

9. Comparative Settlement Patterns during the Bronze Age in the Northeastern Peloponnesos, Greece

James C. Wright

INTRODUCTION

Despite a long interest in collecting data on prehistoric site location on the mainland of Greece, there has been a dearth of analytical and synoptic research on the distribution of these remains. Since Blegen's overview in 1928 there has been very little comparative study of changes in settlement among regions (Haley and Blegen 1928). Bintliff's doctoral dissertation (1977) *Natural Environment and Human Settlement in Prehistoric Greece* is a notable exception. Although the primary source for such study – the *Gazetteer and Atlas of Mycenaean Sites* by Hope Simpson and Dickinson (1979) – has been around since its inception nearly four decades ago (Hope Simpson 1965), there is little more on the subject for the entire Bronze Age than Dickinson's article of two decades ago, revisiting the core problems of settlement distribution in the Peloponnesos (Dickinson 1982; see McDonald and Hope Simpson 1972; Rutter 1993b; Shelmerdine 1997; Bennet and Galaty 1997).

Bintliff (1977) had noted an apparent disparity in distribution between the evidence from excavation and from survey (*i.e.* many more sites collected through survey), and this spurred Dickinson's re-evaluation. Although Dickinson (1982: 129) allowed that these distributions – and presumably the disparities among them – would almost certainly be revised as a result of increased survey fieldwork and better reckoning of site size, he did not believe that the numbers produced by extensive surveying were so inaccurate as to be in danger of being overturned by intensive survey. Thus, he argued forcefully that the variation in the density and even in the size of settlements observable from the evidence assembled in the *Gazetteer* reflected a true pattern (1982: 131).

The problem with this point of view is that the comparisons were primarily being made according to a coarse temporal scale, punctuated only by the distinctions of Early, Middle and Late Bronze Ages (Fig.9.1), and, except in a few instances, involved very broad geographical units, largely reflecting modern political (prefecture) boundaries. Dickinson continued the tradition, begun by Blegen, of

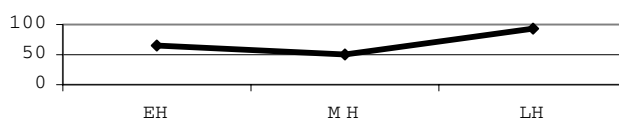


Figure 9.1 Overall site distribution in the northeastern Peloponnesos (n=104).

thinking about prehistoric settlement in the Peloponnesos in imprecise, static, and stage-defined terms. This is illustrated by his assessment of the mainland during the Middle Bronze Age as 'poor and backward in comparison with the Cycladic and Cretan civilisations,' with the conditions of settlement being nothing more than 'farming villages' (1982: 134). Only with the late phase of this period did he see emerging the 'origins of Mycenaean civilisation'.

In the intervening 20 years the new information available from excavation and survey has made the problem of analysis much more complicated (*e.g.* Morgan 1999: 347–67). We are now more critical of interpretations comparing the major subdivisions of the Bronze Age across broadly defined geographic boundaries. Curiously, however, although there has been much more work on this problem for the Early Bronze Age (Forsén 1992; Maran 1998), there is a continuing reluctance to do the same for the Middle and Late Bronze Ages. Thus, despite an increasingly sophisticated and detailed understanding of the relative stratigraphic correlations during the Middle Helladic and early Mycenaean periods, and a richly documented picture of sites of activity and settlement on the mainland and among the Aegean islands, there has been no detailed accounting of settlement distribution for the Middle and Late Bronze Ages that explores the dynamic processes of settlement, landuse, and interaction of regions and sub-regions of the geographically fragmented Peloponnesos. Instead only generalized discussions, such as those of Kilian (1987; 1988a; 1988b; 1994), Cavanagh and Mee (1998), Barber (1992), Shelmerdine (1997), Dabney and Wright (1990), Wright (1995), and Dickinson (1999) have been published.

In a 21st-century collection of essays such as this, where scholars working in such broad traditions as that of American, Roman, British, Greek, Cypriot, and Near Eastern archaeology are conferring, it is readily apparent that it is long past the time that those of us working in the Aegean adjust our focus from one of ‘Mediterranean myopia’ as Blanton (2001) has termed it, to one of *evriopa* (s.v. εὐρύπια, the term used by Homer) – a term that Strabo, Braudel, and the European Union would approve for its multiple connotations of the vision of far-seeing Zeus and of supra-national perspective. Surely the purpose of comparing data from surveys is to understand better the dynamic pathways of different civilizations, cultures, and communities. And, despite a post-modern recognition of the difficulty of comparing them to each other, or comparing them against an abstracted background of generalizing theories and models like state formation, a broad framework for the prehistory of the Aegean is long past due (with appropriate nods of respect to Renfrew’s seminal *The Emergence of Civilisation* [1972] and Broodbank’s recent *An Island Archaeology of the Cyclades* [2000]). After all, the models for fieldwork and interpretation have been around since *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization* (Sanders *et al.* 1979) and *Ancient Mesoamerica: A Comparison of Change in Three Regions* (Blanton *et al.* 1981).

Fundamental to any such examination is an inspection of the overall trends in human activity within any given region. I use the term ‘human activity’ for two reasons: it comprehends everything from hunting and foraging to highly nucleated urban formations; and it suggests that, at a general and initial level of investigation, it is not necessary to qualify the data, for there is room and time for that after rough models have been constructed for further, closer, even myopic investigation. Thus, the purpose of this paper is to see what kind of picture we can construct with the information gathered unsystematically over the course of the last century and a half, and then to compare it to the more systematically and intensively gathered data from surveys in order to see if and how the picture is different. Ultimately, I hope to propose ways for further examination, and to point to specific research strategies that might fill lacunae, as well as to wonder if the patterns observed in our setting are similar at other times within our own study region, as well as beyond it to other places in the world. Specifically, I will show in my conclusions that patterns emerge which support three different models, which I will term *Central Place*, *Dependency*, and *Periphery*.

With this scope in mind, several considerations must be taken into account. Paramount are the scales of examination in terms of space and time; then considerations of size (both absolute and rank size) and function should come into play. Also, it will be necessary to keep in mind the nature of the evidence – disparities in the quality and quantity of information available, limitations due to the incomparability of methods of collection, the inadequacy

of evidence for certain kinds of questions. But none of these should limit the scope for, if nothing else, the questions that can be asked on the basis of our knowledge of basic human needs and of fundamental ways of acting in the landscape will, in and of themselves, point in directions of value.

SPACE

The problem of defining regions for study and determining meaningful boundaries of human activities and habitation is, of course, one of the central difficulties of regional studies (Steward 1950; Adams 1981; Bintliff 1977; Plog *et al.* 1978; Sanders *et al.* 1979; Sutton 1994). Even though the boundaries of communities change according to different economic and political conditions and the flux of social relations (Sutton 1988; 1994; 1999; 2000a; 2000b), it is well worth the risk of looking at data through a grid of smaller units that have some potential for catching local-scale activities (see Lukerman 1972).

In the Aegean, now that we have finely-grained information from intensive surveys, we must use those results to provide a more subtly graded and richly textured picture of settlement than we have traditionally done. In this manner, we can better take account of distinctions among different land-forms and better compare similar ones from one area to another, while also being sensitive to local responses to contact and exchange with external agencies. For example, while it is obvious that there are substantive geographical differences between the Corinthia and Argolis, and therefore that it is not especially meaningful to talk about the northeast Peloponnese as a whole (Figure 9.2), it is not immediately apparent what the division between these two areas means. What is more apparent is that, in the Corinthia, the zone along the Gulf of Corinth is different from the interior, because the settlement patterns throughout the Bronze Age are not only different in these two areas, but sites also cluster together spatially (Morgan 1999: 347–67). Such an observation spurs other questions, so that an examination of this localization of sites is paired with geomorphological observations. More specifically, the sites on the Gulf’s coast and on the Isthmus are situated on ancient marine terraces of soft limestone with abundant aquifers that discharge as springs and which provide much arable land – in marked contrast to the upland valleys, which are some 300+ m higher, are characterized by colluvial deposits, and are part of the ecology of the mountainous interior (Freitag 1973; Higgins and Higgins 1996).

The Argolid also is not meaningfully viewed as a whole (Figure 9.2). Instead, it breaks down into several regions (Jameson *et al.* 1994: 13–56). These are: (1) the great alluvial plan around the Gulf of Argos and the mountainous periphery which drains into it (further subdivided by catchments: Lehmann 1937; Zangger 1993); (2) the valleys to the southeast that include the settlements of Asine and

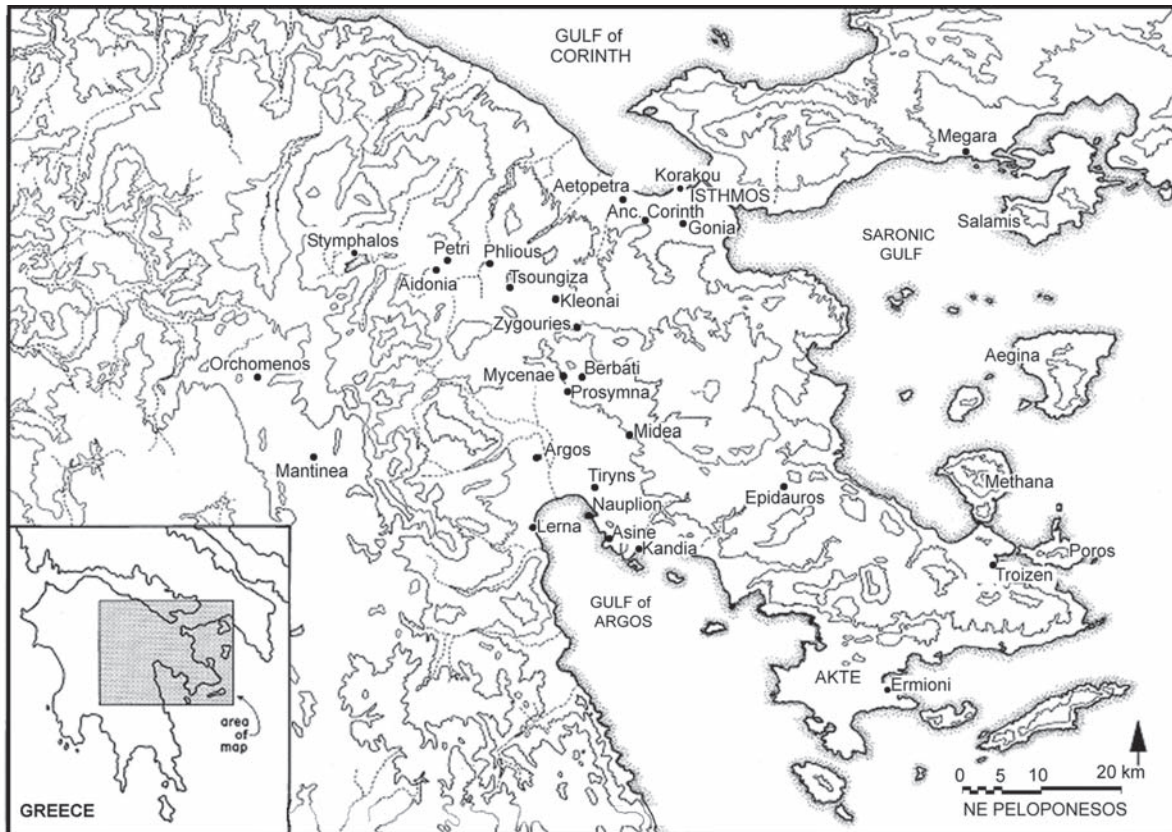


Figure 9.2 Map of the northeastern Peloponnese (after drawing by Julia Pfaff).

Kandia; (3) the region further east known as the Epidauria, which has harborage on the Saronic Gulf; (4) the peninsular island-landscape of Methana-Troizen-Poros; and (5) the Akte, or southern Argolid, separated from the rest by the massif of Didyma and extending as a peninsula out into the Aegean Sea.

All of these subdivisions (and others not discussed here) are amenable to analysis in terms of their potential for supporting communities. Fortunately, a number of them have been subjected to systematic intensive surveys, and there is much information available with which to begin this analysis.

TIME

If it is useful to argue that the lens used for analyzing spatial distributions needs to be focused more on localities, it is equally pertinent to suggest that we coordinate the evidence from our highly refined ceramic typologies with absolute chronological reckonings. The need for this is apparent merely by observing that our customary tripartite system of division is very much a relict of the culture-historical approach to Aegean prehistory which has accustomed us to think in terms of the largely meaningless stages 'Early', 'Middle', and 'Late' – even though we know that a more dynamic and process-oriented framework is available. Thus we need to work within temporal units

that capture shorter segments of time, in order to visualize better the variable tempos and modes of sociopolitical and political economic change. For example, the question today is not one of defining the culture of the 'Middle Helladics' (as Caskey [1960] referred to them), or in arguing that they were poor (as Dickinson [1982] would have it), but instead of assessing the differential local and regional dynamics that transpired throughout the second millennium B.C. – a period that witnessed multiple and differential episodes of cultural formation, consolidation and collapse.

From the perspective of method it is clearly misleading to construct maps or charts of site distribution merely on the basis of our nomenclature, since it is heavily biased towards the recognition of the most diagnostic ceramics (Rutter 1983). This is evident by looking at a table that coordinates absolute dates with ceramically defined subdivisions and shows how the recognition of ceramic styles creates classificatory phases of highly varying lengths of time in absolute terms (Table 9.1). Any presentation of these data in visual form is highly distorted, since the phases are incommensurate; thus, counts of sites for EH II representing a span of about 450 years are represented as being of the same scale as the count for MH III measured at 75 years.

This is a problem the Aegean shares with other archaeologically investigated areas of the world, and it is a necessary artifact of the culture-historical approach which

Phase	EH I– EH II	EH II– EH III	EH III– MH I	MH I– MH II	MH II– MH III	MH III– LH I	LH I– LH II	LH II– LH IIIA	LH III A– LH IIIB	LH IIIB– LH IIIC	LH IIIC– SubMyc/PG
HI Dates B.C. (Manning 1995)	3100– 2650	2650– 2200	2200– 2000	2000– 1900	1900– 1750?	1750?– 1675	1675– 1600	1600– 1435	1435– 1360	1360– 1200	1200– 1065
Range	450	450	200	100?	150?	75	75	165	75	160	135
LO Dates B.C. (Warren and Hankey 1989)	3100– 2650	2650– 2200	2200– 2000	2000– 1850?	1850?– 1700?	1700?– 1600?	1600?– 1500?	1500?– 1390?	1390– 1300	1300– 1200	1200– 1065
Range	450	450	200	150?	150?	100?	100?	110?	90	100	135

Table 9.1 Aegean Bronze Age phase designations and absolute dates, after Manning (1995) (high ^{14}C chronology) and, with adjustments, after Warren and Hankey (1989). I follow Wiener (1998) in dating the end of LH IIIA to c. 1300 B.C.

defined phases by assemblages of traits. By continuing such a nominalist approach to the study of the Bronze Age, however, we mask the problems inherent in studying the general and specific trajectories of cultural development in our region. Notwithstanding the difficulties of identifying surface material, researchers conducting intensive surveys are often reluctant to make chronological assessments more refined than Early, Middle and Late Bronze, as in the Methana survey (Mee and Forbes 1997). The problem is not confined to this instance, but creeps into the assessments of many modern researchers, in large part because there are two conflicting purposes at work: a traditional system of classification and one more functionally oriented and interpretative. Thus Rutter comments:

In general, absolute dates for the Aegean Stone and Bronze Ages are not yet very reliable and many different sets of dates are often in use for one and the same phase or period. A major debate has been raging since 1987 over the absolute date of the great volcanic explosion of the island of Thera... early in the Late Bronze Age. As a result, absolute dates within the first two-thirds of the second millennium B.C. (ca. 2000–1350 B.C.) are presently in an unusually active state of flux. *It is therefore always best to describe an archaeological assemblage in terms of a relative chronological label... rather than in terms of its supposed duration in calendar years B.C.* (Rutter 2002; emphasis added).

Why should it be thought preferable to speak in relative terms? In my view, such a language of archaeology denies the volatility of human activity, collapsing long-term processes into a few words, distending rapid developments into arcane terminology. Archaeology studies the historically contingent phenomenon of culture; it is not an abstract and scientifically observable process like biological evolution, where notions of situated time are irrelevant (although not notions of process; Dunnell 1980).

Associated with this issue of developing meaningful instruments of temporal measurement is the problem of contemporaneity. This term was coined by Fred Plog in the 1970s and has been the subject of discussion since (Plog 1973; Schacht 1984; Dewar 1991; 1994; Kintigh 1994; Pollock 1999: 63). The counting of numbers of

sites by period is complicated by the observation that, while some sites are occupied for different intervals of time, simply counting the totals for each subjectively defined period creates a completely false and inflated number of occupations, since for any given period some sites will (a) originate or (b) be abandoned during the period, or (c) they will originate and be abandoned entirely within it. This will be especially true for periods of long duration, and simple counts of numbers for such phases compared to others that are temporally very short will woefully distort the picture. For example, a site occupied for only a part of the 450 years of EH II is weighed equally with one that was occupied throughout the entire phase and into the next phase of EH III.

Dewar (1991) has dealt with this problem by constructing a program based on formulae for the average number of sites that originate per year and the average number that are abandoned per year. In order to do this, however, it is necessary to count the number of sites according to the following four types:

- sites occupied in the previous and the current phase;
- sites occupied in the previous, the current and the next phase;
- sites occupied in the current and the next phase;
- sites occupied only during the current phase.

It is also necessary to know the number of years for the phase in question. In this study, Dewar's formula is applied using both the high and low absolute chronological reckonings for the Aegean (Warren and Hankey 1989; Manning 1995; Wiener 1998), in part to test the importance of the difference between them. In the graphs in this paper, the 'corrected' numbers of sites per period ('LO' representing the calculations based on Warren and Hankey's absolute chronology [and adjusted by Wiener 1998] and 'HI' based on those of Manning) are plotted against the raw numbers of sites counted per period.

Kintigh (1994) offered an alternative for calculating site numbers, and I did test some of the data according to his formulae, but I am not employing the results, which seem unsuitable in many cases (negative values, highly depressed numbers in some instances and wildly high numbers in others). One of the problems Kintigh correctly examines is that of extremely long periods and the assum-

	Corinthia	Argolis	Lakonia	Messenia
Total Sites	48	50	90	190*
Excavated	15	19	8+	48
Major Excavated Sites	14	13	4	9–11

Table 9.2 Known sites in regions of the Peloponnesos. (*McDonald and Hope Simpson recognize 332 prehistoric sites in the broadly defined area of the Minnesota Messenia Survey and I have adjusted this number by comparing it to the later record of the Gazetteer (Hope Simpson and Dickinson 1979) and the more recent work of PRAP (2002), which is available online at <http://river.blg.uc.edu/prap/PRAP.html>).

ptions that Dewar makes about occupations within them. There seems no suitable mathematical resolution for this problem, since it is primarily one stemming from the fieldworkers' inability to distinguish shorter intervals. As noted below, however, in the case of intensive surveying, where careful attention is paid (e.g. the Argolid Exploration Project), a much more refined analysis is attempted.

Additionally, it is possible to simulate the total settled area per period using Dewar's program (Pollock 1999: 64–65, fig. 3.12). For each period being investigated the sum of the area of the sites that fit into the four above-listed categories is substituted for the actual number of sites. The algorithm then simulates the total area occupied per period, which, when compared to the total area of all the sites for the phase, invariably is smaller. I will not attempt this analysis here because it is beyond the scope of this paper. In fact it is at this point unlikely that a study of the areas of settlements can be confidently conducted in the Aegean because of the many intractable problems with estimating site size (see below).

SIZE

Documentation of sites in the Aegean is plagued by the problem of measuring the size of sites. This seems to me a fourfold problem. It is an historical by-product of the simplistic assumption that virtually any artifact scatter represented a settlement or a tomb, the details of which would only be known through excavation. Traditionally, it is a problem of a lack of interest in calculating site size that accompanied the extensive documentation of sites. But above all are the problems of visibility and of multiple periods of occupation. Many sites are overgrown by garrigue, maquis and other vegetation, and thus extremely hard to document. Others have been occupied off and on for as much as 8,000 years, and it is usually unclear what the actual size was for any given period (e.g. Jameson *et al.* 1994: 417; Cherry and Davis 2001). I mention this issue here, because rank-size estimates are one of the critical initial steps of analysis necessary before more sophisticated levels of distributional analyses can be conducted (Hodder and Orton 1976: 69–73).

PROBLEMS WITH THE RECORD

Before proceeding I want to return to Dickinson's (1982) point about the disparity between excavated sites and those known through surface observation. Table 9.2 illustrates that there has been extensive excavation and surface collection throughout the Peloponnesos over the past 150 years. Clearly, the general distributions do not accurately reflect the record of prehistoric settlement and utilization of the different landscapes. These profiles may be misleading, for the simple reason that the core areas have received more attention through excavation and recording of surface finds than others. But, as Rutter (1983) cautioned, it may be exacerbated by variability in the recognition of diagnostic artifacts (such as MH pottery), and recent analysis by Bintliff *et al.* (1999) has claimed the problem is even more deleterious because of an imputed large-scale loss of the surface record. Cherry and Davis (2001) doubt that this problem exists; at least their work in the Nemea Valley indicates otherwise (see also Davis, Chapter 3, this volume). But that the issue must be taken seriously is evident when we recognize the relative dearth of intensive survey around core areas of habitation and our general ignorance of the hinterlands of these areas (see discussion below, pp. 127–28).

There is, then, a very real likelihood that the extensively gathered information is heavily biased. Lurking behind this doubt is the possibility that major sites have gone unnoticed or are not sufficiently appreciated. Thus in the Phliasian Valley, the discovery of major sites at Aidonia, Petri and Agia Irini are transforming our appreciation of that hitherto isolated rural setting. At Dimini Dr. V. Sismani-Adrimi has been uncovering over the last five years an entire Mycenaean palace complex. Therefore the data obtained from the intensive surveys in the Peloponnesos may be critical for assessing how much error the biased information from the 'core' areas creates and how much it distorts the record. Some work on this has already taken place. Bintliff and Snodgrass (1985: 135–36) claimed that the intensive survey of their region in Boeotia returned on the order of 50 times the number of sites than had been discovered in the extensive survey of Messenia by McDonald and Hope Simpson (1972). Of course, this comparison is specious if it turns out that the regions of Boeotia and Messenia are non-comparable, because of differences in climate, pedology, and hydrology, not to mention differing demographic and historic contingencies. These objections

notwithstanding, subsequent research by the Pylos Regional Archaeological Project [PRAP] has confirmed the earlier Messenian pattern (Davis *et al.* 1997; 2002). Rutter (1993b) published a comparative chart that showed the differences in site density (sites/sq. km) between extensive and intensive surveys in Greece to vary from 10 to 100 times (see also Bintliff 1985; Cavanagh 1995; Cherry and Davis 2001); but this needs to be appreciated in terms of the relative number of sites by size, since the conclusions we might draw will be fundamentally different if the increase occurs among sites of the lower, middle or upper orders of magnitude. Therefore, for a reasonable comparative assessment of the growth and changing degree of socio-political integration among different areas, it is critically important to determine the difference in magnitude. It is no surprise that a primary result of intensive survey is an increase in the number of small sites, but of more importance will be determining the relative importance of such sites in periods prior to the emergence of centralized polities (see Jameson *et al.* 1994) and the nature of their relationship as such polities appear.

In the analysis which follows two different sets of data are examined. I begin with the extensively gathered record, which is drawn from the *Gazetteer* (Hope Simpson and Dickinson 1979); this I have updated from the annual reports in the *Chronique des fouilles* of the *Bulletin de correspondance hellénique* and the *Archaeological Reports* in the *Journal of Hellenic Studies*, together with Morgan's (1999) study of the Isthmia. In tabulating the data for insertion into Dewar's simulation, I have admitted all reported sites, whether mortuary or settlement or simple scatters, but I have not double-counted known settlements and their cemeteries.

I then consider the evidence from the intensive surveys, where again I recorded all sites published in the inventories. Here, however, I also introduce a second set of calculations, since efforts were rather systematically made to measure the size of sites, and the numbers of sherds and other artifacts were counted. Thus I include in these calculations only those sites whose area was measured and which have at least 50 sherds; the remainder is treated as scatters. In this regard, I do not vary much with the original analysts of the material. It is also necessary to say a word about the temporal divisions I employ. Aegeanists may wonder how I can count sites according to the division of the Middle Bronze Age into the phases MH I, II, III, and may likewise query why LH I and LH II are lumped together. I am able to distinguish these because recent study by Lambropoulou (1991), Nordquist (1987), Dietz (1991), and Zerner (1978; 1986; 1988; 1993) has re-evaluated the pottery from most of the primary excavated sites throughout this region. LH I and LH II are combined, because many sites are recorded as having pottery of MH-LH I or of LH II and LH I-II; I have assumed that in the first case the designation MH could only refer to MH III, since otherwise the range would not be given into LH I. Confirmation of this procedure is found in that in almost

every instance where I found pottery recorded as being of the range MH-LH I, so too was pottery recorded as LH I-II.

THE EXTENSIVELY GATHERED DATA FROM THE NORTHEASTERN PELOPONNESOS

The charts of Figures 9.3–9 show the raw and simulated values of site distributions throughout the sub-phases for the Early, Middle and Late Bronze Ages in the Corinthia and the Argolid. Figures 9.3 and 9.4 graph the distributions according to the borders of the modern prefectures. Although the raw total numbers of sites vary only slightly and the curves are similar, the simulated results are significantly different. But the results are probably skewed, since both represent current political boundaries that combine widely different landforms that traditionally have had different economic, political and social orientations (as noted above, pp. 115–16). It is worthwhile, then, to reconfigure this comparison to represent notional core areas of each region. For the Corinthia, I do this by subtracting the sites found in the upland valleys, leaving only the coastal margins and the Isthmus (Figure 9.5). For the Argolid, I subtract the sites from the Methana-Troizen-Poros area and those from the Southern Argolid (Figure 9.6) – counting the area from Asine to Epidauros as a part of the core.

The differences are dramatic. The Corinthia was actively settled during the EH II period and then dramatically depopulated, with only a few sites enduring through the early stages of the Middle Bronze Age. In the Argolid, by contrast, the drop-off in settlement after EH II was apparently more gradual and it left a larger base of sites that increased in the middle phase of the Middle Helladic; site numbers then took off sharply at its end and during the early phases of the Late Helladic, steadily increasing to a peak at the end of LH IIIA and beginning of LH IIIB, until finally dropping off during LH IIIB and IIIC. In the Corinthia, the Middle Helladic may be characterized as a low plateau of sites that – depending on whether one follows the high or low chronology – either steps up or dips during LH I-II and then steps up dramatically during LH IIIA and IIIB. Both graphs show significantly different curves between those of the raw number of sites and of the simulated calculations. Of course, we do not know even if these reconfigured distributions relate to the state of affairs during the Bronze Age, but an obvious notion to be pursued is that these differences may point to the apparent absence of a central palace settlement during the Late Bronze Age in the Corinthia, in contrast to the presence of several palatial centers in the Argive plain – a matter that has received much attention in scholarship (Blegen 1928: 221; Bintliff 1977: 346–47; Vermeule 1987; Wright 1990; Davis 1988; Morgan 1999: 352–53). I think it also important to explore if the stepwise progression in the Corinthian slope may reflect the extent to which settlement

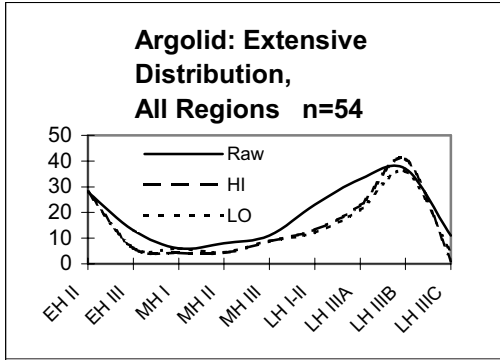


Figure 9.3 Argolid, extensive site distribution.

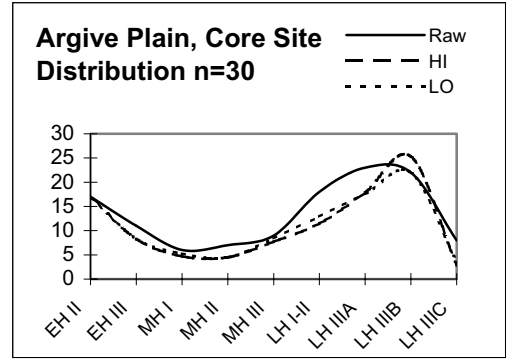


Figure 9.6 Argive Plain, extensive site distribution.

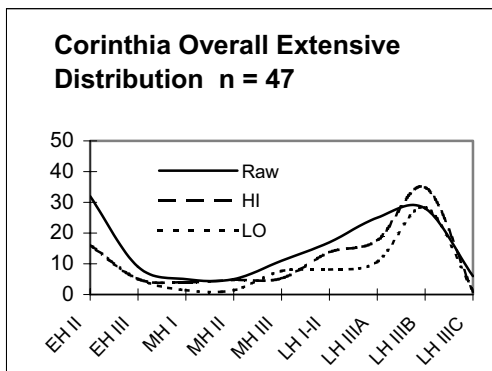


Figure 9.4 Corinthia, extensive site distribution.

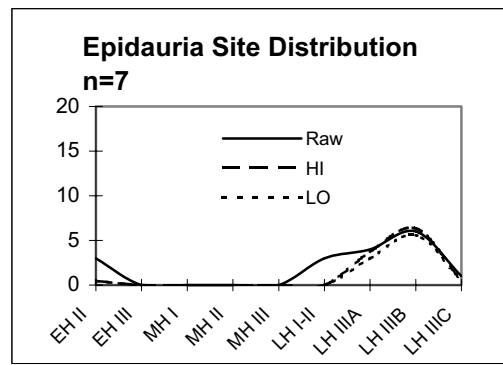


Figure 9.7 Epidauria, extensive site distribution.

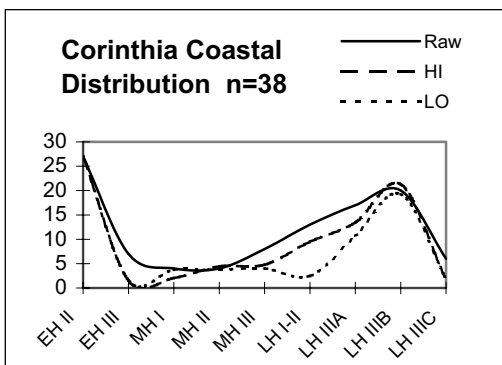


Figure 9.5 Corinthia, coastal site distribution.

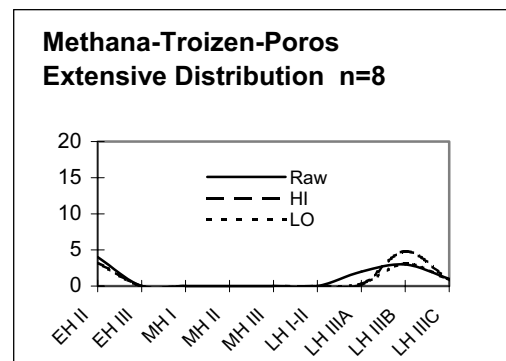


Figure 9.8 Methana-Troizen-Poros, extensive site distribution.

in the Corinthia is guided by other factors than that in the Argolid (see Morgan 1999: 349–58).

Continuing examination of the extensively gathered data, I show a further breakdown of the Argolid by separating the core area of the plain (Figure 9.6) from three regions: the Epidauria, the Methana-Troizen-Poros area and the southernmost region of the Argolid (Figures 9.7, 9.8 and 9.9). Although we know that the numbers of sites are much greater in the core area of the Argolid plain, the patterns of distributions in the outlying areas are significantly different. The Methana-Troizen-Poros region

was depopulated throughout the Middle Bronze Age; only slowly did settlement reappear, lagging behind the core area with its central places. In the Epidauria and the southern Argolid, however, the extensive record suggests some activity by the middle period of the Middle Helladic before taking off during the Mycenaean era. This pattern needs to be explored to try to understand why settlement refoundation occurred in the Middle Bronze Age and to what extent the distribution of sites was affected during LH III, when presumably the palaces in the central Argive plain were consolidating territory and economic control.

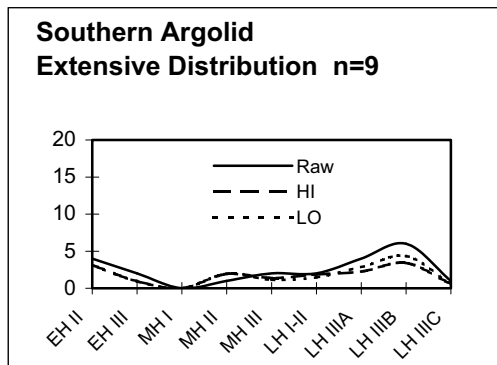


Figure 9.9 Southern Argolid, extensive site distribution.

In general, I query whether these fluctuations reflect relatively autonomous settlements or whether they record varying degrees of integration into, and dependence on, the palatial economy. All the areas that show variable and stepwise profiles of site distribution may be understood better if these patterns are examined in terms of evidence for local development and external influence.

INTENSIVE SURVEY

We are fortunate to have data from intensive survey available for these regions. As mentioned, those from the Methana survey cannot be usefully employed in this analysis, but the information from the Argolid Exploration Project, the Berbati-Limnes Survey, and the Nemea Valley Archaeological Project [NVAP] provides a detailed basis of comparison between intensive and extensive distributions. Perhaps more importantly, it offers insights into the variable trajectories of many localities in differing relationships to the core areas. Furthermore, Morgan's (1999) thorough reexamination of the extensive evidence from the Isthmia and the Corinthia in general provides an excellent basis for detailed comparison of these differently collected data.

The Southern Argolid Survey

I will begin by comparing the graph of the extensively collected data from the southern Argolid with that from the intensive regional survey by the Argolid Exploration Project (Figures 9.9 and 9.10). The survey was very successful in recognizing Early Bronze Age material (including EH I) and the pottery analysts boldly dated ceramics according to a fine division of phases (Nordquist 1995; Mountjoy 1995). The resulting graph (Figure 9.10) is the most detailed of any of the survey projects so far conducted, although it must be recognized that these data are not from a contiguous region, but rather from a variety of areas surveyed throughout the area (Jameson *et al.* 1994: 216–19, fig. 4.1). The results are strongly different in the record of Early Bronze Age sites, with many more sites

recognized by the intensive survey (50 total compared to 4), and these differences reflect many different levels of activity in the landscape rather than merely being a record of settlement (Jameson *et al.* 1994: 348–66). After that, however, both distributions show a stepwise progression of sites as the Late Bronze Age succeeds the Middle. Sites increase from MH II through LH I-II, and then rise higher during LH III. For the intensive survey, this distribution can also be plotted in terms of those sites which were assessed as probable habitation sites (Figure 9.11; Jameson *et al.* 1994: 366–72; compare to the EBA list in their table 6.5, p. 360). For this analysis I have added 10 sites to the tally of those whose size was measured or coarsely estimated; these were sites which had 50 or more sherds (Jameson *et al.* 1994: 417 and list in table B2, p. 544; Runnels *et al.* 1995: appendix 2). This is an arbitrary cut-off determined by looking at the data and deciding that those sites with fewer than 50 sherds consistently showed almost no concentrations for any particular period. Figure 9.11 shows the distribution of measured ('primary') sites. It confirms the overall impression of strong settlement during EH II, but for the late Middle Bronze Age and early Mycenaean period shows a much more pronounced increase than the other graphs. This is followed by a dramatic increase in sites during LH IIIB before the collapse in LH IIIC.

In general, the intensive survey recorded two to three times the number of Middle and Late Bronze Age sites than had previously been known, and the total (22 LH IIIA, 19 LH IIIB) is close to that of the Argive plain (27 LH IIIA and 28 LH IIIB). The major difference, however, is in site size, since this core area comprises the citadels and towns of Mycenae, Argos, Tiryns, Midea, Asine, Nauplion, Lerna and a number of substantial villages – settlements in size no less than 1.5 ha (*e.g.* Asine during MH, Nordquist 1987: 24) and as much as 35–50 ha (Mycenae, Tiryns). The distribution of sites by size from the intensive survey in the southern Argolid is as shown in Table 9.3 (after Jameson *et al.* 1994: 544–45, table B.2), and it demonstrates the magnitude of difference that separates settlement in the southern Argolid from that in the region of the plain of Argos. Notably, the 12 sites with specific estimates all have EH material, while the remaining 25 of the EH sites are recognized only from artifact distributions. For the MH and LH sites, only eight of the MH and LH I-II distributions and 11 of the LH III correspond with measured sites, leaving between two and five of the former and eight and 11 of the latter as artifact distributions over unmeasured sites. This analysis suggests simply that accompanying the rise in settlement activity during these periods is a natural rise in other activities in the landscape. This is a matter discussed by Jameson *et al.* (1994: 348–68; see also Runnels and Van Andel 1987: 314–16, 325–26) in their consideration of the complex hierarchy and functional differences of settlement during the Early, Middle and Late Bronze Ages.

The results of the intensive survey of the peninsula of

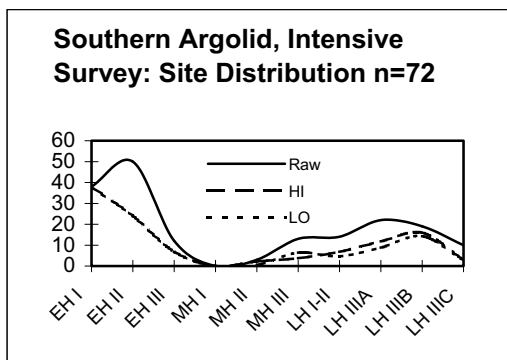


Figure 9.10 Southern Argolid, intensive survey, all sites.

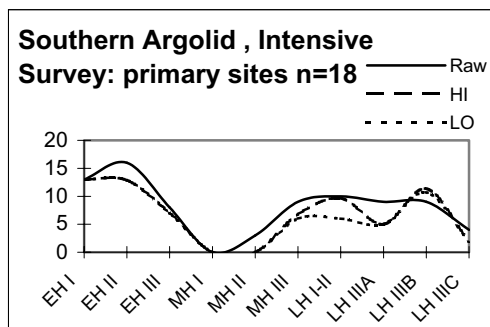


Figure 9.11 Southern Argolid, primary site distribution from the intensive survey.

Size in ha.	Total measured sites	EH I	EH II	EH III	MH I	MH II	MH III	LH I	LH II	LH IIIA	LH IIIB	LH IIIC
TOTAL all Sites	12	38	50	12	2	4	13	11	14	23	20	12
0.00-0.5	4	4	4	1	0	0	1	1	1	2	2	1
0.51-1.0	1	0	0	0	0	0	0	1	1	1	1	0
1.01-2.0	4	1	3	2	0	0	0	1	2	2	2	1
2.01-3.0	3	2-3	2-3	1	0	0	0	0	0	1	1	0
3.01-	1	1	1	0	0	0	0	0	0	1	1	0
LARGE	3	1	1	0	0	0	0	0	0	1	1	0

Table 9.3 Site size distribution of measured sites from the Argolid Exploration Project.

Methana also confirm the discovery of more sites during the EH and LH periods than the extensive record indicated (Mee and Forbes 1997). Figures 9.8 and 9.9 show the extensive record for Methana (8 sites) and the southern Argolid (9 sites) to be about the same, whereas the gross plot of sites from the survey projects (Figure 9.12) shows they are quite different, with Methana having many more EH sites than previously thought, but few MH and LH (50, 4, 8, respectively, of a total of 53 sites), and the southern Akte region having more of all (59, 18, 44, respectively, of a total of 72). The preponderance of evidence from Methana is of sites with five sherds or fewer, which leaves us with little basis for assessing the functional meaning of the increased distribution.

The question of the relationship between settlement and activity in the landscape can be analyzed in more detail. The investigators of the Argolid Exploration Project argue that settlement during EH I-II formed a three-tier hierarchy (Jameson *et al.* 1994: 253-54, 348-66). Settlement in the area was undoubtedly affected by the disturbances at the major centers throughout the Aegean at the end of EH II, since there is a dramatic decrease of sites during EH III (1994: 366-67), after which the area was largely but not completely abandoned. Beginning in MH II, occupation reappeared at three sites (F5, E13, and A6), but then rose during MH III to as many as four (F5, E9, E13, A6). (Jameson *et al.* [1994: 367-68] list only three

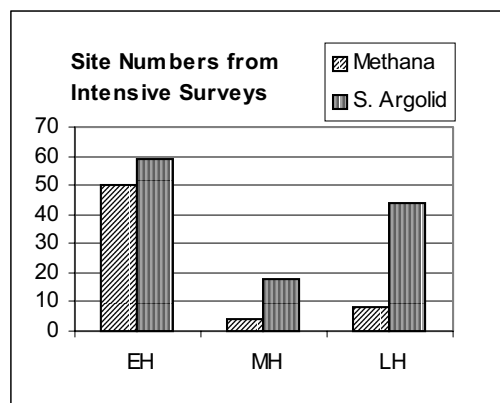


Figure 9.12 Methana and Southern Argolid: gross comparison of sites by period.

MH sites – F5, E13, A6 – but I have added E9, Sambariza Magoula, which has consistent and substantial evidence for EH, MH and LH occupation [Jameson *et al.* 1994: 484-85; Runnels *et al.* 1995: 275-79].) An additional 11 had small scatters of MH III pottery and another four disclosed pottery only identifiable as MH. This wide distribution I believe indicates that by the end of the Middle Bronze Age the inhabitants of the few occupied settlements had begun to utilize the landscape more extensively, as a prelude to the consolidation of settlement

during the early Mycenaean period. The publication of the pottery by Nordquist (1995) enables a more subtle analysis that permits relating the location of sherd scatters to major sites. Thus the distribution of those locations with few sherds shows that most of them are scattered outwards (between 0.55 and 2.3 km) from the major sites of F5, E13, E9, and A6. The evidence to determine what kind of activity created such distributions, however, despite careful analysis of the remains, does not exist (Jameson *et al.* 1994: 368–72), but may be governed by a variety of activities, including cultivation, burial, and routes of communication.

LH I-II witnesses a consolidation marked especially by a dispersed pattern of settlement that continues throughout the LH III period. (Jameson *et al.* 1994: 368). However one reads the different plots in Figures 9.11 and 9.12, LH IIIA and B show variability rather than a steady increase in sites. In their analysis of the sites in terms of size and function, the investigators suggest that the predominant settlement was the small village, though in the later Mycenaean period a higher order may again have been achieved (Jameson *et al.* 1994: 253–54, 366–72). This, however, is not easily confirmed by architectural or mortuary remains.

It is yet unclear how and to what extent occupation and use of the southern Argolid during the Middle and Late Bronze Age was affected by the distant core area of the Argive plain, but no doubt it was (Runnels and Van Andel 1987: 326–30). As Forbes observes, the region's long-term history is one that alternates between 'a largely inward looking, agrarian-based economy' and engagement with central polities in the core region of the Argolid, as well as with maritime economies of the Saronic Gulf (Forbes 2000: 41, 68–70; Van Andel and Runnels 1987: 164–76). Ethnographic and historical studies (Sutton 2000a; 2000b; Forbes 2000; Petronoti 2000; Topping 2000) show that the region's economy and demography, though agrarian and rural in character, are closely and opportunistically linked to the chances for political and economic relationships with polities in both the Argive plain and throughout the maritime Attic-Saronic region.

The Nemea and Berbati-Limnes Valleys Surveys

I now turn to the surveys in the Nemea and the Berbati-Limnes Valleys (Figure 9.2). They mediate between the more densely settled areas of coastal Corinthia to the north and the Argive Plain to the south. Figures 9.13 and 9.14 show very different patterns of site distribution, in part because the Nemea chart only shows the 10 sites with significant quantities of material and not the remaining 17 tracts with finds (Cherry and Davis 2001). If the Berbati survey results are similarly reckoned, a total of 11 sites might be identified as significant (Figure 9.15) – 3 with 50 or more sherds, 8 with more than 100. By sub-phase, the Berbati-Limnes data show relatively high numbers of EH II sites compared to virtually none of EH III through

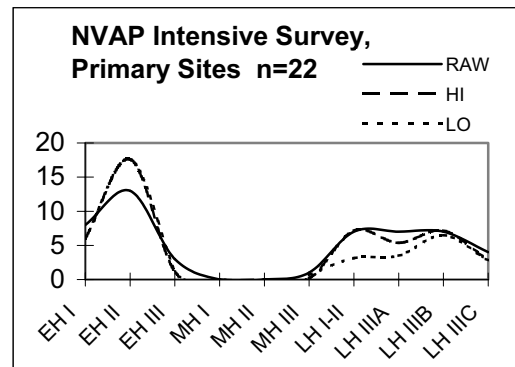


Figure 9.13 Nemea Valley intensive survey, site distribution.

MH II. The remarkable similarity of both the graph of overall and of primary site distribution in the Berbati-Limnes area in large part reflects the consistency of occupation or activity at the primary site of Mastos and its impact on activities in the area. This changes with the dramatic rise in the number of sites in LH IIIA and B; again both distributions display a similar curve, which suggests the extent to which occupation and activities are significantly correlated. Compared to the graph of the core region of the Argolis (Figure 9.6), the near abandonment of the area throughout the Middle Bronze Age is clear. The extent to which its exploitation was tied in with Mycenae during the Late Bronze Age is equally apparent and confirms the similar observations of Wells (1996). The profile of this valley system looks much more like that of the marginal areas of Methana, Troizen and Poros (Figure 9.8) and displays none of the activity recorded in the Akte region (Figures 9.9–11).

In the Berbati-Limnes system (Table 9.4), other than the main and excavated site of Mastos, only one other site of significant size was discovered, FS 14, which measures 6.5 ha. Schallin (1996: 133–34, 173) suggests this unusual site, with traces of walls and many fine-ware sherds and some figurine fragments, but neither coarse wares nor stone implements, was a special facility for the Mycenaean road which runs by it. Of the remaining 10 sites for which size estimates were made, six were between 0.05 and 0.1 ha and four were less than 0.05 ha (Table 9.4). Three of these are tombs (of a total of seven tomb sites found in the survey region), six are thought to have been farmsteads (FS 428, 301, 306, 414, 443, 444; Schallin 1996: 167), and one is suggested to have been a sheep/goat shelter (FS 416, Schallin 1996: 167). In other words, the principal activity in the region seems to have been food production, which primarily took place during the late 14th and 13th centuries, when Mycenae was at its peak of power and population (Schallin 1996: 171–72). The role of the main settlement at Mastos is unclear, but it must have been the controlling agency of the region from early on, as both the MH III/LH I tombs and LH II built tholos tomb demonstrate. Since Mastos was later the site of a pottery kiln

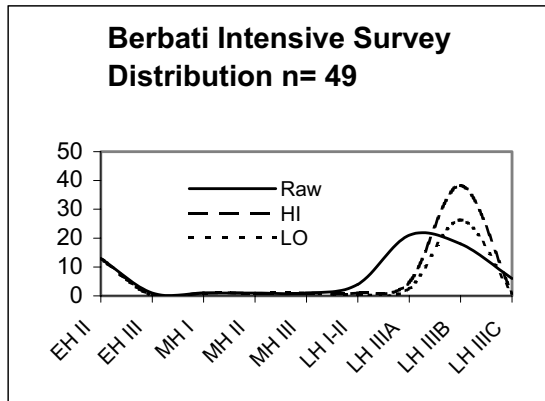


Figure 9.14 *Berbati-Limnes, intensive survey, site distribution.*

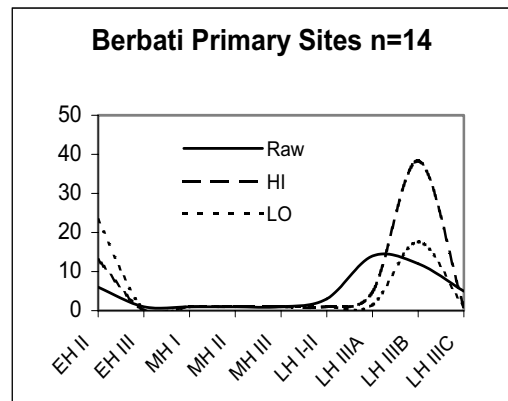


Figure 9.15 *Berbati-Limnes, intensive survey, primary site distribution.*

Size in ha.	EH II	EH III	MH I	MH II	MH III	LH I-I	LH IIIA	LH IIIB	LH IIIC
Total of Sites	13	1	1	1	1	4	21	18	6
<0.0501	1	0	0	0	0	1	2	2	0
>0.0501<0.101	1	0	0	0	0	1	2	1	2
>0.101<0.501	1	0	0	0	0	0	5	5	1
>6.5	1	1	1	1	1	1	2	2	2

Table 9.4 *Measured sites, Berbati-Limnes survey.*

(Åkerström 1940; 1968), it may have performed a variety of important roles for its own population as well as for Mycenae. Finally, the intensive survey shows that agricultural sites are centered in the plain between Mastos and the village of Prosymna, while tombs lie more in the western end, in proximity to the settlement on Mastos. The importance of agriculture is further emphasized by the presence of many agricultural terraces and check dams, which illustrate the intensification of food production for the growing population of the palace center (Wells *et al.* 1990: 223–28, 237; 1993).

In the Nemea Valley there are also relatively many sites of EH II date (18 maximum) and a sharp decrease in EH III (5 maximum) (Kalogerou n.d.). After that there is no MH at all until MH III, when the hill of Tsoungiza was reoccupied. At this time activity in the valley also begins, with four primary sites in LH I, six in LH II and nine in LH III – and an additional 17 when all levels of site magnitude are included (Cherry *et al.* 2002; Cherry and Davis 2001). The graph in Figure 9.13 only shows data for the primary sites, since a breakdown of the ceramic dates of small scatters is presently not available. The strength of the reoccupation of the valley during MH III and the early phases of the Late Bronze Age is apparent. There are interesting similarities between the neighboring Berbati-Limnes and Nemea valleys. Both had a central site during the Early and Late Bronze Ages. But whereas Mastos continued to be inhabited throughout the Middle

Bronze Age, Tsoungiza and the entire Nemea Valley were abandoned. This difference is probably the reason that near Mastos lies a MH III/LH I cemetery and then a LH II tholos, but the habitation and exploitation of the Berbati-Limnes system is ultimately more an artifact of the proximity of this valley to Mycenae. Certainly, the distributional curves for the Berbati-Limnes region emphasize the dramatic increase in exploitation of the area during the height of the Mycenaean palatial era, and this stands in contrast to the more plateau-like profile of the Nemea Valley, which seems to demonstrate a maintenance of sites throughout the Mycenaean period (*cf.* Cherry and Davis 2001: 147–52). Perhaps also the greater distance of the Nemea Valley from Mycenae sheltered settlement from the immediate control of the palace; certainly the lower profile of sites during LH III implies a less intense exploitation than in the Berbati-Limnes valleys.

In this regard the data may be usefully compared to those from the intensive survey of the southern Argolid. The correspondence of the pattern in the Nemea Valley to that of the Akte is of interest (Figures 9.10–11, 9.13), since both show a climax of sites during the early Mycenaean period and a further increase during the palatial period. If the explanation for this phenomenon in the southern Argolid is to be found in its ability to exist somewhat independently of central agencies (*i.e.* capable of interacting with different markets), is there a similar explanation for the Nemea Valley? This is a very important question because it asks how we compare regions to one another.

The NVAP survey demonstrated that the valley was inextricably tied to the Argolid, but indirectly through the major route of communication, the Kelossa Pass (Wright *et al.* 1990: 585), which begins at the southeastern end of the Phliasian Plain. Furthermore, the detailed investigation of the settlement on Tsoungiza has provided a wealth of information about settlement and consumption patterns during all phases of the Mycenaean period (Rutter 1990; 1993a; Dabney 1997). On the basis of analysis of the pottery, among which are none of the Minoanizing and

Site No.	Name	Min Size in ha.	Max Size in ha.	F/VEH	EH I	EH/II	EH II	EH III	EH III/Mf	MH I	MH II	MH III	LH I	LH II	LH IIIA	LH IIIB	LH IIIB/C	
003	Schinochoritika		0.84		x	x	x						x				x	x
204	Hani Anesti	0.37		x	x	x	x											
205	Hani Anesti		0.60					x							x	x	x	
209/213	Dervenakia	0.50	1.00		x	x	x							x				
400	A. Sotira	0.32	1.96													x		
500	Zaharias	0.26		x	x		x											
503	Diaselo Tourkovrisi	0.23			x		x	x	x				x	x	x	x	x	x
512	Tourkovrisi		3.84				x	x										
514	Palaiochoro		1.21				x	x										
922	Bekiri Rahi	0.28	1.50		x		x									LH	LH	
923	Ano Vounaki	0.88	1.70		x		x	x					x	x	x	x	x	x
925			4.24?													x	x	
906, 907, 933, 934, 940	Tsougiza	1.45	7.5		x	x	x	x					x	x	x	x	x	x
941	Sanctuary Zeus						x							x	x	x		
TOTAL = 14																		

Table 9.5 Sites in the Nemea Valley (from Cherry and Davis 2001, table 10.1 and Kalogerou n.d.).

fine lustrous-decorated wares known in the Argolid, Rutter has argued (1990) that the original settlement may have been founded from the Corinthia. This situation shifts during LH II and IIIA when the inhabitants on Tsougiza increased contact with the markets in the Argolid, presumably with Mycenae (Rutter 1993a; Dabney 1997; cf. Morgan 1999: 232, 358–61). Yet the connection was not necessarily direct, for, as Susan Sutton's research informs us, 'in modern times the Phliasian Plain emerges as an almost constant demographic and economic center' (in Wright *et al.* 1990: 601–602). This should give us cause for reflection, since during the Late Bronze Age settlement to the west was also well established and potentially dominant. The settlement at Aidonia commanding the western side of the Phliasian Plain was flourishing (Demakopoulou 1996), and, although we do not know the extent of others, at Ayia Irini and Phlius there were likely substantial settlements (Alcock 1991: 458; Cherry and Davis 2001: 150). Thus the graphed form of the distribution of sites in the valley may be a consequence of a more complex and indirect set of political-economic and social relationships, rather than a reflection of a mere linear relationship with Mycenae (compare Morgan's analysis of the Isthmia region; 1999: 353, 388). In this way we have a basis for comparison with the region of southern Argolis, where, as we have seen, a complex geography and economy of settlement also existed. But this realization uncovers yet another, namely our continuing ignorance of the potentially rich areas of settlement and agricultural production that define the hinterlands of the major centers. In part, this is a consequence of the bias inherent in archaeology in Greece, where Classical sites and the visibility of major monuments (e.g. Venetian and Ottoman fortifications) prejudice our view towards and orientation of the landscape. Thus, prior to the discovery of the Mycenaean cemetery at Aidonia, the Phliasian Valley was viewed from its eastern side, in terms of the perspective from the acropolis of ancient Phlius over its region, the Phlissia (Alcock 1991: 425–33, 460–

63). This example must lead us to comparison of the situation in the Plain of Argos (sic), where, for example, the vast, rich and largely unstudied northwestern reaches of the Inachos drainage behind Argos are largely unstudied, just as the fertile area surrounding Midea (Figure 9.2). In other words, it is insufficient to attempt comparison between extensive distributions and intensively surveyed areas without taking into account the wider contexts of integration in the landscape.

If we turn to consider the internal development of settlement in the Nemea Valley, the picture during LH III seems to be one of consolidation and centralization. According to information published by Cherry *et al.* (2002; Cherry and Davis 2001: 148), during LH III there develops a substantial spread of sites around the study area, especially larger sites (approx > 1.0 ha). They have suggested the emergence of a four-tier hierarchy of settlement and activity in the valley during the Mycenaean period (2001: 150), and although I am skeptical that we should include activities in the landscape (as opposed to settlement) as a part of this hierarchy, they are surely correct in pointing to the emergence of settlement at a lower order than Tsougiza. In the intensive field investigation of the Nemea Valley survey area, no site was found as large as that on Tsougiza, which covered at least 7.5 ha. Cherry and Davis (2001: 148) estimate the size of eight (Sites 003, 205, 213, 400, 503, 922, 923, 925) of the most significant of the 25 sites discovered, in addition to those on Tsougiza and at the Sanctuary of Zeus (Table 9.5). They all are probably less than 2 ha, and four are between 0.30 and 0.85 ha (maximally estimated) and, as the investigators observe, the largest are located at the head of the valley at the center of which is Tsougiza (Cherry *et al.* 2002; Cherry and Davis 2001: 148–50). Assessment of site functions is still underway and there is little that can be said at this point. But the authors have plotted the relationship of the 'Mycenaean sites as well as low-density distributions of artifacts [and they] have been found in virtually every part of the Nemea

area that has been in cultivation since the 1940s.’ They further observe that the soils in these areas ‘are most suitable, or only suitable, for olive cultivation [such that] it seems difficult to avoid the conclusion that this crop was a principal component of the Mycenaean agricultural system’ (Cherry *et al.* 2002). It seems likely that the distribution reflects a network extending out from Tsoungiza and consisting of roads and paths to agricultural land, springs, cemeteries, and outlying places of small-scale habitation (field shelters, farmsteads).

In my view this extension of settlement, which corresponds to the second peak in the graph, illustrates the period during which the population of the valley became fully integrated into the Mycenaean economy (Dabney 1997: 470–71). As appears to have been the case in the Akte of the Southern Argolid, early Mycenaean settlement represents a time of reoccupation of the landscape and the establishment of quasi-autonomous communities, probably largely self-sufficient; whereas the later period is one of increasing integration into the primate political economy of the central places in the Argive Plain. Small areas with poor arable land, such as the Berbati-Limnes system, show a pattern that is completely dependent upon the ability and need of the primary centers to exploit them during the acme of their existence. Areas like the Nemea Valley were part of larger, richer networks of habitation and agricultural production and may have enjoyed some independence from the centers.

Analysis

This review of the intensively collected evidence from the Berbati-Limnes and Nemea Valleys illustrates the extent to which they were separate from the coastal area of the Gulf of Corinth and Isthmus and instead more closely tied into the network in the Argolid, even though it could only be reached over passes through the low mountains. Missing from this examination is consideration of the excavated settlement at Zygouries, which Blegen (1928) thought to be a direct satellite of Mycenae. Its position at the head of the Longopotamos River is similar to that of Tsoungiza, but – like the Phliasian Valley to the west – that of the Longopotamos is large and geographically complex, with the shrine site of nearby Ayia Triada (Kilian 1992) and the probability of another major settlement located at Ancient Kleonai. This valley also is connected to Mycenae, but by means of a road system that was not constructed before the LH III period. The Berbati-Limnes survey explored the remains of these roads, constructed by Mycenae to facilitate heavy and regular transport between the citadel and these regions to the north (Steffen 1884; McDonald 1964; Mylonas 1966; Lavery 1990; 1995; Schallin 1996: 172–73; Jansen 2002). Thus control of the passes and control of the inland Corinthian valleys went hand in hand. What is not clear is whether Mycenae’s control extended to the coastal plains and the Isthmus (Dickinson 1977; Salmon 1984; Vermeule 1987). Morgan

(1999: 352–53, 362) has cautioned that the evidence does not permit a strong argument for any area beyond the southwest Corinthia.

In light of this problem, it is interesting that the graphs of site distribution, both in the Corinthia (Figures 9.4, 9.5) and in the Nemea Valley (Figure 9.13), exhibit a stage-like progression of sites after MH III, since that pattern is different from the rapid and steady rise of sites found in the core areas of the Argolid (Figure 9.6). I think it justifiable to suggest that these two patterns reflect different trajectories of growth and occupational activities: the Argolid core characteristic of a steady development towards centralization, the Corinthia and Nemea Valley more evocative of a loosely affiliated network of settlements.

The emergence of settlements in these upland valleys during the late Middle Helladic and early Mycenaean periods may be characterized by control of their immediate landscape – that is, the adjacent arable and pastoral lands. As economic and other activities expanded beyond that, a variety of factors that had an influence on continued growth came into play. There is reason to think that the Corinthia – at least, the coastal margins – was strongly influenced by settlement on the island of Aigina; while the Akte likely benefited from wider participation in the developing maritime economy of the Southern Argolid and Saronic Gulf. In her study of the MH period in the northeastern Peloponnesos, Lambropoulou (1991) observes that the distribution of the distinctive Aeginetan wares seems to differ between the coastal Corinthian sites and those of the interior. Among the preserved artifacts from the excavations at Korakou and Gonia she found no imported Cycladic or Minoan pottery of the Middle Bronze Age, nor were there any of the lustrous decorated wares among this material (they are first found only in LH I; see Davis 1979). The only imported wares are of the Aeginetan gold mica fabric, and they appear in the varieties of matt-painted, slipped-and-burnished, and cooking and plain wares. They represent *c.* 9% and 18% of the preserved pottery from Korakou and Gonia, respectively (Lambropoulou 1991: 68, 111, 335). Lambropoulou (1991: 336) stresses that ‘this pattern changes drastically as one moves into the interior of the Corinthia’, for no imports showed up among the ‘admittedly small number of MH pieces from Zygouries’, and they are also rare in the MH deposits from Tsoungiza (Rutter 1990). So viewed, the original pattern of settlement may have been stimulated by multiple sources, while the later (LH III) period of growth may be understood as coinciding with Mycenae’s consolidation of political and economic power throughout most of the northeastern Peloponnesos.

One thing is certain – namely, that sites along the coast, including Korakou, Gonia, and probably also Aetopetra and Arapiza, were more or less continuously occupied throughout the EH, MH and LH periods, while none of the inland sites were, having been abandoned throughout almost all of the Middle Bronze Age.

DISCUSSION

This exercise in plotting the distributions of sites according to the extensive and intensive records provides many insights into issues relating to settlement and landuse throughout the northeastern Peloponnesos. Clearly, the effort of breaking the data down into smaller periods of time is worthwhile, since it demonstrates variability in distributions that significantly advance our understanding of developmental stages, both for large regions and for well-defined localities. The significance is enhanced by the extent to which these variations appear in different areas of study and consistently appear whether the data plotted are from extensive, intensive or analytical categories (cf. Figures 9.9, 9.10, 9.11). In addition, analyzing the distributions in terms of the problem of settlement contemporaneity produces plots that are significantly different from those of the raw data. This has been especially apparent in that the simulated counts tend to reduce the high raw numbers of sites, shift distributional highs chronologically downwards, and accentuate variation by showing bimodal distributions. With regard to the problem of the high and low chronologies in the Aegean, it is noteworthy that the low chronology most consistently reduces the number of sites in comparison to the raw numbers and also cuts off the peaks and valleys. Although this is not the place to engage the debate concerning the credibility of these two systems of reckoning (Wiener 1998), it is perhaps of interest that Pollock (1999: 63), in her use of Dewar's algorithm, also noted that it consistently lowered the number of sites in comparison to the raw data. For this reason and for others, I think the results based on the low chronology are probably the most reliable.

This study demonstrates three models of site distribution in the northeastern Peloponnesos that are potentially useful for analyzing settlement and landuse. First is what I venture to call the *Central Place Model*, and it is demonstrated by the graphing of the extensive data from the core area of the Argive Plain (Figure 9.6). It shows a pattern of sites occupied for all periods and a relatively steady increase in numbers up to the acme of the Mycenaean era. Unfortunately, this model is not accompanied by data from intensive survey of the immediate region of any of the major settlements in the plain. Only the intensive survey of the Berbati-Limnes Valley can be used for comparison. In so far as these data demonstrate the extent to which site distributions in this hinterland are directly tied to the rise of the palace-center at Mycenae we can consider the results a confirmation of this model. On the other hand, the Berbati-Limnes data show a very different profile than those from the other intensive surveys (Figures 9.14–15). Thus Berbati-Limnes may represent a second model, the *Dependency Model*, which records in particular the intensive exploitation of the immediate hinterlands of the central places. We need to test other areas around palace sites to see if this model holds up. Third is the *Periphery Model*, and it is represented by the data from

the intensive surveys of the Nemea Valley and the Southern Argolid, and perhaps by the extensive data from the coastal area of the Corinthia and the Isthmus (Figures 9.5, 9.9–11, 9.13). The common element in all these is the variable or stepwise distribution of sites between the Middle and early Late Bronze Ages and the later phases of the Late Bronze Age. The former, I believe, represents relatively independent foundations after the collapse at the end of the Early Bronze Age, while the latter reflects varying degrees of integration into the central political economies of the primary Mycenaean palace centers.

The Periphery Model is one on which those of us working in the Aegean need to concentrate some of our research activities, since it is clearly grossly overstated. There is probably considerable difference among the areas to which I have just suggested it may apply. For example, as argued, the Nemea Valley needs to be considered in terms of its strong neighboring area to the west in the Phliasian Valley, and both valleys need to be evaluated in terms of the extent to which they formed a secondary system or network that enjoyed a degree of autonomy and autarky – even though it seems clear that the settlement of these upland and inland areas was very much stimulated by the rise of the central places (Wright *et al.* 1990; Cherry and Davis 2001). Although the Southern Argolid shares with the Nemea-Phliasian region the characteristic of having variable and multiple landscapes for exploitation, it differs in that it is both much more distant from the core area of the Argive Plain and is able to partake in maritime political economies of the eastern coast of the Peloponnesos and the Saronic Gulf. Proximity to maritime resources clearly makes a difference, for this is also what characterizes the Corinthia-Isthmus coastal region, and, as Morgan (1999: 349–67) has suggested, may have facilitated the emergence of a system of interlinked hamlets and villages or towns, without any one becoming dominant over the other.

The Periphery Model might also apply to the Longopotamos Valley to the east of the Nemea Valley. Here we very much need the benefit of intensive survey, since it is unclear whether or not these valleys and their respective settlements at Zygouries and Tsoungiza are similar in functional and systemic terms. Primarily, the question is whether or not Zygouries is a higher order settlement than Tsoungiza, and the evidence for that may rest on its interpretation – probably not as a pottery production center, but rather as a center of oil and unguent production, if Thomas' assessment is correct (Thomas 1988; Morgan 1999: 358–61). Behind this assessment, however, is the question of whether or not there are secondary centers and regions in the Mycenaean political economy of the northeastern Peloponnesos – that is, settlements to be considered as towns that are also administrative seats, as recorded in the Linear B tablets from Pylos and Knossos (Bennet 1985; 1999a; 1999b; Shelmerdine 1999).

This question of the existence or not of secondary centers in the northeast Peloponnesos during the My-

cenaeon era is fundamental, and our inability to answer it impedes progress in understanding the degrees of variability in the structure and organization of Mycenaean peer-polities. This study is able to frame the question more squarely as one that could most easily be answered through continued intensive survey. In so doing, I emphasize the lacunae in our knowledge of the nature of settlement and landuse in the immediate environs and hinterlands of the major centers of the Argive Plain. What we do not know very well at all, because of a lack of systematic survey and detailed publication of excavated sites, unfortunately makes for a long list (cf. Figure 9.2): the areas behind Acrocorinth, the Longopotamos drainage, the eastern Isthmia and Corinthia (now being intensively surveyed), the hinterlands west of Argos, the area to the southeast of Argos (Kefalari and Kokla), the landscape between Mycenae and the Argive Heraion, that surrounding and behind Dendra-Midea, the region ostensibly controlled by Asine, the entire area east of Aria that includes Kazarma, the Epidauria, and the area around Troizen (to cover only the obvious ones).

Our ignorance of these landscapes should give us pause, since they are numerous and diverse, and, with the exception of the Berbati-Limnes survey as an example of a dependency on a major center, there is in my view little reason to think that the information gleaned from study of the areas already subjected to intensive survey provides us with enough insight to be able to develop reliable models of settlement and land use for extrapolation to this list of unexplored areas. Of course, this is not to say that the data from intensive survey are not useful for building models. Quite the opposite: it is only because of intensive survey that we can raise these questions and begin to construct models for further testing. Indeed the variety of the landscapes listed above invites further intensive analysis to refine any models we develop and to formulate new ones that would take into account unknown variables that we might isolate. That the majority of those on this list comprise the immediate territories of the major centers is a concern, because until we understand in detail the changing nature of landuse and settlement in them, we will be hindered in any attempt to explain the processes by which major centers emerge – how they exploit local resources, the geographic dimensions of their demographic expansion, and the nature of their relations with their neighbors – and how they function during the acme of their development.

This study illustrates that information from the pre- and protohistoric Aegean on the distribution of sites is sufficient to explore major questions about settlement and landuse, despite any problems in the comparability and accuracy of the record. At the same time I have demonstrated that an attention to detail is necessary to assess the variability in patterns of settlement and landuse among different localities, even within relatively similar landscapes. Clearly, we would be incorrect to attempt to build models of the hierarchy and articulation of systems of

political economies merely on the basis of extensively gathered data. Equally, the existence of the results of several intensive and systematic surveys does not permit the elaboration of such general systems or their application across broad regions. That the emergence of central political economies is constrained by highly variable local circumstances is nothing new, but seems to be a characteristic of complex societies in the Aegean (Hansen 2000a; 2000b). In order to continue to refine our understanding, however, we need not only to commit to continued systematic intensive survey, but also to take advantage of every opportunity to document the extensive record, for the areas that are most threatened by continuing development are the environs of the central places.

ACKNOWLEDGEMENTS

I wish to thank Susan Alcock and John Cherry for inviting me to participate in this conference. I am grateful to Mary Dabney, Malcolm Wiener, Curtis Runnels, Daniel Pullen, Jeremy Rutter, Christopher Mee, Jack Davis, Berit Wells, and Robert Schon who read and commented on this paper, given me references and pointed out errors and inconsistencies. I am particularly indebted to Deepak Kumar of Bryn Mawr College who put Dewar's algorithm on the web, so that I could use it for my calculations (<http://mojo.brynmawr.edu/~dkumar/SettlementDynamics/>). I remain responsible for any errors or omissions.

REFERENCES

- Adams, R. McC. (1981) *Heartland of Cities: Surveys of Ancient Settlement and Landuse on the Central Floodplain of the Euphrates*. Chicago, University of Chicago Press.
- Åkerström, Å. (1940) Das mykenische Töpferviertel in Berbati in der Argolis. In *Bericht über den VI. Internationaler Kongress für Archäologie, Berlin 21.–26. August 1939*: 296–98. Berlin, W. de Gruyter.
- Åkerström, Å. (1968) A Mycenaean potter's factory at Berbati near Mycenae. In *Atti e memorie del 1° congresso internazionale di micenologia, Roma 27 settembre–3 ottobre 1967. Incunabula Graeca* 25.1: 48–53. Rome, Ateneo.
- Alcock, S. E. (1991) Urban survey and the *polis* of Phlius. *Hesperia* 60: 421–63.
- Barber, R. (1992) The origins of the Mycenaean palace. In J. M. Sanders (ed.) *ΦΙΛΟΛΑΚΩΝ: Lakonian Studies in Honour of Hector Catling*: 11–23. London, The British School at Athens.
- Bennet, J. (1985) The structure of the Linear B administration at Knossos. *American Journal of Archaeology* 89: 231–49.
- Bennet, J. (1999a) Pylos: the expansion of a Mycenaean center. In M. L. Galaty and W. A. Parkinson (eds.) *Rethinking Mycenaean Palaces: New Interpretations of an Old Idea*: 9–18. Los Angeles, The Cotsen Institute of Archaeology.
- Bennet, J. (1999b) The Mycenaean conceptualization of space, or Pylian geography (...yet again!). In S. Deger-Jalkotzy, S. Hiller and O. Panagl (eds.) *Floreat Studia Mycenaea: Akten des X. Internationalen Mykenologischen Colloquiums in Salzburg vom 1.–5. Mai 1995*: 131–56. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.

- Bennet, J. and Galaty, M. L. (1997) Ancient Greece: recent developments in Aegean archaeology and regional studies. *Journal of Archaeological Research* 5: 75–120.
- Bintliff, J. L. (1977) *Natural Environment and Human Settlement in Prehistoric Greece: Based on Original Fieldwork*. BAR Supplementary Series 28. Oxford, British Archaeological Reports.
- Bintliff, J. (1997) Regional survey, demography, and the rise of complex societies in the ancient Aegean: core-periphery, neo-Malthusian, and other interpretive models. *Journal of Field Archaeology* 24: 1–38.
- Bintliff, J. and Snodgrass, A. (1985) The Cambridge/Bradford Boeotian Expedition: the first four years. *Journal of Field Archaeology* 12: 123–61.
- Bintliff, J., Howard, P. and Snodgrass, A. (1999) The hidden landscape of prehistoric Greece. *Journal of Mediterranean Archaeology* 12: 139–68.
- Blanton, R. E. (2001) Mediterranean myopia (Review of G. Barker and D. Mattingly (series eds.) *The Archaeology of Mediterranean Landscapes*, Oxford, Oxbow Books 1999–2000). *Antiquity* 75 (289): 627–29.
- Blanton, R. E., Kowalewski, S., Feinman, G. and Appel, J. (1981) *Ancient Mesoamerica: A Comparison of Change in Three Regions*. New York, Cambridge University Press.
- Blegen, C. W. (1928) *Zygouries: A Prehistoric Settlement in the Valley of Cleonae*. Cambridge, Mass., Harvard University Press.
- Broodbank, C. (2000) *An Island Archaeology of the Early Cyclades*. Cambridge, Cambridge University Press.
- Caskey, J. (1960) The Early Helladic period in the Argolid. *Hesperia* 29: 285–303.
- Cavanagh, W. (1995) Development of the Mycenaean state in Laconia: evidence from the Laconia Survey. In R. Laffineur and W.-D. Niemeier (eds.) *Politeia: Society and State in the Aegean Bronze Age. Proceedings of the 5th International Aegean Conference University of Heidelberg, Archäologisches Institut, 10–13 April. Aegaeum* 12: 81–88. Liège, Université de Liège, Histoire de l'art et archéologie de la Grèce antique.
- Cavanagh, W. and Mee, C. (1998) *A Private Place: Death in Prehistoric Greece. Studies in Mediterranean Archaeology* 125. Jonsered, Paul Åströms Förlag.
- Cherry, J. F. and Davis, J. L. (2001) 'Under the sceptre of Agamemnon': the view from the hinterlands of Mycenae. In K. Branigan (ed.) *Urbanism in the Aegean Bronze Age*: 141–59. Sheffield, Sheffield Academic Press.
- Cherry, J. F., Davis, J. L. and Mantzourani, E. (2002) Mycenaean Nemea: the results of the Nemea Valley Archaeological Project, Archaeological Survey. <http://river.blg.uc.edu/nvap/MycNVAP.html>
- Dabney, M. (1997) Craft product consumption as an economic indicator of site status in regional studies. In R. Laffineur and P. P. Betancourt (eds.) *TEXNH: Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age. Proceedings of the 6th International Aegean Conference, Philadelphia, Temple University, 18–21 April 1996. Aegaeum* 16: 467–71. Liège, Université de Liège, Histoire de l'art et archéologie de la Grèce antique.
- Dabney, M. K. and Wright, J. C. (1990) Mortuary customs, palatial society and state formation in the Aegean area: a comparative study. In R. Hägg and G. C. Nordquist (eds.) *Celebrations of Death and Divinity in the Bronze Age Argolid: Proceedings of the Sixth International Symposium at the Swedish Institute at Athens, 11–13 June, 1988*. Skrifter utgivna av Svenska institutet i Athen, 4°, 40: 45–53. Stockholm, Paul Åströms Förlag.
- Davis, J. L. (1979) Late Helladic I pottery from Korakou. *Hesperia* 48: 234–63.
- Davis, J. L. (1988) If there's a room at the top what's at the bottom? Settlement and hierarchy in Early Mycenaean Greece. *Bulletin of the Institute of Classical Studies, University of London* 35: 164–65 [abstract].
- Davis, J. L., Alcock, S. E., Bennet, J., Lolos, Y. and Shelmerdine, C. (1997) The Pylos Regional Archaeological Project. Part I: overview and the archaeological survey. *Hesperia* 66: 391–494.
- Davis, J. L., Alcock, S. E., Bennet, J., Lolos, Y., Shelmerdine, C. and Zangger, E. (2002) The Pylos Regional Archaeological Project Internet Edition. <http://river.blg.uc.edu/prap/PRAP.html>.
- Demakopoulou, K. (ed.) (1996) *The Aidonia Treasure: Seals and Jewellery of the Aegean Late Bronze Age*. Athens, Ministry of Culture.
- Dewar, R. (1991) Incorporating variation in occupation span into settlement-pattern analysis. *American Antiquity* 56: 604–620.
- Dewar, R. (1994) Contending with contemporaneity: a reply to Kintigh. *American Antiquity* 59: 149–52.
- Dickinson, O. T. P. K. (1977) *The Origins of Mycenaean Civilisation*. Studies in Mediterranean Archaeology 49. Göteborg, Paul Åströms Förlag.
- Dickinson, O. T. P. K. (1982) Parallels and contrasts in the Bronze Age of the Peloponnese. *Oxford Journal of Archaeology* 2: 125–38.
- Dickinson, O. T. P. K. (1999) Invasion, migration and the Shaft Graves. *Bulletin of the Institute of Classical Studies, University of London* 43: 97–107.
- Dietz, S. (1991) *The Argolid at the Transition to the Mycenaean Age*. Copenhagen, National Museum of Denmark.
- Dunnell, R. C. (1980) Evolutionary theory and archaeology. *Advances in Archaeological Method and Theory* 3: 35–99.
- Forbes, H. (2000) The agrarian economy of the Erminonidha around 1700: an ethnohistorical investigation. In S. B. Sutton (ed.) *Contingent Countryside: Settlement, Economy, and Landuse in the Southern Argolid since 1700*: 41–70. Stanford, Stanford University Press.
- Forsén, J. (1992) *The Twilight of the Early Helladics. A Study of the Disturbances in East-Central and Southern Greece Towards the End of the Early Bronze Age*. Studies in Mediterranean Archaeology, Pocket Book Series 116. Jonsered, Paul Åströms Förlag.
- Freytag, B. von (1973) *Geologie des Isthmus von Korinth*. Erlanger Geologischen Abhandlungen 95. Erlangen, Erlanger Geologischen Abhandlungen.
- Haley, J. and Blegen, C. (1928) The coming of the Greeks. *American Journal of Archaeology* 32: 141–54.
- Hansen, M. H. (2000a) Introduction: the concepts of city-state and city-state culture. In M. H. Hansen (ed.) *A Comparative Study of Thirty City-State Cultures. An Investigation Conducted by the Copenhagen Polis Center*: 11–33. Copenhagen, The Royal Danish Academy of Sciences and Letters.
- Hansen, M. H. (2000b) The Hellenic Polis. In M. H. Hansen (ed.) *A Comparative Study of Thirty City-State Cultures. An Investigation Conducted by the Copenhagen Polis Center*: 141–87. Copenhagen, The Royal Danish Academy of Sciences and Letters.
- Higgins, M. D. and Higgins, R. (1996) *A Geological Companion to Greece*. Cornell, Cornell University Press.
- Hodder, I. and Orton, C. (1976) *Spatial Analysis in Archaeology*. Cambridge, Cambridge University Press.
- Hope Simpson, R. (1965) *A Gazetteer and Atlas of Mycenaean Sites*. Bulletin of the Institute of Classical Studies, Supplement 161. London, University of London.
- Hope Simpson, R. and Dickinson, O. (1979) *A Gazetteer of Aegean Civilisation in the Bronze Age*. Studies in Mediterranean Archaeology 52. Göteborg, Paul Åströms Förlag.
- Jameson, M., Runnels, C., and van Andel, T. (1994) *A Greek Countryside: The Southern Argolid from Prehistory to the Present Day*. Stanford, Stanford University Press.

- Jansen, A. G. (2002) *A Study of the Remains of Mycenaean Roads and Stations of Bronze-Age Greece*. Lewiston, N.Y., Edwin Mellen Press.
- Kalogerou, A. (n.d.) Unpublished manuscript on the Early Helladic artifacts from the archaeological survey of the Nemea Valley Archaeological Project.
- Kilian, K. (1987) L'architecture des residences mycéniennes: origine et extension d'une structure du pouvoir politique pendant l'âge du bronze récent. In E. Lèvy (ed.) *Le système palatial en Orient, en Grèce, et à Rome: Actes du colloque de Strasbourg, 19–22 juin 1985*: 203–217. Strasbourg, Université des sciences humaines de Strasbourg.
- Kilian, K. (1988a) The emergence of the wanax ideology in the Mycenaean palaces. *Oxford Journal of Archaeology* 7: 291–302.
- Kilian, K. (1988b) Mycenaean up to date: trends and changes in recent research. In E. B. French and K. A. Wardle (eds.) *Problems in Greek Prehistory: Papers Presented at the Centenary Conference of the British School of Archaeology at Athens, Manchester, April 1986*: 115–52. Bristol, Bristol Classical Press.
- Kilian, K. (1992) Mykenischer Heiligtümer der Peloponnes. In H. Froning, T. Hölscher and H. Mielsch (eds.) *Kotinos: Festschrift für Erika Simon*: 10–25. Mainz, von Zabern.
- Kilian, K. (1994) Il mondo miceneo 'aggiornato': tendenze e cambiamenti nell'ambito delle più recenti ricerche. In M. Marazzi (ed.) *La Società Micenea*: 357–419. Rome, Bagatto.
- Kintigh, K. (1994) Contending with contemporaneity in settlement-pattern studies. *American Antiquity* 59: 143–48.
- Lambropoulou, A. (1991) *The Middle Helladic Period in the Corinthia and the Argolid: An Archaeological Survey*. (Doctoral Dissertation, Bryn Mawr College.) Ann Arbor, University Microfilms.
- Lavery, J. (1990) Some aspects of Mycenaean topography. *Bulletin of the Institute of Classical Studies* 37: 165–71.
- Lavery, J. (1995) Some 'new' Mycenaean roads at Mycenae. *Bulletin of the Institute of Classical Studies* 40: 264–67.
- Lehmann, H. (1937) *Argolis*. Athens, German Archaeological Institute.
- Lukerman, F. E. (1972) Settlement and circulation: patterns and systems. In W. A. McDonald and G. Rapp, Jr. (eds.) *The Minnesota Messenia Expedition: Reconstructing a Bronze Age Regional Environment*: 148–70. Minneapolis, University of Minnesota.
- Manning, S. (1995) *The Absolute Chronology of the Aegean Early Bronze Age: Archaeology, Radiocarbon and History*. Monographs in Mediterranean Archaeology 3. Sheffield, Sheffield Academic Press.
- Maran, J. (1998) *Kulturwandel auf dem griechischen Festland und den Kykladen im späten 3. Jahrtausend v. Chr. Studien zu den kulturellen Verhältnissen in Südosteuropa und dem zentralen sowie östlichen Mittelmeerraum in der späten Kupfer- und frühen Bronzezeit*. Bonn, Habelt.
- McDonald, W. A. (1964) Overland communications in Greece during LH III, with special reference to Southwest Peloponnese. In E. L. Bennett, Jr. (ed.) *Mycenaean Studies: Proceedings of the Third International Colloquium for Mycenaean Studies Held at 'Wingspread,' 4–8 September 1961*: 217–40. Madison, University of Wisconsin Press.
- McDonald, W. A. and Hope Simpson, R. (1972) Archaeological exploration and Register. In W. A. McDonald and G. Rapp, Jr. (eds.) *The Minnesota Messenia Expedition*: 117–147, 264–309. Minneapolis, The University of Minnesota Press.
- Mee, C. and Forbes, H. (eds.) (1997) *A Rough and Rocky Place: The Landscape and Settlement History of the Methana Peninsula, Greece. Results of the Methana Survey Project*. Liverpool, Liverpool University Press.
- Morgan, C. (1999) *Isthmia VIII: The Late Bronze Age Settlement and Early Iron Age Sanctuary*. Princeton, American School of Classical Studies.
- Mountjoy, P.-A. (1995) The pottery of the Late Helladic period. In C. Runnels, D. Pullen and S. Langdon (eds.) *Artifact and Assemblage: The Finds from a Regional Survey of the Southern Argolid, Greece, Volume I. The Prehistoric and Early Iron Age Pottery and the Lithic Artifacts*: 52–56. Stanford, Stanford University Press.
- Mylonas, G. (1966) *Mycenae and the Mycenaean Age*. Princeton, Princeton University Press.
- Nordquist, G. C. (1987) *A Middle Helladic Village: Asine in the Argolid*. Uppsala Studies in Ancient Mediterranean and Near Eastern Civilizations 16. Uppsala, University of Uppsala.
- Nordquist, G. C. (1995) The pottery of the Early Helladic III and Middle Helladic periods. In C. Runnels, D. Pullen and S. Langdon (eds.) *Artifact and Assemblage: The Finds from a Regional Survey of the Southern Argolid, Greece, Volume I. The Prehistoric and Early Iron Age Pottery and the Lithic Artifacts*: 43–51. Stanford, Stanford University Press.
- Petronoti, M. (2000) Social and economic formations in Kranidhi (1821–1981): a preliminary investigation. In S. B. Sutton (ed.) *Contingent Countryside: Settlement, Economy, and Landuse in the Southern Argolid since 1700*: 71–83. Stanford, Stanford University Press.
- Plog, F. (1973) Diachronic anthropology. In C. Redman (ed.) *Research and Theory in Current Anthropology*: 181–98. New York, Wiley.
- Plog, F., Plog, S. and Wait, W. (1978) Decision-making in modern surveys. *Advances in Archaeological Method and Theory* 1: 383–421. Academic Press, New York.
- Pollock, S. (1999) *Ancient Mesopotamia: The Eden that Never Was*. Cambridge, Cambridge University Press.
- Renfrew, C. (1972) *The Emergence of Civilisation*. London, Methuen.
- Runnels, C. and van Andel, T. (1987) The evolution of settlement in the Southern Argolid, Greece. *Hesperia* 56: 303–334.
- Runnels, C., Pullen, D. and Langdon, S. (eds.) (1995) *Artifact and Assemblage: The Finds from a Regional Survey of the Southern Argolid, Greece, Volume I. The Prehistoric and Early Iron Age Pottery and Lithic Artifacts*. Stanford, Stanford University Press.
- Rutter, J. (1983) Some thoughts on the analysis of ceramic data generated by site surveys. In D. R. Keller and D. W. Rupp (eds.) *Archaeological Survey in the Mediterranean Area*. BAR International Series 155: 137–42. Oxford, British Archaeological Reports.
- Rutter, J. (1990) Pottery groups from Tsoungiza of the end of the Middle Bronze Age. *Hesperia* 59: 375–458.
- Rutter, J. (1993a) A group of Late Helladic IIA pottery from Tsoungiza. *Hesperia* 62: 53–95.
- Rutter, J. (1993b) Review of Aegean Prehistory II: the prepalatial Bronze Age of the southern and central Greek Mainland. *American Journal of Archaeology* 97: 745–97.
- Rutter, J. B. (2002) The Prehistoric Archaeology of the Aegean. http://devlab.dartmouth.edu/history/bronze_age/chrono.html.
- Salmon, J. (1984) *Wealthy Corinth*. Oxford, Oxford University Press.
- Sanders, W., Parsons, J. and Santley, R. (1979) *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization*. New York, Academic Press.
- Schacht, R. (1984) The contemporaneity problem. *American Antiquity* 49: 678–95.
- Schallin, A.-L. (1996) The Late Helladic period. In B. Wells (ed.) *The Berbati-Limnes Archaeological Survey 1988–1990*: 123–75. Stockholm, Paul Åströms Förlag.
- Shelmerdine, C. W. (1997) The palatial Bronze Age of the southern

- and central Greek Mainland. *American Journal of Archaeology* 101: 537–85.
- Shelmerdine, C. W. (1999) A comparative look at Mycenaean administration(s). In S. Deger-Jalkotzy, S. Hiller and O. Panagl (eds.) *Florent Studia Mycenaea. Akten des X. Internationalen Mykenologischen Colloquiums in Salzburg vom 1.–5. Mai 1995. Band I: 555–76*. Vienna, Verlag der Österreichischen Akademie der Wissenschaften.
- Steffen, J. (ed.) 1884 *Karten von Mykenai*. Berlin, D. Reimer.
- Steward, J. (1950) *Area Research, Theory and Practice*. New York, Social Science Research Council.
- Sutton, S. B. (1988) What is a village in a nation of migrants? *Journal of Modern Greek Studies* 6: 187–215.
- Sutton, S. B. (1994) Settlement patterns, settlement perceptions: rethinking the Greek village. In P. N. Kardulias (ed.) *Beyond the Site: Regional Studies in the Aegean Area*: 313–35. Lanham, MD, University Press of America.
- Sutton, S. B. (1999) Fleeting villages, moving households: Greek housing strategies in historical perspective. In D. Birdwell-Pheasant and D. Lawrence-Zúñiga (eds.) *House Life: Space, Place, and Family in Europe*: 73–104. New York, Berg.
- Sutton, S. B. (2000a) Introduction: past and present in rural Greece. In S. B. Sutton (ed.) *Contingent Countryside: Settlement, Economy, and Landuse in the Southern Argolid since 1700*: 1–24. Stanford, Stanford University Press.
- Sutton, S. B. (2000b) Liquid landscapes: demographic transitions in the Ermionidha. In S. B. Sutton (ed.) *Contingent Countryside: Settlement, Economy, and Landuse in the Southern Argolid since 1700*: 84–106. Stanford, Stanford University Press.
- Thomas, P. (1988) A Mycenaean perfumed oil workshop at Zygouries. *American Journal of Archaeology* 92: 254 [abstract].
- Topping, P. (2000) The Southern Argolid from Byzantine to Ottoman times. In S. B. Sutton (ed.) *Contingent Countryside: Settlement, Economy, and Landuse in the Southern Argolid since 1700*: 25–40. Stanford, Stanford University Press.
- Van Andel, T. and Runnels, C. (1987) *Beyond the Acropolis: A Rural Greek Past*. Stanford, Stanford University Press.
- Vermeule, E. (1987) Baby Aigisthos and the Bronze Age. *Proceedings of the Cambridge Philological Society* 33: 122–52.
- Warren, P. and Hankey, V. (1989) *Aegean Bronze Age Chronology*. Bristol, Bristol Classical Press.
- Wells, B. (1996) The Middle Bronze Age. In B. Wells (ed.) *The Berbati-Limnes Archaeological Survey 1988–1990*: 121. Stockholm, Paul Åströms Förlag.
- Wells, B., Runnels, C. and Zangger, E. (1990) The Berbati-Limnes Archaeological Survey: the 1988 season. *Opuscula Atheniensis* 18: 207–238.
- Wells, B., Runnels, C. and Zangger, E. (1993) In the shadow of Mycenae. *Archaeology* 46: 54–58, 63.
- Wiener M. H. (1998) The absolute chronology of Late Helladic IIIA2. In M. S. Balmuth and R. H. Tylot (eds.) *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean. Proceedings of the International Colloquium 'Sardinian Stratigraphy and Mediterranean Chronology'*, Tufts University, Medford, Mass., March 17–19, 1995. *Studies in Sardinian Archaeology* 5: 309–319. Oxford, Oxbow Books.
- Wright, J. C. (1990) An Early Mycenaean hamlet on Tsoungiza at ancient Nemea. In P. Darque and R. Treuil (eds.) *L'habitat égéen préhistorique. Actes de la table ronde internationale, Athènes, 23–25 juin 1987. Bulletin de correspondance hellénique, Supplément* 19: 347–57. Paris, École française d'Athènes.
- Wright, J. C. (1995) From chief to king in Mycenaean society. In P. Rehak (ed.) *The Role of the Ruler in the Prehistoric Aegean. Aegaeum* 11: 63–80. Liège, Histoire de l'art et archéologie de la Grèce antique, Université de Liège; Austin, Program in Aegean Scripts and Prehistory, University of Texas at Austin.
- Wright, J. C., Cherry, J. F., Davis, J. L., Mantzourani, E., and Sutton, S. B. (1990) The Nemea Valley Archaeological Project: a preliminary report. *Hesperia* 59: 579–659.
- Zangger, E. (1993) *The Geoarchaeology of the Argolid. Argolis 2*. Berlin, Mann.
- Zerner, C. (1978) *The Beginning of the Middle Helladic Period at Lerna*. Ann Arbor, University Microfilms (7904772).
- Zerner, C. (1986) Middle and Late Helladic I pottery from Lerna. *Hydra* 2: 58–74.
- Zerner, C. (1988) Middle and Late Helladic I pottery from Lerna. Part II, Shapes. *Hydra* 4: 1–10 and unnumbered ills.
- Zerner, C. (1993) New perspectives on trade in the Middle and Early Late Helladic periods on the Mainland. In C. Zerner, P. Zerner and J. Winder (eds.) *Pottery as Evidence for Trade in the Aegean Bronze Age, 1939–1989*: 39–56. Amsterdam, Gieben.