⁵ It is not impossible that these initially followed broad tribal divisions — Achaeans, Eteocretans, Kydonians, Dorians and Pelasgoi — as suggested by the ethnic references in Homer (*Od.* 19.172-7) and Herodotos (7.169-71).¹¹⁶

Discussion: alternative trajectories in Cyprus and Crete

Turning to the central theme of this volume, to what extent can we compare the nature and different trajectories of development of settlement networks in two areas, so different in setting and structure, where the local geographical circumstances play so large a role? Are there other underlying issues or broad patterns that affected the different trajectories of development in our two islands?

The networks of interaction that we have outlined on Cyprus and Crete take different forms: social, economic, ideological and political. Social patterns of kinship and intermarriage, operated within and between local ‘natural’ communities, and are most in evidence in the third and early second millennia in both islands. This is closely linked to notions of identity, if not ethnicity, determining the degree and nature of relationships. Economic networks operated either informally or more formally. The latter was the case especially within or between more complex vertically integrated social formations with multiple, if not competing, polities. In these systems some people at least had a broader world view and were participants in a conceptual ‘imagined’ community. While some imagined communities were inward looking, serving to reinforce identity within a particular system, others provided an opportunity for networks to cut across political or economic boundaries, linking people in different ways.

The limited interaction in the mid-third millennium in Cyprus between two different but not necessarily conflicting ethnic groups can be contrasted with the greater integration or uniformity across much of the island in the succeeding periods. These small-scale, socially ordered exchange networks of the earlier Bronze Age may in turn be contrasted with the more formal, centrally controlled production and distribution of the developed Late Bronze Age systems, when hierarchical relationships between settlements of different types and between individuals of different status came to the fore. This can best be seen as a process of Secondary State Formation, where developments in the second millennium were strongly influenced by increasing contacts with the outside world. This development took place considerably later in Cyprus than in Crete, where internal rather than external factors may have played a far greater role. This may be due in part to the way in which Cretans were linked from an early period into complex and long-distance exchange networks, as well as to internal geographical factors and local resources.

Topography and access

One of the main differences, apart from a fundamental dissimilarity in the presence of natural resources, is the fact that, although Cyprus was never closed off from the outside world, it was in many periods relatively a more insulated and isolated world than Crete ever was. The notion that Crete is an island in fact only applies to the interior. The coastal sites seem always to have participated in (at least) a triple network: one *coastal* with other

¹¹⁵ Deger-Jalkotzy 2002.

¹¹⁶ Driessen 1999, 89–90.

Cretan harbour sites or near neighbours on other islands that were as easily reached; one *overland*, which is the network further discussed in this paper; and one *extra-insular* linking Crete with southern Anatolia, Cyprus and the Levant, to the Cyclades and the Greek mainland, to Kythera and the Peloponnese, and even to Egypt. The coastal interregional Cretan connections seem, however, always to have been the most important (FIG. 5.9).

In discussing developments in the southern Levant, Harrison and Savage argue that the highly fragmented geography of the area was not conducive to the formation of large-scale centralised states and bureaucracies, but was better ideally suited to the development of heterarchical relationships.¹¹⁷ Can the different topographic structures of our two islands provide examples of, or a test for, this general model?

The structure of the physical landscapes of Cyprus can be seen as operating in the counterpoised poles of access and restriction. There were few barriers to movement and interaction across the central plain or along the N and S coasts. Movement between the centre and the N had, however to be channelled through or around the northern, Kyrenia range, while the S coast, and more especially the western half of the coast (from Limassol to Paphos and beyond), was relatively isolated from the rest of the island. The Karpass is also often seen as relatively ‘remote’ from developments in the central plain. However none of these barriers to, or limitations on, interaction was insurmountable, and seldom can be seen to have limited the general relationships within the island. At all times there was a degree of commonality indicative of some degree of generalised interaction. During some periods stronger cultural imperatives overcame any ‘tyranny of distance’ (for example with the homogeneous *Philia* system linking sites into a single cohesive network). At other times distance can be seen to have directly influenced the degree of interaction (for example during the Middle Bronze Age). When more formal polities developed these may have mapped strongly onto geographically discrete regions.

As noted above, three forms of network — coastal, inland and external — are a common feature in Crete. Although the coastal links seem always to have been the strongest, it would be a mistake to downplay one of these three to the detriment of the others. This is evidently partly a result of Crete’s particular topographical condition where natural boundaries often restrict overland movement, so that very large parts of the island remain basically untouched by outside events — *islands of the interior*. A hypothetical cost path analysis which reconstructs inland routes between central places illustrates this point (FIG. 5.10).

Resources

The distribution of resources played a key part in the structure and nature of networks of relationship, but once again this varied in relation to settlement patterns, and political and economic imperatives, and was always strongly influenced by the available technology. Patterns of rainfall and soil quality placed some limits on settlement size and location, so that poorer regions never had the potential to become focal points or centres of local or inter-regional relationships: they were always on the periphery. Improved agricultural technology (such as the introduction of oxen and the plough to Cyprus) allowed an increased density of population as well as the spread into otherwise unproductive areas, with obvious consequences for settlement pattern and social interaction on both islands.

¹¹⁷ Harrison and Savage 2003.

The absence of specific natural resources led Cretans to look to the outside world since the earliest Neolithic. Internally, there was no strong effect such as that seen in Cyprus. Cretan networks often, therefore, must be seen in the broader context, where external relationships may even have been as strong as — if not stronger than — those linking some coastal sites with their hinterland or with one another¹¹⁸ — for example the links between Poros and Mochlos with Milos for the obsidian trade.¹¹⁹

In contrast, the distribution of copper from ore-bodies in the fringes of the Troodos was the key factor in Bronze Age interactions on Cyprus, although their particular configuration was always determined by broader socio-political systems and the historically contingent factors. This is most clearly seen in the contrast between the less formal, kin-based interactions and distribution networks of the earlier Bronze Age and the more formal city-based large-scale production systems of the Late Bronze Age polities.

Technological transformations

As already noted, resources are largely determined by technology, which to a large extent affects the scale and distribution of population and the relationships between communities. In Cyprus this is best seen in the alternative systems of the copper-less, cattle-and-plough-less Chalcolithic and those of the Early Bronze Age in Cyprus. But it is also a factor in later developments, where the incentives for changed systems of political and economic interaction may have been determined by better ships; more efficient copper-processing techniques; the harnessing of land-transport to transfer goods such as copper from the mines to secondary production centres; and the adoption of technologies of administration (writing) and social coercion (symbols). In Crete, the most successful areas are clearly those that combine advantages of the different networks with the existence of good agricultural land. It is these that also show the introduction of foreign techniques first, as is the case with ceramic, architectural, sphragistic and administrative transformations.

Minds and mines

Interwoven with these more pragmatic factors, we must recognise the ways in which people perceived or constructed both their physical environment and their associations with other individuals and communities resides in the cognitive realm. The variations or the similarities of material goods between sites and regions played an important role in symbolising the way people interacted with one another. These are simultaneously the way in which people mediated interconnections and the way in which we can perceive them. The general shared concepts and technologies which characterise archaeological (perhaps also social) cultures were at times reinforced by specific symbols of identity and uniformity. In the more complex systems of Late Bronze Age Cyprus, symbolic markers can be seen to have been overtly used to construct hierarchical networks of association. At all levels, from personal to polity this involved formally defined roles and relationships, emphasising formal economic and political dimensions supporting patterns of subservience or domination and the legitimacy of the particular sets of relationships between classes of people as well as between settlement types.

¹¹⁸ Cf. Broodbank's (1993, 2000) proximal point analysis, linking Cycladic settlements on different islands over stretches of sea.

¹¹⁹ Carter 2004, 296.

On Crete, landscape bound together spaces, places and representations. Networks, or rather imagined communities, were produced or rather constructed by human intention, leaving a lot of dynamism rather than permanence in human interrelationships. Cross-cutting allegiances, groups rather than individuals used material culture ‘to construct old and new identities, to represent power, and to affirm social relations’.¹²⁰ The erratic distribution patterns of material culture sometimes connecting units locally, regionally or interregional and sometimes not, seem to show different networks or imaginary communities at work. Distinguishing within a continuum of potential networks as suggested by the material record is not yet possible, especially since later historical sources abound in different types of network that one may assume to have existed in the Bronze Age. The different *proxeny* relationships a Classical and Hellenistic city entertained is an example, relations that were personal in origin but institutionalised later but that leave, apart from inscriptions, no traces in the field. This habit surely developed out of the *xenia* custom, the guest-host relationships involving gift exchange, well attested in the epics and undoubtedly going back to the Bronze Age.¹²¹ That such interactions also played a role during the Cretan Bronze Age may confidently be assumed. A second example involves Hellenistic Crete and the treaties and federations its cities concluded with various Cretan poleis, to the detriment of others.¹²² In doing so, they did what all Cretan towns had been doing for a long period, leapfrogging stretches of sea, high mountains and deep gorges, in order to isolate adversaries or attack them from the back. Such alliances can rarely be substantiated by other material data, but nobody would doubt the impact of such a network — certainly not the Lyktians! Yet another network may have resulted from traditional transhumance routes, linking important pastoral centres with their pasture zones.¹²³ This short list of *non-traceable networks* can easily be extended and it would be naïve not to assume analogous networks during the Bronze Age.

In conclusion

This brief comparison raises some fundamental questions in archaeological explanation. This includes the role of the environment in structuring behaviour: how did the internal and external geography affect the nature of inter-site and inter-regional networks? At some times short-term, specific and historically contingent circumstances provide satisfactory explanations for events or developments. But we need also to consider the extent to which we can accept long-lasting, embedded cultural attitudes and dispositions in different areas as powerful factors in shaping the different societies that inhabited them.

¹²⁰ Isbell 2000, 249.

¹²¹ We owe this parallel to F. Gaignerot-Driessen. This kind of relation could, for example, be reflected by the presence of banquet halls in Minoan buildings. For Homeric gift-exchange, see Jones 1999, with refs.; for proxeny, see Knoepfler 2001. See also Guizzi 1999 on *isopoliteia*, treaties granting reciprocal privileges to citizens of two poleis.

¹²² Chaniotis 1996.

¹²³ On the importance of Cretan pastoralism, see the discussion and references in Chaniotis 1999.

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Captions

FIG. 1. Schematic diagrams of networks in Cyprus: a) Middle Chalcolithic local clusters of settlements with lower level relationships with more distant regions; b) Late Chalcolithic, a less integrated system with some external connections; c) Philia Bronze Age tightly knit affiliation within and between regions and economic links to southern Anatolia; d) Philia Bronze Age and final Chalcolithic groups forming two parallel networks.

FIG. 2. Schematic diagrams of networks in Cyprus: a) Early and Middle Bronze Age varied degree of relationship with strongest links between nearest neighbours; b) later Middle Cypriot restructuring of the settlement system with the development of larger centres; c) development of settlement hierarchy in Late Cypriot I, with coastal centres controlling territories to facilitate the flow of copper; d) Late Cypriot II series of local political networks, with urban centres controlling resources in each area.

FIG. 3. Close proximity analysis, based on similarity of pottery decoration, shows networks of relationship between and within Middle Bronze Age sites in Cyprus. This measure of social distance maps onto geographical distance. (After Frankel 1974a, 135, fig. 16; 1974b, 203, fig 30.)

FIG. 4. Schematic diagrams of networks in Cyprus: a) Late Cypriot II series of local political networks, with urban centres controlling resources in each area; b) alternative model with Enkomi as a paramount centre with other subordinate cities controlling local networks; c) contraction of networks as a consequence of the economic collapse in the twelfth century; d) distribution of different types of Iron Age sanctuary cutting across political or ethnic boundaries.

FIG. 5. Local networks in Cyprus during the Geometric and Classical Periods: a) location of sites associated with the Kingdom of Tamassos (after Given and Knapp 2003, 276, fig. 6.2); b) model of networks linking local sites in a settlement hierarchy (after Given and Knapp 2003, 317, fig. 7.2).

FIG. 6. Distribution of Prepalatial wares (Pyrgos ware, Ayos Onoufrios ware and Vasiliki ware) in Crete (after Betancourt 1985, *passim*) (drawn by P. Hacigüzeller).

FIG. 7. Line of sight analysis between Protopalatial peak sanctuaries in Crete forming distinct regional networks (courtesy S. Soetens).

FIG. 8. Hypothetical Protopalatial territories in Crete (courtesy S. Soetens, K. Vansteenhuyse).

FIG. 9. Coastal relationships in Crete based on cost analysis (courtesy S. Soetens).

FIG. 10. Hypothetical overland relationships and roads in Crete based on cost analysis (courtesy S. Soetens).

