



AEGEAN AND CYPRUS IN THE EARLY HOLOCENE: BROTHERS OR DISTANT RELATIVES?

STELLA KATSAROU-TZEVELEKI

5 Ts. Karatasou Str. 11742 Athens, Greece.

Received: 30-3-2001 Accepted: 28-9-2001

e-mail: stella.kats@iname.com

ABSTRACT

This paper discusses neolithisation procedures in the Aegean in comparison with those in Cyprus under the light of recent excavations in both areas within the last decade, and speculates the possibility of placing the eastern Mediterranean island cultures under comparable stratigraphic horizons. It is observed that the similarities of the earliest phase are interrupted about the middle of 8th mil. B.C., when Cyprus "imports" Preceramic Neolithic from the Near East, while the Aegean follows slow indigenous procedures of neolithisation. Despite difference in subsistence economies and group concepts, some similarities are though indicated regarding archaistic features in architecture and burial practices, and give the incentive to discuss problems of isolation and conservatism.

KEYWORDS: Indigenous vs. imported neolithisation, conservatism vs. cultural flexibility

INTRODUCTION

During the last decade Aegean and Cyprus had the experience of surprising discoveries, so that all previously established views considering the eastern Mediterranean islands as "empty landscapes" (Woodman 1990) during the first millenia of the Holocene, seemed to loose any support. As a matter of fact, although the Aegean was involved as a major geographical constituent in all theories assigning the origin of postpalaeolithic cultures of the Greek area to moving populations ex oriente (Ammerman and Cavalli-Sforza 1984; Zvelebil 1985), the absence of any

early Holocene human traces deprived the Aegean of being also considered as a habitat of active populations rather than a mere crossroads which people traversed without staying (Van Andel and Runnels 1988; Runnels 1995).

The recovery of stratified early Holocene sites at Akrotiri, Shillourokampos and other sites on Cyprus (Fig. 1), and in the Cave of Cyclope and cape Maroulas in the Aegean have for the first time provided a substantial base for comparing neolithisation between the two areas. As both areas were proved to have been occupied much earlier than long-standing theories have

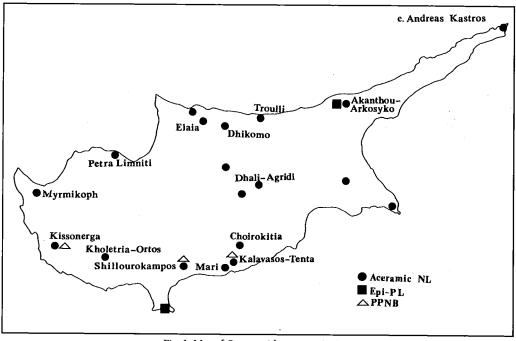


Fig. 1. Map of Cyprus with preceramic sites.

assumed, the new data have raised similar discussions on the origin of the colonists and seafaring adaptations, the density of interaction with the adjacent main lands, the early modes of subsistence and their role to the transition to food production economy in the Aegean and Cyprus. The same data have also lead to the reconstruction of older biogeographic patterns of island subsistence suggested by Cherry (1979, 1981, 1984, 1985, 1990, 1995), Runnels (1995) and Stanley-Price (1977).

Cyprus lies about 400 km. far from Rhodes and about 600 km. from Crete, while the distance from the Greek mainland is about 800 km. It is more than sure that no direct contacts existed between the two areas in the early Holocene and thus far very few scholars have attempted cultural correlation between the two areas in early prehistory (Efstratiou and Mantzourani 1997; LeBrun 1997). However, Aegean and Cyprus have shared common features on their shift from the hunting-

gathering economy to food production, although this shift was done via different tracks and episodes. In the light of the recent excavations, we suggest to correlate Cypriot and Aegean early Holocene cultures by placing both areas under two common stratigraphic horizons and evaluate outcoming comparisons.

LOWER/EARLY PHASE.

The site of Akrotiri-Aetokremnos in Cyprus (Simmons 1999) and the lowest levels of the Cave of Cyclope on Youra in the Aegean (Sampson 1998; Sampson 2001) consist the earliest eastern Mediterranean horizon which we call Lower or Early Phase and covers a time span of about 1,500 years, between the 10th and 9th mil. BC (calibrated, as all following dates), all along the Proto-Neolithic and the PPNA of Anatolia and the Levant (Tabl. 1). The two sites are not absolutely contemporary, as Akrotiri is occupied between early 10th and late 9th mil. BC with emphasis in 10005-9702 BC (Wigand

and Simmons 1999) and Youra-lower levels were dated around the middle of 9th mil. BC (Facorellis and Maniatis 2001).

Both site locations demonstrate common selectivity criteria by the populations (Kvamme and Jockim 1990), such as high elevation (65 m. at Aetokremnos, 100 m. at the Cave of Cyclope) in close proximity to the coast, good availability of shelter (both are cave sites located on the coastal cliffs), open view to the sea with visual contact to all adjacent coasts and islands in the case of the Cave of Cyclope, and immediate access to water springs and biotopes. Familiarity with the sea and navigation is another common feature, since Youra fishermen depended highly on seafaring and Aetokremnos colonists had to cross a distance of more than 60 km. of open sea to reach Curpus (Stanley-Price 1977; Held 1989; Gomez and Pease 1992; Simmons 1999), which presupposes substantial coastal adaptation at a previous stage (Simmons 1999).

Subsistence patterns are in both sites orientated to hunting activities on a permanent basis with specialisation in a certain foraging pattern, which involves the systematic hunting of dwarf elephants and pigmy hippopotami in the case of Aetokremnos (Vaufrey 1929; Held 1992; Reese 1995; Simmons 1999) and an organised fishing economy in the case of Youra (Sampson 1998; Sampson 2001), as indicated by the thick fishbone assemblages and the wide collection of fishing tools. Both caves should be interpreted as camp sites, intended to serve as centralprocessing and storage bases, while there is little evidence favoring any sort of permanent habitation. According to the excavators, the Aetokremnos' hunters should not exceed the number of 50 individuals maintaining a broader population group of about 500 individuals, maybe supported by a network of similar sites, such as Akanthou-Archangellos Michael in northern Cyprus (Reese 1995; Simmons 1999), which is a highly probable pattern for Youra as well.

Low variability of tools in both sites supports

the pattern of hunting specialisation, while the strong localised idocyncracies and the tendency for microlithic types in both tool industries are typical epiplalaeolithic features, which echoes Kembarian-Natoufian traditions (Bar-Yosef and Vall 1991) in the case of Cyprus (Simmons 1999), and the Mesolithic industries of Antalya caves (Otte et al. 1995) and Franchthi (Perlès 1990) in the case of Youra (Sampson et al. 1998).

Hunting specialisation to one species or to a limited range of game animals is very usual among most epiplalaeolithic groups in Anatolia and the Levant (Vigne and Buitenhuis 1999, Peters et al. 1999, Horwitz et al. 1999), where gazelle was the main target (Mellaart 1975), in Franchthi cave, which depended much on reddeer hunting (Mellaart 1975), as well as in northern Europe which practiced systematic bird-catching and fishing strategies (Bonsall 1990; Grigson 1990). Hunting remained the major subsistence resource also for early sedentary villages of PPNA SE Anatolia, such as Hallan Cemi which continued to depend on hunting even after populations have stopped being nomadic (Vigne and Buitenhuis 1999).

The basic difference between the economy of Youra and Akrotiri is that the latter was almost exclusively concentrated on the pigmy-hippoand-dwarf-elephant hunting and exploited supplementary resources, such as marine resources for example, at a much lower degree, even when faunal endemic hunting is in decline. Youra, on the other hand, shows a broader dietary equilibrium between land and sea available resources, with substantial secondary subsistence choices supplementing fishing. The most important of these choices, apart from collecting mollusks, bird-catching and wild game hunting, was the breeding of domesticated pigs. However the bones of pigs recovered within Youra deposits preserve strong features of their wild ancestors, indicating that the animals were still in the first stage of domestication (K. Trantalidou, pers. comm.), which is reminiscent of similar observations by specialists in the domesticates of Halan _emi. A small number of phalanges from pigs was also collected within the Aetokremnos sediments, but the excavators have associated them with the use of cloaks as clothes rather than with some systematic breeding activity for subsistence (Simmons 1999). According to their considerations, Aetokremnos hunters echo some knowledge of domestication but did not practice it for subsistence themselves.

As a result, the Cave of Cyclope and maybe Akrotiri-Aetokremnos the earliest are Mediterranean sites with evidence on animal domestication in general and pig domestication in particular, at a stage when pig domestication occurred only in the SE Anatolia and northern Syria and caprice domestication had just made its very first appearance in the northern Levant. Unfortunately Hallan Cemi and the other "pig" sites of Anatolia lie so far from the Aegean and Cyprus, that any influence seems improbable, at least as the Aegean is concerned. On the other hand the possibility that domestication developed separately in more than one nuclear eastern Mediterranean southwestern Asia cannot be excluded, although still immature.

CONCLUSIONS

In other words, Aetokremnos hunters were pushed to a marginal zone such as Cyprus probably from the Syrian coast during the PPNA to maintain their conservative epipalaeolithic identity which could not any more survive in competition with the sedentary PPNA cultures of the mainland. Although Aetokremnos hunters seem to be somehow aware of pig domestication. which they may have come across with in their motherland, they do not practice it for subsistence, but remain strictly epipalaeolithic. For this reason they decline and vanish soon after the faunal endemic they depend on go extinct due to island isolation, over-hunting or deteriorating climatic conditions, because they do not know how to shift to alternative economic solutions.

Akrotiri hunters demonstrate an example of adaptation difficulty encouraged by the low or non-existent interaction with mainland developments, where sedentary villages are established at that stage and economy shifts to new orientations.

Youra groups, on the contrary, arriving or being pushed either from the Greek mainland or Asia Minor, have been flexible enough to adapt limited domestication activities as supplementary to their main fishing economy. The latter fits very well the contemporary mesolithic pattern of a broad sphere extending as far as the caves of Antalya region in the East and Franchthi Cave in the Argolis in the West. The domestication activity of Youra though has not yet acquired an identifiable mainland counterpart in the near regions. Whatever the origin of Youra peoples, from the East or West, they carried a dual identity, equally Preceramic Neolithic with Mesolithic. Whether this mixed economy is indigenous or imported we do not know. We only propose that Youra peoples were an openminded group and had developed the appropriate technological and economical preadaptive responses to ensure their survival by shifting to food production, when fishing will not any more suffice. The case of Youra demonstrates how important are certain ethnotic qualities, such as adaptation and flexibility, along with communication, as opposed to conservatism and isolation, for mediating new ideas and keeping a population alive.

UPPER/LATER PHASE

This overlying horizon, which we call the Upper or Later Phase, covers a time span of 1,000-1,500 years, between the later 9th to the beginning of the 7th mil. BC, which is roughly contemporary to the Anatolian and Levantine PPNB (Tab. 1). It is represented by at least three Cypriot sites and cape Maroulas on the island of Kythnos (dated in late 9th to 8th mil. BC, according to A. Sampson, pers. comm.) and Youra upper levels in the Aegean. On the

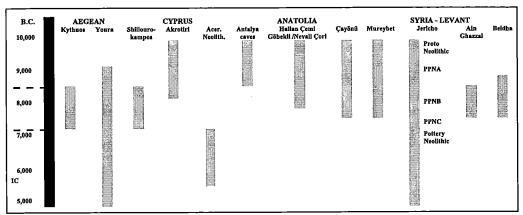


Fig. 2. Chronological table of Epipalaeolithic and Preceramic Neolithic cultures of the eastern Mediterranean and the Near East.

contrary to the Early Phase, Aegean and Cyprus have now developed distinct cultures one from the other, as Cyprus was colonised by groups with mature Preceramic Neolithic culture who accelerated neolithisation procedures, while the Aegean did not have the opportunity of renovating interactions, and thus remained Epipalaeolithic.

The main evidence for the period comes from the site of Parekklisha-Shillourokampos (Guillaine et al. 1993, 1994, 1995, 1999), situated about 5 km off the southern Cypriot coast in the area of Amathonte, and investigated by the French mission since 1992. It occupies the slope of a low hill separating two valleys and has direct access to water sources and arable land, which suggests different site selection criteria compared to Aetokremnos. Shillourokampos has vielded the earliest architectural evidence on the island, ranging from simple pebble floors, sometimes plastered or slipped with ochre, and pits (Guillaine et al. 1995; Guillaine et al. 1999) to the foundations of a 19-m.-long triangular structure, cut out in the bedrock and built in perishable materials, with evidence of door entrances and outdoor supplementary structures (Guillaine et al. 1995). The site revealed two phases dating from late 9th mil. BC (Phase A) to early 8th mil. BC (Phase B) (Guillaine et al. 1999).

The people of Shillourokampos were practiced a food production economy based on agriculture and husbandry involving all major domesticates, namely caprines, pigs and bovines. Apart from the neolithic economy all other cultural features of Shillourokampos such as lithic industries, site location criteria and domestic architecture patterns fit well within neolithic patterns and the PPNB traditions of the mainland, and show that considerable differences exist compared to the previous Upper Phase.

The excavators tend to believe that the population of Shillourokampos originates from the region of Euphrates and northern Syria, despite the presence of Cappadocian obsidian within its deposits. This view is based on the fact that this is the only region where we can find mainland counterparts for the domesticated pigs and bovines of Shillourokampos. Sites such as çayönü, Cafer Hüyük and Hallan Çemi (Rosenberg et al. 1998), have revealed evidence on pig domestication since early PPNA, and on bovine domestication since early PPNB (Vigne and Buitenhuis 1999), while coastal areas developed such practices even later than the domestication of caprines, that is to say around the middle and late PPNB and in PPNC. We

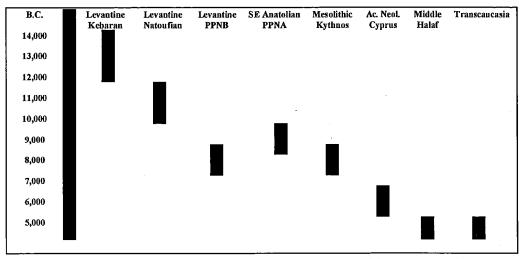


Fig. 3. Distribution of circular architecture in the eastern Mediterranean and the Near East per phase.

should notify that Bos primigenius, the wild ancestor of the domesticated bovine, has got a very important position within the symbolic world of all PPN cultures, as we can see from the use of buccrania as decorative element or cult symbol since PPNA. The import of bovines to Cyprus suggests that seafaring techniques and boat sizes were capable to carry such big animals all across the distance from the mainland, which presupposes a travel of several days in difficult conditions. It is certain that the colonists would not undertake such a risky task, if this animal was of minor importance for their economic projects. Anyhow, Shillourokampos' domesticates still keep distinct features of their wild ancestors. which suggests that colonisation has occurred only a short while after the beginning of domestication. The excavators believe that, after brought to the island, bovines were not kept inside the domestic area, but were left free to develop a community of game animals and improved a semi-wild behaviour.

The recovery of a stone figurine (Guillaine *et al.* 1999), representing mixed features of both a human face and an animal figure strengthens the possibility of a north Syrian-SE Anatolian origin. This material evidence indicates that

Shillourokampos was full part of the broader culture spread in the Near East at that time, sharing not only common economic patterns with these peoples but also common symbolic codes.

Shillourokampos is not the only evidence for the period. Two more Cypriot sites, Kissonerga-Mylouthkia and Kalavasos-Tenta in the southern and soutwestern coast, have hinted close affinities with the Levantine PPNB communities. All these sites should be regarded as the result of the population exodus which occurred, due to overpopulation stress towards less inhabited zones, such as Cyprus and the arid zones of Jordan, Negev and Sinai, in the PPNB (Mellaart 1975; Goring-Morris and Belfer-Cohen 1998; Caubet and Pouyssegur 1997, Simmons 1999). Whatever the origin of the colonists, the major importance of this site is that it has served the Aceramic culture of Chirokoitia with a considerable ancestor and has provided a coherent background for the later Cypriot interaction with the Euphrates zone. It is possible that when Shillourokampos flourished, Aetokremnos hunters still survived until they were totally extinct or absorbed by the PPNB newcomers, since these two groups were totally differently oriented in terms of economic strategies and mentality. In other words the neolithisation of Cyrpus is not indigenous, since it did not develop out of internal changes in the economy of Akrotiri through the progressive transformation of Akrotiri foragers into farmers, but was totally imported by foreign groups from the temperate zone.

In contemporary Aegean, changes are slow and have totally different economic and social orientations. The hunting-gathering economy we knew from the previous period still prevails to food production on Youra, while the new site of the period, cape Maroulas on Kythnos, fits well the same Mesolithic pattern. The location of Maroulas (Honea 1975; Sampson 1996; Sampson 1998) falls perfectly the Epipalaeolithic settlement selection criteria-totally differing from contemporary Shillourokampos patternwhich we have also observed in Youra and Akrotiri: location at a plateau edge of low elevation (actually 3-5 m., but at least 40-45 m. in 7,000 BC), dominating view, proximity to the sea and immediate access to the interior of the island at the same time, visual contact with the adjacent islands and the navigation routes to the southern Cyclades, northern orientation of the site to take advantage of the strong breezes which keep away insects and provide comfort in summers. In addition, but more importantly, the Mesolithic/ Epipalaeolithic pattern represented by Maroulas' circular or ellipsoid stone architecture, (Fig. 4) with pebble or slab floors and underlying burials (Sampson 1996), which seem to echo Natoufian traditions and have raised similar questions with Natoufian structures concerning sedentism (Rafferty 1985; Valla 1998).

COCNCLUSIONS

It is remarkable that at the time when Cyprus has developed a food production economy and up-to-date architecture and lithic industries, the Aegean stays behind, keeping pig breeding as a very secondary subsistence strategy and

favouring archaic material traditions, whose origins come from so far that we cannot explain how they became known to the Aegean groups. The fact that the Aegean did not develop with the same speed as Cyprus and stayed traditional maintaining older patterns should be due to cultural isolation and insularity of the Aegean basin, despite the broad social sphere and network of groups (Cherry and Torrence 1982) implied by the presence of Melian obsidian in the Cave of Cyclope (Sampson et al. 1998), 300 km far from its place of origin. However, isolation should be a major reason why Aegean fishermen did not get familiar with neolithisation, unless some "filtering" effect (Lewthwaite 1990) has kept the dispersion of new trends away from this region. As a matter of fact, at the time, such cultural delay also occurs in the western Asia Minor which for some reason is better synchronised with the Aegean rather than SE Anatolia.

On the contrary, Cyprus was much favoured at the time. The delay of Mesolithic-to-Neolithic transition in the Aegean suggests that indigenous processes did not suffice to bring cultural change, and that the role of communication is highly important in accelerating economic and social transformations through the mediation of new ideas.

THE AEGEAN NEOLITHIC AND THE ACERAMIC CYPRUS.

It is remarkable that when the Aegean shifted to a full pottery Neolithic economy around 6500/6300 BC_almost at the same time in mainland Greece (Nea Nikomedeia, Sesklo, Argisa, Franchthi), the Aegean islands (Cave of Cyclope, Aghios Petros, Aghio Gala) and Crete (Knosos)- following similar developments in Anatolia and the Near East, Cyprus, although fully neolithised, developed a distinct Aceramic culture (Stanley-Price 1979; LeBrun 1981; LeBrun 1984; LeBrun et al. 1987; Todd 1987), after a hiatus postdating Shillourokampos. The Cypriot Aceramic Neolithic, dated along the

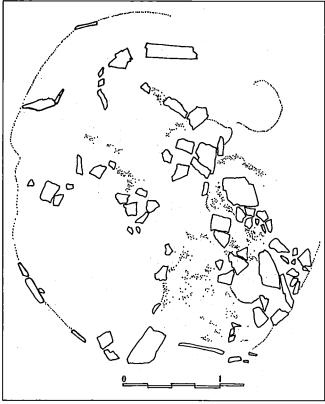


Fig. 3. Kythnos, Ellipsoid pavement (caurtely by A. Sampson)

PPNC and early Near Eastern Pottery Neolithic (middle 7th-middle 6th mil. BC) has no mainland counterparts, since it is characterised by archaistic features in tool industries, burial habits and material culture. Chirokoitia, Lemba, Troulli, Limnitis and cape Andreas-Kastros have adopted the Levantine circular architecture, some centuries later than Kythnos, and contemporary with the earliest Greek Neolithic. It is not only to the adjacent mainland zones, but also to the preceding Shillourokampos culture, hinting no archaisms, that the Aceramic Neolithic of Cyprus seems unexpected. It is therefore obvious that this idiocyncratic conservativism makes Aceramic Cycrus comparable to Near Eastern Preceramic and Aegean Mesolithic cultures and gives us all reason to discuss it here.

The erection of circular huts by Aceramic Cypriots the Maroulas islanders, associates both sites with an archaistic mentality, although their economies are different and of different chronological date (Tab. Circular huts flourished during the Levantine Kebaran (Plog, Ain Gev I) and Natoufian cultures (Cave Hayonim, Wadi Fallah, Beidha, Ain Mallaha) as far as northern Syria (Mureybet I-II) between the 16th and 11th mil. BC, and survived until Proto-Neolithic (Jericho) and PPNA cultures in the Levant and even SE Anatolia, such as in the village of Hallan çemi (Rosenberg et al. 1995). It declines in competition with the emerging rectangular architecture, but some final survivals can still be found in a few early PPNB (9th mil. BC) sites of the Levant, such as Beidha, Munhata and Tell Ramad. The of structures Kythnos contemporary to these latest

Levantine examples. All later examples come from marginal zones and are due to conservatism (Mellaart 1975). These, include, apart from the circular buildings of Aceramic Cyprus, some later examples of Pottery Neolithic from Middle Halaf Mesopotamia (Mellaart 1975) and from a couple of 6th, 5th millenium BC Transcaucasian sites (Mellaart 1975).

Circular structures have been associated with nomadism, while rectangular architecture with sedentism (Lieberman 1998), which may be of some meaning for Kythnos, but contradicts with the full sedentary Neolithic economy of Aceramic Cyprus. However, the erection of stone structures by Aegean, European (Larsson 1990; Engelstad 1990) and Near Eastern Epipalaeolithic groups, in association with the underlying burials, indicate that these people felt some stronger connection

with their certain location, which seems to have developed to a substantial value in their world of meanings, maybe symbolising their ancestors, and for this reason serves as their permanent place of return, if not as their very sedentary village. Edwards (1989) recalls a similar pattern practiced by contemporary nomadic groups, such as the Bedhouins of Arabia or the Balkan specialised pastoralists/transhumants (Sarakatsanoi, Vlachs), who change permanent substantial dwellings between summer and winter.

The archaisms of Kythnos and Cyprus were at first sight explained as phenomena of island isolation. As for Cyprus (LeBrun et al. 1987), this is not an adequate explanation given the population explosion establishing large fortified settlements at that stage and the absence of any circular structure hinted by earlier Cypriot cultures. It is possible that circular architecture had survived in the minds and traditions of people who left Levant for marginal areas in late PPNB (Mellaart 1975, Goring-Morris and Belfer-Cohen 1998, Caubet and Pouyssegur 1997, Simmons 1999). Cyprus could have been one such destination for populations who had not yet acquired any knowledge on firing pottery techniques in their motherland. Such theory is also supported by the affinities that the burial practices of Choirokitia (LeBrun et al. 1987) point to Levantine prototypes echoing Natoufian traditions. We thus suggest that it is not isolation, but conservative group identity formed at a pre-colonisation stage that archaistic features of Aceramic Cyprus are due to. We however believe that insularity acted as a major parameter favoring conservatism at a post-colonisation stage, when there was not adequate interaction to compete with their idiosyncratic culture. Such conservatism could very well be the reason why they declined and vanished.

But how have the groups of Kythnos come aware of this tradition, and what were the reasons why they were selected to express their material culture? Is there any cultural affinity apart from partial formal similarity between cape Maroulas establishment and the fishing villages at Limnitis, Troulli and cape Andreas-Kastros (LeBrun 1981) composed of circular huts settled on the edge of coastal promontories? To explain Kythnos as the result of some population movements by the sea from Anatolia or the Levant (Runnels 1995) or directly associate it with Cyprus, seems rather too much. It would be more realistic to argue for some gradual spread of ideas rather than of people themselves in late PPNB, since ideas and knowledge do not walk like humans, but run ahead and travel longer distances much faster than any human group.

GENERAL CONCLUSIONS.

As a general conclusion, the new picture emerging in the eastern Mediterranean in the early Holocene is that of active peoples exploiting unspoiled habitats, which has replaced the older argument of vacant islands. However, Cypriot and Aegean cultures have considerable differences in terms of rate and date of neolithisation, which is equally the result of different group identity and different interaction opportunities.

In the beginning both areas follow similar Epipalaeolithic orientations, but the Aegean is open and flexible to new ideas, while Cyprus is "closed" and conservative. Compared to the Greek mainland, the Aegean has developed its own cultural identity and conceptual world, determined by marine adaptations, broad social sphere, and increased susceptibility, whose role in transmitting new trends to the mainland was crucial. Every new Aegean cultural phase developed out of the older one by slow gradual progress and indigenous process which has absorbed any external influences. As a conclusion, neolithisation takes more time in the Aegean, because changes were not imported, on the contrary to Cyprus, where not any indigenous procedures have occurred, since the older populations of Akrotiri vanished and newcomers at Shillourokampos have taken their place with all modern ideas acquired in their

motherlands. It is remarkable that within a few centuries Cyprus shifted from up-to-date cultures such as Shillourokampos, to marginal ones such as the Aceramic Neolithic, at a time when a full Neolithic economy was introduced to the Aegean. In other words, the Aegean prehistory is characterised by an unbreakable stratigraphic sequence since its very beginning, while Cypriot Neolithic is no more than a series of individual episodes separated by considerable gaps. Although keeping in mind that deterministic explanations (the culture-area concept) should be regarded with skepticism, we are challenged to attribute part of this broken sequence to geographical parameters, such as the size and the position of the island Cyprus. Older theories on island subsistence and colonisation models have used such criteria along with biogeography (MacArthur and Wilson 1967; Evans 1973; Evans 1977; Case and Cody 1987; Keegan and Diamond 1987; Kirch 1988; Held 1989) to support Mediterranean models of island adaptation (Lewthwaite 1990; Cherry 1990; Cherry 1992; Runells 1995; Patton 1996; Simmons 1999), but after the new data these theories need reconsideration.

In the case of Cyprus we argue for the major influential role that the distance from the mainland must have played to the development of cultural idiosyncrasies (60 to 80 km. in 7,000

BC, when sea level was about -35 m. according to Stanley-Price 1977; Held 1989; Gomez and Pease 1992; Simmons 1999), along with the absence of any intermediate stops to bridge the gap. On the contrary to the Aegean islands, which look at the outside as they are "shallow," close one another and in visual contact with all surrounding lands (see Van Andel and Shakleton 1982; Kraft et al. 1982; Fairbanks 1989; Sampson 1998 for Aegean sea level fluctuations), Cyprus, as well as any big island, such as Crete, Sicily, Sardenia and Corsica, is of such deep inland that any colonist is "absorbed," especially as he cannot easily travel back to his motherland. Any travel to Cyprus should have taken the form of an expedition organised on a long term plan, and would necessitate longer stay on the island as the distance and open sea would prevent early seafarers from a quick go-and-return journey as in the Aegean. Cultural breaks and hiatuses of early Cypriot prehistory should be assigned to this distance, which rendered humans who colonised Cyprus to some kind of endemic destined to shrink and decline. Only after navigation techniques have developed by Late Neolithic (5th mil. BC), does Cyprus break isolation and is capable of maintaining continuous contacts with the outer world, which discourages conservatism and ensures renovation and normal cultural sequence.

ACKNOWLEDGEMENTS.

Many thanks are due to A. G. Leventis Foundation for sponsoring this research and personally to Dr. V. Karageorghis for his hospitality in Cyprus. I also wish to thank the anonymous referee for his critical comments and Prof. T. Whitelaw, Cambridge, who has been very willing to read the manuscript and make suggestions.

REFERENCES

Ammerman, A. J. and Cavalli-Sforza, L. L. (1984) The Neolithic Tradition and the Genetics of Populations in Europe, Princeton.

Bar-Yosef, O. and Vall, F. R. (eds.) (1991) *The Natulian Culture in the Levant*, Ann Arbor, International Monographs in Prehistory.

Bonsall, C. (ed.) (1990) The Mesolithic in Europe. Papers Presented at the Third International Symposium (Edinburgh 1985), Edinburgh.

Case, T. and Cody, M. (1987) Theories of island biogeography. American Scientist, vol. 75, 402-441.

- Caubet, A. and Pouyssegur, P. (1997) Aux Origines de la Civilisation: L'Orient Ancien, Terrail, Paris.
- Cherry, J. (1979) Four problems in Cycladic prehistory. In J. Davis and J. Cherry (eds.), Cycladic Prehistory, University of California, Los Angeles, 22-47.
- Cherry, J. (1981) Pattern and process in the earliest colonization of the Meditterranean islands. Proceedings of the Prehistoric Society, vol. 47, 41-68.
- Cherry, J. (1984) The initial colonization of the west Mediterranean islands in the light of island biology and paleogeography. In W. Waldren, R. Chapman, J. Lewthwaite and R. Kennard (eds.), *The Deya Conference of Prehistory: Early Settlement in the Western Mediterranean Islands and their Peripheral Areas*, British Archaeological Reports 229L, Oxford, 7-27.
- Cherry, J. (1985) Islands out of the stream: Isolation and interaction in early east Mediterranean insular prehistory. In B. Knapp and T. Stech (eds.), Prehistoric Production and Exchange in the Aegean and East Mediterranean, Institute of Archaeology Monogrpah 25, University of California, Los Angeles, 12-29.
- Cherry, J. (1990) The first colonization of the Mediterranean islands: A review of recent research. Journal of Mediterranean Archaeology, vol. 3, 145-221.
- Cherry, J. (1992) Paleolithic Sardinians? Some questions of evidence and method. In H. Tykot and T. K. Andrews (eds.), Sardinia in the Mediterranean: A Footprint in the Sea, Sheffield Academic Press, Oxford, 29-39.
- Cherry, J. (ed.) (1995) Colonization of Islands. World Archaeology, vol. 26.
- Cherry, J. and Torrence, R. (1982) The earliest prehistory of Melos. In A. C. Renfrew and M. Wagstaff (eds.), An Island Polity: The Archaeology of Exploitation in Melos, Cambridge University Press, Cambridge, 24-34.
- Edwards, P. C. (1989) Probems of recognising the earliest sedentism: The Natufian example. *Journal of Mediterranean Archaeology*, vol. 2, 5-48.
- Efstratiou, N. and Mantzourani, E. (1997) The beginning of the Neolithic period in Greece and Cyprus: Common research and interpretation problems. In *Cyprus and the Aegean in Antiquity. From the Prehistoric Period to 7th c. B.C. Proceedings of International Congress, Nicosia 8-10/12/1995*, Nicosia, 7-20.
- Engelstad, E. (1990) Mesolithic house sites in arctic Norway, Bonsall 1990, 331-337.
- Evans, J. (1973) Islands as laboratories of cultural change. In C. Renfrew (ed.), *Explanation of Cultural Change: Models in Prehistory*, University of Pittsburg Press, Pittsburg, 517-520.
- Evans, J. (1977) Island archaeology in the Mediterranean: Problems and opportunities. World Archaeology, vol. 9, 12-26.
- Fairbanks, R. G. (1989) A 17,000 year-old glacio-eustatic sea level model: influence of glacial melting rates on the Younger Dryas event and deep ocean circulation. *Nature*, vol. 342, 637-642.
- Gomez, B. and Pease, P. (1992) Early Holocene Cypriot coastal palaeogeography, RDAC, Cyprus, 1-8.
- Goring-Morris, N. and Belfer-Cohen, A. (1998) The articulation of cultural processes and Late Quaternary environmental changes in Cisjordan. *Paléorient*, vol. 23, 71-93.
- Grigson, C. (1990) Bird-foraging patterns in the Mesolithic. Bonsall 1990, 60-72.
- Guillaine, J., Coularou, J., Briois, Fr., Carrère, I. and Philibert, S. (1993) Fouille Néolithique. BCH, vol. 117, 716-717.
- Guillaine, J., Coularou, J., Briois, Fr., Carrère, I. and Philibert, S. (1994) Shillourokambos. In Travaux de l'École Française à Amathonte en 1993. *BCH*, vol. 118, 499-501.
- Guillaine, J., Briois, Fr., Coularou, J. and Carrère, I. (1995) L'établissement Néolithique de Shillourokambos (Parekklisha, Chypre). Premiers résultats, RDAC, Cyprus, 11-32.
- Guillaine, J., Deveze, P., Coularou, J. and Briois, F. (1999) Tête en pierre sculptée dans le Néolithique Pré-Céramique de Sillourokampos (Parekklisha, Cypre), *RDAC*, Cyprus, 1-11.
- Held, S. (1989) Colonization cycles in Cyprus: 1. The biogeographic and paleontological foundations of early prehistoric settlement, *RDAC*, Cyprus, 7-28.
- Held, S. O. (1992) Pleistocene Fauna and Holocene Humans: A Gazeteer of Paleontological and Early Archaeological Sites on Cyprus, Studies. Mediterreanean Archaeology, vol. 95, Jonsered.

- Honea, K. (1975) Prehistoric remains on the island of Kythnos. AJA vol. 79, 277-279.
- Horwitz, K. L., Tchernov, E., Ducos, P., Becker, C., Von Den Driesch, A, Martin, L. and Garrand, A. (1999) Animal husbandry in the southern Levant. *Paléorient*, vol. 25, 64 ff.
- Keegan, W. and Diamond, J. (1987) Colonization of islands by humans: A biogeographical perspective. Advances in Archaeological Method and Theory, vol. 10, 49-92.
- Kirch, P. (ed.) (1988) Island Societies: Archaeological Approaches to Evolution and Transformation, Cambridge University Press, Cambridge.
- Kraft, J. C., Kayan, J. and Erol O. (1982) Geology and palaeographic reconstruction of the vicinity of Troy. In G. Rapp and J. A. Gifford (eds.), *Troy: The Archaeological Geology*, Cincinnati.
- Kvamme, K. and Jochim, M. (1990) The environmental basis of Mesolithic settlement. Bonsall, 1-12.
- Larsson, L. (1990) Late Mesolithic settlement and cemeteries at Skateholm, Southern Sweden. Bonsall 1990, 367-378.
- LeBrun, A. (ed.) (1981) *Un Site Néolithique Préceramique en Chypre: Cap Andreas-Kastros*, Editions Recherche sur les Civilisations, Mémoire no 5, Paris.
- LeBrun, A. (ed.) (1984) Fouilles Récentes à Khirokitia (Chypre) 1977-1981, Editions Recherche sur les Civilisations, Mémoire no 41, Paris.
- LeBrun, A. (1997) Chypre néolithique préceramique au large du monde égéen. In *Cyprus and the Aegean in Antiquity.*From the Prehistoric Period to 7th c. B.C. Proceedings of International Congress, Nicosia 8-10/12/1995, Nicosia, 1-6.
- LeBrun, A., Cluzan, S., Davis, S., Hansen, J., Renault-Miskovski, J. (1987) Le Néolithique préceramique de Chypre. L'Anthropologie, vol. 91, 283-316.
- Lewthwaite, J. (1990) Isolating the residuals: The mesolithic basis of man-animal relationships on the Mediterranean islands, Bonsall, 541-555.
- Lieberman, D. E. (1998) Natufian "sedentism" and the importance of biological data for estimating reduced mobility. In T. R. Rocek and O. Bar-Yosef (eds.), Seasonality and Sedentism. Archaeological Perspectives from Old and New World Sites, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, 75-92.
- MacArthur, R. and Wilson, E. (1967) The Theory of Island Biogeography, Princeton University Press, Princeton.
- Mellaart, J. (1975) The Neolithic of the Near East, Thames and Hudson, London.
- Otte, M., Yalçinkaya, I., Leotard, J., Kartal, M., Bar-Yosef, O., Kozlowski, J., L_pez, I. and Marshack, A. (1995) The Epi-Palaeolithic of Öküzini Cave (SW Anatolia) and its mobiliary art. *Antiquity*, vol. 69, 931-944.
- Patton, M. (1996) Islands in Time: Island Sociogeography and Mediterranean Prehistory, Routledge/ London/ New York.
- Perlès, C. (1990) Les industries lithiques taillées de Franchthi (Argolide, Grèce) II. Les industries du Mésolithique et du Néolithique Initial, Excavations at Franchthi Cave, Greece 5, Indiana University Press, Bloomington-Indianapolis.
- Peters, J., Helmer, D., Von Den Driesch, A. and Sana Segui, M. (1999) Early animal husbandry in the northern Levant. *Paléorient*, vol. 25, 27-47.
- Rafferty, J. E. (1985): The archaeological record on sedentariness: Recognition, development, and implications. *Advances in Archaeological Method and Theory*, vol. 8, 113-156.
- Reese, D. S. (1995) *The Pleistocene Vertebtate Sites and Fauna of Cyprus*, Geological Survey Department Bulletin vol. 9, Nicosia.
- Rosenberg, M., Nesbitt, R., Redding, R. and Strasser, T. (1995) Halan Çemi Tepesi: Some preliminary observations concerning Early Neolithic subsistence behaviors in eastern Anatolia. *Anatolica*, vol. 21, 1-12.
- Rosenberg, M., Nesbitt, R., Redding, R. and Peasnall, B. L. (1998) Halan cemi Tepesi pig husbandry and post-pleistocene adaptations along the Taurus-Zagros arc (Turkey). *Paléorient*, vol. 24, 25-41.
- Runnels, C. (1995) Review of Aegean prehistory IV: The Stone Age of Greece from the Paleolithic to the advent of the Neolithic. AJA, vol. 99, 699-728.

- Sampson, A. (1996) New evidence on the Mesolithic. Archeologia ke Technes, vol. 61, 46-51.
- Sampson, A. (1998) The Neolithic and Mesolithic occupation of the cave of Cyclope, Youra, Alonnessos, Greece. BSA, vol. 93, 1-22.
- Sampson, A., Kozlowski, J. and Kazianowska M. (1998) Entre l'Anatolie et les Balkans: une séquence Mésolithic-Néolithic de l'île de Youra, Sporades, ERAUL vol. 4, Liège.
- Sampson, A. (ed.) (2001): The Archaeological Work in the Northern Sporades, Proceedings of Local Symposium (Alonnissos, 10/1996), Municipality of Alonnissos, Alonnissos.
- Simmons, A. H. (1999) Faunal Extinction in an Island Society. Pigmy Hippopotamus Hunters of Cyprus, Plenum Publishers, New York/ Boston.
- Stanley-Price, N. (1977) Colonization and continuity in the early prehistory of Cyprus. World Archaeology, vol. 9, 27-41.
- Stanley-Price, N. (1979) Early Prehistoric Settlement in Cyprus: A Review and Gazeteer of Sites, c. 6500-3000 BC, BAR Intern. Series 65, Oxford.
- Todd, I. (1987) Vasilikos Valey Project 6: Excavations at Kalavasos-Tenta I. Studies in Mediterannean Archaeology 71, Goeteborg.
- Valla, F. R. (1998) Natufian seasonality: A Guess. In T. R. Rocek and O. Bar-Yosef (eds.), Seasonality and Sedentism. Archaeological Perspectives from Old and New World Sites, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Mass., 93-108.
- Van Andel, Tj. H. and Runnels, C. N. (1988) An essay on the "emergence of civilization" in the Aegean world. *Antiquity*, vol. 62, 234-247.
- Van Andel, Tj. H. and Shackleton, J. C. (1982) Late Paleolithic and Mesolithic coastlines of Greece and the Aegean. *Journal of Field Arcaheology*, vol. 9, 445-454.
- Vaufrey, R. (1929) Les éléphants nains des îles Méditerranéenes, Paris.
- Vigne, J. and Buitenhuis, H. (1999) Les premiers pas de la domestication animal à l'Ouest de l' Euphrate, Chypre et l'Anatolie centrale. *Paléorient*, vol. 25, 49-62.
- Wigand, P. and Simmons, A. H. (1999) The dating of Akrotiri Aetokremnos, In Simmons 1999, 193-216.
- Woodman, P. (1990) The Mesolithic of Munster: a preliminary assessment. Bonsall, 116-124.
- Zvelebil, M. (1985) Mesolithic societies and their transition to farming. In M. Zvelebil (ed.), Hunters in Transition. Mesolithic Societies of Temperate Eurasia and their Transition to Farming, Cambridge University Press, Cambridge, 167-188.