

Editorial

Dialogue

Peltenburg, PPN Cyprus
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Katsarou, Simmons: Comments
Peltenburg: Response to Commentators

Supra-Regional Concepts II

Towards New Frameworks: Supra-Regional Concepts
in Near Eastern Neolithization: 4ICAANE
Workshop, Berlin, 1-2 April 2004

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NEO-LITHICS 1/04

The Newsletter of
Southwest Asian Neolithic Research

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Editorial

The first half of 2004 witnessed very fruitful meetings of Near Eastern Neolithic issues. Starting with the 5th PPN Chipped Stone Industries Workshop at Fréjus on March 1-5 (*cf.* this issue), activity continued in the SAS and BANEA conferences. The 4ICAANE Workshop on Supra-Regional Concepts in Near Eastern Neolithization was held April 1-2 in Berlin (*cf.* this issue), and the International Conference on the History and Archaeology of Jordan in Petra during May 23-27 brought many colleagues together again.

All these meetings reflect the increasing intensity of Near Eastern Neolithic research at a level not reached before. When one considers the large number of papers, we sense that the research has become a self-multiplying phenomenon on its own. More than ever, the atmosphere in the audience halls and in the corridors demonstrates the positive effects of stimulation when borders

of countries and minds are transcended: Research can develop on the basis of personal respect and friendship, and new international and inter-school cooperation can be established through shared insights, with research agendas driven by specific (even general) needs rather than on stagnant policies. More than ever, our research is breaking through the circles of confined alliances, be they national, traditional, or even chauvinistic in some degree or another.

The excitement of this new trend emerges despite the appalling and calamitous macropolitical situation in the Near East. But our research meetings are on the opposite track, for they demonstrate that our experience and understandings bring us together regardless of our varied backgrounds and beliefs.

Hans Georg K. Gebel and Gary O. Rollefson

Introductory Note on the Dialogue

As outlined in the editorial of *Neo-Lithics* 1/03, the new Dialogue section in this newsletter aims to promote the necessary exchange on topics that are vital for either conceptual / theoretical progress or for the understanding of research results that might have the potential to make us rethink positions we have held hitherto. Such dialogues – planned to be presented regularly in *Neo-Lithics* – should start with a pointed or provocative statement on a new or controversial topic submitted by one researcher, like the clear-cut notes on PPN Cyprus Edgar Peltenburg has written for this issue. The editors forwarded Peltenburg's paper to twelve colleagues, all of them specialists in certain aspects of the subject under discussion. They were invited to reply by writing a short

comment or critique. Eight scholars responded positively to our letter of invitation, and six finally agreed to participate in the discussion. The comments we received were immediately sent to Edgar Peltenburg to give him the chance to answer or even reconsider his theses. Peltenburg's final statement arrived by the end of April. All comments were taken into consideration, with the sole exception of the one by Le Brun which arrived only after Peltenburg had departed for fieldwork in Syria.

On the pages below the reader now may follow this dialogue on PPN Cyprus as it developed among the authors.

For a next Dialogue section, we invite our readers to propose topics they consider necessary to promote research, understanding, and exchange in the Near Eastern Neolithic.

Jürgen Baumgarten

Cyprus: A Regional Component of the Levantine PPN

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Before the recent discoveries of early Neolithic occupation in Cyprus, Gopher articulated the widely held opinion that the "Pre-Pottery Neolithic (PPN) of the Levant can be viewed as a single cultural system stretching from the Middle Euphrates to southern Sinai" (Gopher 1989: 91). The purpose of this dialogue note is to argue for a revision of that view to include Cyprus, and to make suggestions that flow from such a revision.

PPN traits on Cyprus

Islanders *c.* 8000 cal BC shared a wide range of cultural traits with N. Levantine mainlanders. They possessed the skill, desire and inter-generational transmission of knowledge to employ the naviform technology for crafting blades (Briois *et al.* 1997; McCartney and Gratuze 2003). Technology transfer is an embedded process involving relations between expert and novice, and hence it is appropriate to infer movement of people onto the island. Choice of technique, implying learned motor skills and the necessary social incentives, was allied to production of prestige mainland items, Byblos and Amuq points. They occur infrequently on Cyprus, and so production was more for status than function. Knappers searched for familiar translucent cherts which were much scarcer than the poorer quality opaques of later, Cypro-LPPNB production. McCartney and Briois (above) have listed many other Levantine chipped stone traditions

such as glossed pieces, unidirectional pressure techniques and types of obsidian used on the island. Import of Anatolian obsidian is typical of the wider Levantine PPN interaction sphere.

Other continental features repeated on the island are overt symbols. Examples include feline, female and plaster figurines, locally made polished stone macehead, stone "baton", and small, often flat, stones incised with hatched and other designs. There is also evidence for secondary skull removal and reburial (Peltenburg 2003: 92-95).

Although later in time, the hierarchical layout of Cypro-LPPNB Tenta, with a proliferation of small buildings on slopes below a dominant central structure some 3-6 times their size, has the same spatial organisation as at Jerf el Ahmar in N. Syria (Todd 1987: Fig. 20; Stordeur and Abbès 2002). The Tenta plan is the last of a sequence in which the earlier central buildings were larger, one with red painted floor. Its circular buildings belong to a tradition now known to exist in the earliest Shilloukambos levels (Guilaine and Briois 2001: 41), so Tenta's analogous arrangement of social space may have a long history. The settlement was enclosed, a practice also attested in N. Syria, as at Halula.

Other, more explicitly functional items of material culture demonstrate the extent to which islanders adhered to mainland lifestyles: grooved stones, notched pebbles, stone disc, hammerstones and techniques of bone-work-

ing. Robust and influential contacts with neighbouring regions were maintained, as is evident from the recurrence of obsidian imports, the early developments of the chipped stone industry in line with mainland trajectories and the likelihood of multiple replenishments of animals (Horwitz *et al.* 2004). The decline in obsidian and increasing preference for opaque raw material for chipped stone after *c.* 7500 cal BC provide a terminus for a significant role for Cyprus within the Levantine PPN.

Earlier groups from the North Levant

Cypro-PPNB buildings are predominantly circular, many of them with over-sized pillars and piers recalling their more elaborate forebears at Göbekli and other mainland sites. Both the Tenta layout and circular buildings, therefore, are retentions of PPNA built environments. Several lines of evidence suggest that they are the result of earlier human occupation on the island. First, McCartney has pointed to the persistence of PPNA chipped stone traditions in Cypro-PPNB assemblages. Second, there is clear evidence that the earliest occupants of Mylouthkia 1A and Early A Shillourokambos had detailed information on water sources (wells tapping underground streams at Mylouthkia) and varied local resources like red ochre and picrolite, knowledge that implies earlier presence. Third, the variety of faunal taxa in the earliest deposits at Shillourokambos and Mylouthkia indicates a lengthy period for these animals to have become established. Taken together, we may infer the existence of earlier cultivator-herders with close affinities to the northern Levantine PPNA. There are no signs in Cyprus of the agglutinative architecture of central Anatolia.

A regional Mediterranean facies of the PPN

In spite of restricted evidence, observations can be made about Cypro-PPNB communities. Some were sedentary or semi-sedentary as early as the mid-9th millennium cal BC according to material from the fill of well 116 at Mylouthkia. It included constructional matter such as white and red smoothed daub with timber impressions, ecofactual data pointing to fishing and farming at different seasons and remains of the house mouse, an introduced commensal regarded by some as a strong marker of permanent occupation. The well itself, both in terms of concept and labour (min. 6.25 m³ volume of soil removal), also suggests a degree of permanence. Other Cypro-PPNB wells at Mylouthkia and Shillourokambos have no contemporary mainland parallels and so they are a regionally distinctive facet developed to contend with drought and water retention problems in Mediterranean environments.

Other local features include the the long-lived circular residential architecture, a form often equated with hunters and herders of the marginal, desert zones. There

are probably social reasons for its persistence, but it is the case that the Cypriot subsistence economy was heavily focussed on deer hunting and management (Croft 1991). Recent data from the mainland now suggests that what was regarded as a uniquely insular procurement strategy may be part of a long-lived mainland tradition. Üçağızlı Mağarası, a cave on the coast opposite Cyprus, has a faunal assemblage very close to that of the PPN island: goat, deer, cattle, pig, as well as dog, fox and cat (Güleç *et al.* 2002: 262, Table 3). The high proportion of deer is particularly noteworthy in this context, not least because deer are barely evident in the wider northern Levantine corridor that supplies so many material culture parallels for the insular PPN (*cf.* von den Driesch and Peters 2001). The Upper Palaeolithic cave deposits are much earlier, of course, but taxa proportions there raise the possibility of a Syro-Cilician tradition of intensive deer exploitation ancestral to the tenacious Cypriot bias towards a deer economy tailored to a similar Mediterranean environment.

There are also reasons to suggest that coastal dwellers of Syro-Cilicia were instrumental in communications with the island. Only they had the local expertise for initial seagoing enterprises, coupled with an awareness of the arable potentials of Cyprus. Once established, Cypriots would also have engaged in this maritime interaction. So, features which today we think of as peculiarly insular may well have been part of a wider Syro-Cilician *facies* of the PPN. This could be tested by investigation of suitable sites on the mainland.

If Syro-Cilicia supplied the fauna (*cf.* Vigne *et al.* 1999: 55 for Cilicia), domestic-type cereals of the type found in well 116 at Mylouthkia, may also have existed there. AMS dates of *c.* 8500 cal BC from barley and two other cereal seeds provide a *terminus ante quem* for the existence of this package in Syro-Cilicia (Peltenburg *et al.* 2003: 59-71, 83-85). The northern Levantine corridor, often regarded as the core area for the earliest agriculturists, is not just too distant, it has an unconvincing donor pedigree. In spite of the earlier occurrence of the same (wild) types of cereals there, its record of domestic crops is discontinuous (*e.g.* Willcox 2002) and no contemporary site has yielded a package of domestic crops as at Mylouthkia 1A. If, as seems likely, associated farming practices derive from the mainland, they do not seem to have come from the Corridor. Dispersal, even by patch jumping, is unlikely from that area. Two observations follow. First, it increases the likelihood of multi-centric origins for the domestication of crops (*cf.* Jones and Brown 2000). Second, we need a paradigm shift to recognise that autonomous transitions from foraging to farming took place outside the corridor. Its alleged exclusivity is more a reflection of current fieldwork than past reality.

The chronology of Mylouthkia 1A domestic-type seeds places Cyprus at the forefront of a commitment to a farm-

ing lifestyle. It is assumed that, of the wild progenitors, only barley existed on the island and that hence other cultigens were introduced. In circumstances where staples may have been scarce, greater effort would have been paid to obtaining maximum yields from meagre stocks of morphologically domestic seedcorn initially imported from neighbouring regions. Such adaptive pressure would have clearly shown the advantages of agriculture.

Immigrationist, indigenist and integrationist explanations

To this point, discussion has been predicated on the probability of a migration of PPN farmer-herders to the island around the mid-9th millennium cal BC. They successfully colonised territory where previously we only have evidence of groups at Akrotiri. And yet, the history of discovery of early human occupation on the island (Fig. 1) shows an inexorable extension back in time, narrowing the gap between earlier hunter-foragers and colonists. In addition, migrants relied on pre-existing information networks for knowledge of their goal, so the likeliest implication is that visitors or settlers will eventually fill the remaining occupational gap in Fig. 1.

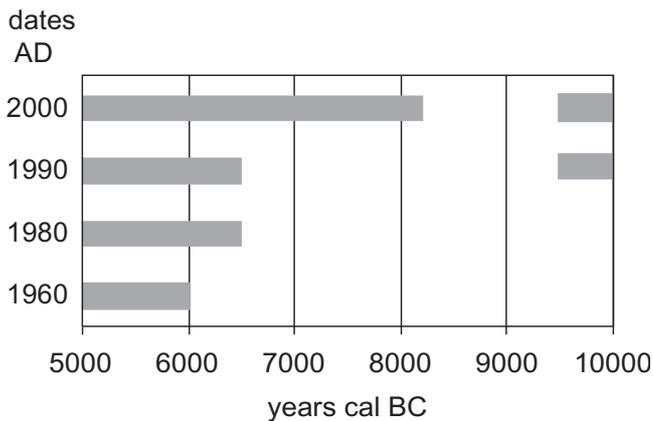


Fig. 1. Temporal revisions in the later 20th century AD of evidence for human occupation on Cyprus.

Such groups faced sustenance problems. With few, if any, megafauna available, they faced a scarcity of endemic subsistence resources. People associated with the last levels at Akrotiri were reduced to shellfish and birds (Simmons *et al.* 1999: 170-178, 323). Relying on ethnographic, morphometric and age, sex and skeletal element representation evidence, Horwitz, Tchernov and Hongo (2004) propose that wild animals were intentionally released on the island to serve as food sources. This could have been done by hunting parties during and after the gap, at a time when some argue that long-distance hunting intensified in the Levant (Bar-Yosef and Belfer-Cohen 1989: 64) and we encounter efforts to tame landscapes. The varied spectrum of translocated animals — dog,

goat, sheep, fallow deer, pig and cattle — during the later 9th millennium cal BC is better interpreted as the result of a lengthy process than a Noah’s ark of introductions.

An outstanding question, one germane to processes of Neolithisation, is whether domestication was undertaken by indigenous hunter-gatherers, colonist farmers or both. I addressed the indigenist / immigrationist debate in Peltenburg *et al.* 2003: 93-99 and concluded that available evidence favoured migrant farmers who, however, were part of a longer process of colonisation. At a recent conference, Watkins (2004) hypothesized that complex, sedentary hunter-gatherer islanders brought over plants and animals which, by dint of close management, developed the morphological traits of domestication. Wild wheat at Shillourokambos, beyond its natural habitat, could support the argument. This version of Binford’s Marginal Zone Hypothesis sees human groups artificially producing stands of grain that characterised optimal zones. In other words, islanders independently invented agriculture. We need to find sites to demonstrate this since Akrotiri shows no signs of complexity, sedentism or an evolution towards the intensification of food procurement. If eventually sustained by the evidence, the indigenist explanation would be an interesting exception to the general observation that complex, sedentary hunter-gatherers existed in areas of resource abundance.

To identify Cyprus as a primary or secondary Neolithic centre is too categorical. The situation seems much more dynamic than suggested by these totalising models. For example, Early Holocene rising sea levels caused ecological stress in a variety of palaeoplains at different times, creating population increases in areas not subject to inundation. In these circumstances, hunter-gatherers may have been motivated to stock the island with animals and to stay there for increasing amounts of time. Were they exclusively the ancestors of the Cypro-PPNB, however, adaptive processes would have led to the occurrence of far more insular traits than are evident. The suite of mainland features described above suggests that there were also significant influxes of PPN farmers. In this reconstruction, colonisation is regarded as a long-term process with successes, reversals and mixed adaptive adjustments as indicated by the chequered history of cattle and the hybrid nature of chipped stone industries. An integrationist explanation in which groups lived on either side of the Klidhes straits and there was a continuum of population transfers of deer-focused Syro-Cilician hunter-gatherers and farmers is most likely (Fig. 2).

Cyprus provides some of the most detailed evidence available for Neolithic dispersals: purposive, highly organised, risky and prolonged movements of people, managed animals and seedcorn. Rather than treat it as an anomaly, we should consider it as a model for a widespread Neolithic phenomenon. While it is not the result of a “spirit of the crusade” (Cauvin 2000: 208), an historically contingent expansionary ethos is evident. This

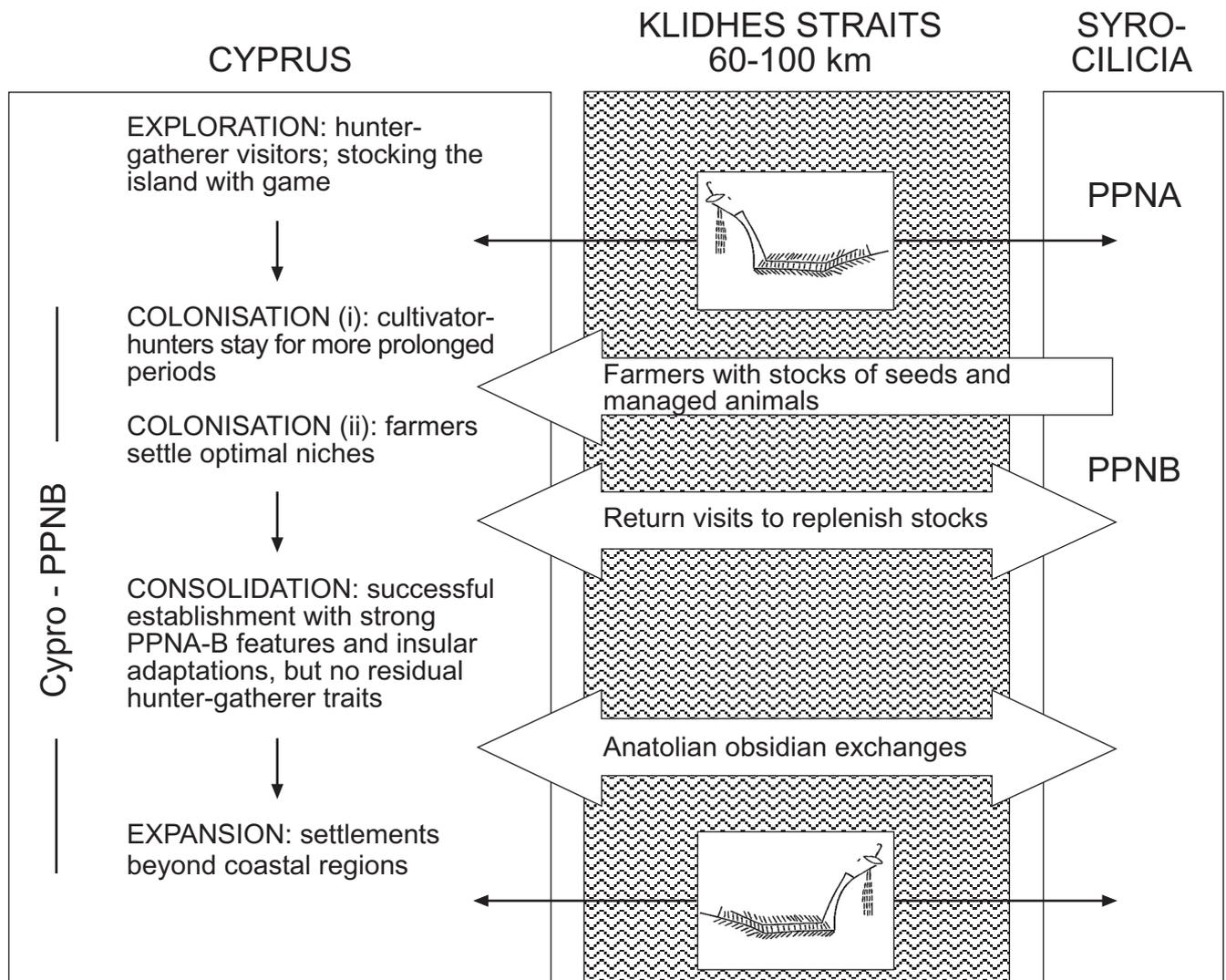


Fig. 2 Integrationist model for interactions between Cyprus and Syro-Cilicia in the PPNA-B

driving force was probably energised by the underlying, reflexive developments of sedentism, cultivation, land tenure and property, leading to territorial acquisition.

Summary

1. Cyprus constituted another region of the Levantine PPNB interaction sphere;
2. The genesis of much of its Neolithic population was in the Syro-Cilician zone;
3. Its farming economy emphasizes the pre-eminence of the North Levant in adopting agriculture and it provides clues on the character of the PPNB in the Syro-Cilician zone;
4. AMS dating of Mylouthkia domesticates provides a *terminus ante quem* of c. 8500 cal BC for the adoption of a farming regime by some communities;
5. The early dates favour multi-centric hotspots for the shift to food production economies;
6. Core areas for the agricultural transition existed outside the Levantine Corridor;
7. The Cypriot subsistence economy, which is different from other parts of SW Asia (mixed, deer-focused), calls for regional histories of agricultural origins;
8. Long-distance, repeated maritime translocation and penning of animals in the 9th millennium cal BC highlights the need for animal-specific (e.g. fox for dress etc.), multi-site approaches to studies of “pre-domestic” fauna and pro-active policies of appropriating stock;
9. This case postulates migration of both cultivators and farmers;
10. Cyprus gradually dropped out of the Levantine interaction sphere after c. 7500 cal BC.

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Cyprus as a Regional Neolithic Entity: Do Researchers Need to Revisit the Concept of the Levantine PPNB Interaction Sphere?

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Archaeological research in Cyprus over the last 10 years has resulted in a re-evaluation of commonly held positions on the timing of the peopling of this island, the economic context under which different Cypriot economic systems were based, and the extent to which these are related to the cultural practices and movement of people from the southern Levant or Anatolia. Stimulated by Gopher (1989), and clearly building upon the work of Bar-Yosef and Belfer-Cohen (1989), Peltenburg argues that the Pre-Pottery Neolithic (PPN) of the Levant can be viewed as a single cultural system stretching from the Middle Euphrates to the southern Sinai, and most importantly for this discussion, should include Cyprus. In making this argument Peltenburg cites a range of similar cultural practices (such as secondary mortuary practices), architecture (including the presence of long-lived circular residential architecture and location of structures), as well as material practices (including the importation of Anatolian obsidian).

I agree wholeheartedly with Peltenburg that active discussion of the possible biological, economic and social interrelationships between Cyprus and the broader Near East is overdue and that there is tantalizing evidence for connections between Cyprus and the southern Levant. However, our opinions diverge as to how we should approach this discussion as well as the material correlates for social interaction and cultural identity. I am, for example, concerned that Peltenburg compresses data from different periods in a way that seriously undermines his main comparative argument. This is seen multiple times with his treatment of architecture from different regions. For example, he links the spatial organization of Cypro-LPPNB Tenta with that of Jerf el-Ahmar, but he does not really substantiate this argument. Similarly, he argues that the Tenta layout and circular buildings are “retentions of PPNA built environments”. He does not, however, provide alternative linking data, suggesting that the organization at Tenta may have a long history. This important argument is not explored or supported in his paper, nor has he made a case for cultural linkage with this example.

As another example, Peltenburg implies a further cultural connection when he remarks “...more explicitly functional items of material culture demonstrate the

extent to which islanders adhered to mainland lifestyles.” The implied intellectual connection is that functional tools reflect cultural interconnections and the importance of a mainland lifestyle. I find this a weak argument. The items listed by Peltenburg are functional tools, and I fail to see why these represent unique traits characteristic of mainland lifestyles rather than the presence of similar functional tools developed independently. Again, my concern here is not with the broader point Peltenburg makes – that there were significant interconnections between Cyprus and the people of other areas – so much as the weak nature of this argument and the limited consideration of the implications of this process.

In several sections of his essay Peltenburg returns to a discussion of regional comparative data, and he explores the implications of material and cultural similarities between Cyprus and the Levant. He raises an interesting point when he argues that the process of cultural exchange and interaction is likely to have been much greater in the past than is reflected in the archaeological record. This is, of course, a comment that can probably be made of almost any period of time, but it is important to keep this in mind when addressing broader arguments for links between Cyprus and the Levant.

From my perspective the major question that arises from Peltenburg’s article is not if Cyprus constituted another region of the Levantine PPNB interaction sphere; rather, the critical question is much broader: how should archaeologists modify/define the Levantine PPNB interaction sphere in light of the considerable amount of archaeological research that has been conducted since 1989 when Bar-Yosef and Belfer-Cohen published their arguments for a PPNB interaction sphere? Moreover, how does this fit with other syntheses, such as those by Cauvin (2000) and Kuijt and Goring-Morris (2002)? The large number of excavations over the last 15 years has dramatically altered our understanding of the spatial distribution of archaeological sites of this period, their associated material culture, and the degree to which social, economic and ritual practices were shared among these communities. These projects have highlighted that there is considerable variation in social and economic practices within single regions, as well as between these regions that are largely subsumed within the context of

the Levantine PPNB interaction sphere. From this perspective, therefore, I think that it is necessary to ask how this new body of research leads us to re-evaluate the utility and breadth of the concept of a Levantine PPNB interaction sphere before assigning a new designation.

Finally, I want to make a few observations about the unique nature of Neolithic past, how these have the potential to inform researchers working in other areas of the Near East, and how we as archaeologists encapsulate the perceived interrelationships between Cyprus and the Near East. As noted by Peltenburg, and explored in detail in a wide-range of other publications, it appears that the processes of colonization and contact by Neolithic communities in Cyprus with other neighboring areas were both extensive and highly complex. As a case study, research in Cyprus has the unique potential to help us understand what is going on in other areas of the Near East. As a geographically separate land mass separated from the mainland, the study of the Cypriot Neolithic has the potential to inform scholars about broader issues of prehistoric trade and exchange, social networks, and regionalism in the Near East, as well as more specific regional questions.

How, then, are we to discuss and label the similarities and differences between Cyprus and neighboring areas? It is interesting in this regard to see that Peltenburg is uncomfortable labeling Cyprus as a primary or secondary Neolithic centre. He argues that these labels are too categorical, as the island situation is more dynamic than suggested by these totalizing models. I strongly agree with Peltenburg: everything we know about Neolithic Cyprus indicates a fascinating interweaving of complex social, economic, and probably political interrelationships between people living on Cyprus and in other nearby areas. At the same time I would argue that in some ways his argument that Cyprus be constituted as another region of the Levantine PPNB interaction sphere represents a call to membership of an even broader totalizing model: that of the Levantine PPNB interaction sphere.

Putting aside the issues of labeling and totalizing, I think that there are two questions being presented here. First, how can archaeologists highlight elements of shared cultural practices within a geographical region during a

specific period of time, and simultaneously remain sensitive to local variation in material culture, social practices, and economic systems? Second, what evidence is there for membership in and a broader cultural identity with these areas? While in need of further development and evaluation, Peltenburg's proposal to broaden the discussion of the Levantine PPNB interaction sphere has the potential to engage researchers in this debate. While I am sympathetic to the broader regional comparative direction of his paper, it is necessary to point out that the archaeological exploration of eastern Mediterranean regional interconnections is still in its infancy. Collectively, Peltenburg's discussion provides a valuable initial step in directing attention towards the questions of how archaeologists should define the PPNB Levantine interaction sphere, and just as importantly, how researchers should compare cultural similarities from different regions in a way that is sensitive to local variation and the evolutionary process.

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Brèves remarques sur une longue histoire

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L'installation sur l'île de Chypre d'un peuplement stable et permanent semble marquée du sceau de la fatalité, du moins dans les deux scénarios les plus élaborés proposés pour en rendre compte. Dans l'un, défendu par N. Stanley Price (1977) il y a près de 30 ans, ce serait la détérioration des conditions climatiques, correspondant au «hiatus palestinien», qui aurait poussé les hommes à s'embarquer pour Chypre. Dans l'autre que présente aujourd'hui Edgar Peltenburg, l'élévation du niveau de la mer est invoquée comme l'une des causes possibles. Cette nouvelle version de l'Arche de Noé, qu'on le veuille ou non, voit donc des populations sinistrées ou menacées par la montée des eaux céder à ce que l'on peut nommer le « syndrome de Gribouille », selon le nom du héros d'un livre pour enfants, qui se jette dans une mare pour éviter de se faire mouiller par la pluie. Sans doute ces hommes avaient-ils estimé que seuls les rivages continentaux pouvaient être touchés par cette catastrophe et qu'il était beaucoup plus sûr d'aller se réfugier sur une terre déjà entourée par l'eau.

Quoi qu'il en soit, l'origine continentale du Néolithique pré-céramique chypriote est indéniable, la fouille de Shillourokambos l'a amplement démontré. Mais faut-il pour autant reprendre en la naturalisant en Cypro-EPPNB, Cypro-MPPNB et Cypro-LPPNB, une nomenclature utilisée sur le continent et lourdement connotée? Outre le fait d'employer un terme qui est source de confusion, c'est aussi gommer les anachronismes et les particularismes régionaux. Un tel choix laisse en effet entendre que Chypre évolue au même rythme d'un continent qui, lui-même, évoluerait dans sa totalité du même pas. Or Peltenburg (*cf.* plus haut) place vers 7500 cal. BC le moment où Chypre se différencie du continent, mais ailleurs il souligne que dès après 8000 cal. BC, c'est-à-dire dès après la phase nommée « Cypro-EPPNB », aucun influx continental important n'intervient (Peltenburg *et al.* 2003 : 102). Aussi la périodisation alternative présentée par Peltenburg (*ibid.*: 87, table 11.3) me semble-t-elle préférable qui ne fait appel qu'au terme de Néolithique pré-céramique chypriote pour recouvrir une période où trois phases : ancienne, moyenne et récente, sont distinguées.

Parmi les traits qui distinguent Chypre du continent figure en bonne place la persistance du plan circulaire et, par voie de conséquence, l'organisation de la société qui sous-tend ce type de plan, la maison étant autant faite pour dominer un milieu physique que pour mettre en

ordre un environnement social. Une telle persistance conduit d'ailleurs à s'interroger sur la lecture de ce que Peltenburg nomme « overt symbols », car, dans le monde des symboles, tout est culturel et doit se comprendre par rapport à la société qui en fait usage, à un moment donné de son histoire et dans un contexte précis. S'appuyant sur le lien noté dans les marges désertiques entre architecture circulaire et chasseurs-éleveurs, Peltenburg propose de voir l'une des causes de cette persistance dans le rôle important joué dans l'économie de subsistance chypriote par la chasse et le contrôle des daims de Mésopotamie. Mais est-il pertinent de transposer à Chypre, dans un milieu insulaire, un modèle observé ailleurs dans un autre environnement, dans un milieu désertique ? Il faudrait en outre d'autres documents pour illustrer l'importance du daim au début du Néolithique chypriote, car si cet animal est bien présent à Shillourokambos dès les niveaux anciens, il n'apparaît à Mylouthkia qu'à la période IB, c'est-à-dire au Néolithique pré-céramique moyen (*ibid.*). Quant au Néolithique pré-céramique récent, la séquence de Khirokitia montre pour sa part une diminution régulière du pourcentage des daims, de 44% au niveau D à 9% au niveau I, qui est parallèle à l'augmentation de celui des moutons/chèvres : 30% au niveau D et 82% au niveau I (Davis 1994: 306-7, table 1).

La vieille opposition entre « colonising hypothesis » et « antecedent hypothesis » n'est pas résolue. Elle s'est transportée sur un nouveau terrain, celui de la domestication des plantes et des animaux. Mais le manque d'une documentation plus large se fait là cruellement sentir. Cette lacune concerne aussi bien Chypre que le faciès méditerranéen du pré-céramique expert dans l'art de la navigation, dont propose Peltenburg l'existence et qu'il m'est d'autant plus facile à accepter que j'en ai naguère avancé l'idée (Le Brun 2001: 116-7). Cette expertise, du reste, ne laisse pas de surprendre, car le bassin oriental de la Méditerranée est vide de toute île à l'exception de la seule Chypre, et ne présente pas les conditions les plus favorables pour inciter à pratiquer la navigation en haute mer.

Une meilleure connaissance de ce faciès, mais aussi de ce qui se passe entre l'Euphrate et la côte méditerranéenne devient urgente. Ces données nouvelles permettraient d'évaluer le Néolithique pré-céramique chypriote avec une plus grande rigueur qu'il n'est maintenant possible en l'absence d'une référence dépourvue des dis-

torsions qu'impose la distance. Certains traits particuliers, certaines réminiscences pourraient alors trouver leur explication.

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Dialogue

Cyprus: A Regional Component of the Levantine PPN

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Considering the inflow of extensive new data pouring in, not only from Cyprus but from all over the Near East, the report by Peltenburg on the Neolithic of Cyprus is a most welcome and timely overview. It is thus evident that the time has come to revise our perceptions. With this paper, Peltenburg is not only bringing in a comprehensive overview of the recent evidence from Cyprus, but he is also listing his arguments and is opening up a stimulating discussion that will greatly help in drawing a new picture. Even though we fully agree with most of the issues mentioned in the paper, there are evidently some points that need to be further elaborated.

One of the prime concerns of Peltenburg is to include Cyprus in the core area of the Neolithic formation zone, which is perfectly all right. However, if we are trying to reformulate or to revise biases left over from the incipient years of research on PPN, this should be done without falling into new traps. In developing new definitions, the general picture that is now emerging should not be overlooked. Thus, adding or subtracting isolated patches of territories to the conventional core area of the Neolithic would not help in reforming our view. At this point, it is now evident that the term "Levantine", whether Cyprus is included or not, falls short of defining the formative zone of the Neolithic.

Recent work in Syria and in Turkey has revealed clear evidence that, even in its incipient stage, the formative zone of the Neolithic was not restricted to the Levant, but to the east it extended at least up to the catchment

area of the Tigris. The chain of intermountain plains lying to the north of the eastern Taurus range, like the flatlands in Syria, are now within the prime area of the Neolithic. Likewise, the Central Anatolian plateau, which until recently was considered as an area of secondary Neolithization, during the last decade, has also been revealing early assemblages. In this respect, the evidence of the Kaletepe obsidian workshop, with an assemblage yield of tools and cores prepared solely for "export" to the south, strongly implies that the interaction between the Anatolian plateau and the Levant was much more active than we had ever envisaged. Accordingly, it would be much more realistic to eliminate the notion of "Levantine Neolithic" rather than revising it. What we should use to replace it is yet another question; perhaps until someone can find a better geographic term, we can use the term "Near Eastern Neolithic."

The question concerning the origins of Cypriot Neolithic is, in our view, still open. Peltenburg's argumentation for the northern parts of the Levant as the possible homeland of the Neolithic settlements in Cyprus is based on certain analogies between the two regions. However, as also noted by Peltenburg, it is possible to find some other traits in Cyprus that do not match with any of the Neolithic assemblages. In this respect, trying to look for a single region to be the *koiné* of Cypriot Neolithic might again be the wrong approach; it seems possible that there might well be multiple regions of origin. In understanding the "Neolithic phenomenon" we

should bear in mind that there was an active and intensive interaction through all of the Neolithic formative zone. We should bear in mind that during the Pre-Pottery Neolithic period interaction between distinct regions was in a different mode than what we are used to from later periods. In the later periods inter-regional action was usually on a linear tract, connecting the center to periphery. However in the PPN it is evident that there was a poly-centric interaction, from all places to all others.

Accordingly, we should avoid thinking in terms of colonization models to bring initial settlers from any particular point along the Mediterranean coast. In this respect, it is worth recalling that due to the rise in global sea levels since the PPN, we are missing all coastal sites of the epoch. However, as clearly demonstrated by the distribution of Melos obsidian, by 12,000 BC at the latest there was active maritime activity. Thus, it seems possible to suggest the presence of a “coastal – or maritime Neolithic” for which we do not know any details. That would support the proposal of Peltenburg that there might

still be earlier human occupations on the island than those recovered.

The persistence of circular buildings on the island may also be a feature of the hypothetical “maritime Neolithic”. In this respect, we were always intrigued by the similarity between the round buildings of basal Hoca Çeşme and of Cypriot remains. Of course, we are fully aware of the great geographical distance separating Hoca Çeşme and Cyprus and the lack of any other contemporary sites in between. However, the lack of coastal sites in the Aegean, or along the coastal strip of western Anatolia, may also be taken as an indicator of missing sites.

Other than the above remarks, I fully agree with all other statements made by Peltenburg; particularly pointing to the questioning of whether Cyprus should be considered as an area of primary or secondary Neolithization. It now seems evident that the emergence of a new way of life was the result of an inciting stimulus through a vast territory, extending from the Central Anatolian plateau to the southern fringes of the Levant to the Zagros highlands, not excluding Cyprus.

Dialogue

Cultural Genealogies: Cyprus and Its Relationship to the PPN Mainland

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For decades Cyprus has stood out as a Neolithic orphan with a cultural system of such unclear parentage that it might as well have dropped in from the moon. Recently, pre-Khirokitia periods of occupation have been identified, including one contemporaneous with the PPN of the mainland. The situation that Peltenburg confronts, it seems, is the determination of how much “cultural DNA” there might be between PPN Cyprus and the northern margins of the Mediterranean coast (and interior, including Anatolia), with forebears from the central part of the Levant, and what degree of kinship may have existed with the southern Levant.

To begin, I would question the easy reference to a “single cultural system stretching from the Middle Euphrates to the southern Sinai”, as Gopher put it 15 years ago. To my reckoning, there are some major differences as one proceeds from eastern Anatolia down to the Red Sea, and while there are undeniably some threads of close similarity that loosely bind the region in a slackly wrapped package, I also think the differences one sees from sub-region to sub-region are very important during the entirety of the PPN period. Acknowledging that the eastern

Mediterranean region is not one large series of rubber-stamped cultural issues, it is not surprising that it is not an easy objective to identify the principal contributors to Cypriot Neolithization.

Peltenburg notes that among the similarities with the mainland there are the elements of shared naviform blade technology and “prestige” points, both of which argue for intense learning from people familiar with the procedures. (I am not convinced of the “prestige” character accorded to projectile points. At ‘Ain Ghazal, at least, very few of these “prestigious” Byblos and Amuq points escaped damage in the mundane activity of providing meat for the family; nor were there any run-of-the-mill projectile point types that might be viewed as a sort of hunting “coarse ware”). He also notes the presence of exotic imports (obsidian), figurines, and decorated stones, but these are not necessarily parts of a PPN hegemony imposed on populations in a newly colonized territory; the obsidian certainly demonstrates contact with PPN mainland populations, but that is all.

What is missing in all of this is what the resident population that descended from the early 10th millennium

hunter-gatherers did when confronted with boatloads of PPN colonists, if that were indeed the case. Were these new people, artifacts and technologies, animals, and ideas welcomed with open arms? Or was there a great deal of skepticism, humoring, and even downright hostility? What filtering effects did the locals exact on what elements were meaningful to them, and what kinds of syncretism were developed in those areas where assimilation was undertaken?

Fundamentally, we are at a loss in understanding the nature of contact between Cypriot populations and mainland populations simply because they are invisible on the map. We have little idea (if any) of the sea-faring tendencies and skills of the island population (who certainly must have been familiar with the rougher parts of sea activities), and we are completely (?) in the dark concerning the coastal skills of mainland PPN groups, no matter what part of the Mediterranean coast we might mention. Littoral orientations are most likely to be found most intensively along PPN shorelines, but it is not clear where those 10th and 11th millennium cal BP beaches were: PPNC Atlit Yam, south of Haifa, lies 10-12 m below modern sea level (Galili *et al.* 1993), and Pottery Neolithic sites along the beach at nearby Newe Yam are also submerged. It would perhaps be profitable to investigate whether, and to what degrees, coastal subsidence in this tectonically active coastline (from Cilicia to Gaza, and all around the island of Cyprus) may have occurred, and how the relationship of elevation and post-glacial rise in sea level may have played out. Was there, possibly, an extensive littoral PPN and PN adaptation, for

which we have only the Atlit and Newe Yam evidence? The close relationship of shoreline residents and their familiarity with the sea would go a long way to explaining the success of what must have been repeated voyages in both directions, and it raises the question if the direction of Neolithization was necessarily instigated by sailing groups leaving the mainland for the island; could the direction have been reversed, with sailors from Cyprus picking and choosing what they wanted to bring back with them?

If there were marine-oriented groups on both the island and the mainland coasts, the exchange from one to the other may reveal that “cultural filter” in operation should any submerged settlements be discovered from the appropriate time. Such evidence would clarify the immigrationist, indigenist, and integrationist models that Peltenburg has offered, and it would add a new dimension to understanding Neolithization processes all through the Near East. While this might seem speculative, the Atlit Yam evidence argues that more intensive sea floor investigations along both the mainland and the eastern parts of the Cypriot shores might be successful in resolving some of the issues currently facing us in this part of Cyprus’ prehistory.

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Dialogue

Cyprus, Aegean, and Near East During the PPN

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The latest discoveries in Cyprus over the past several years not only prove that the dates from the island go further back than previously believed, but they also emphasize the importance of the Mediterranean islands in ideological terms to peoples on the mainland. It is now confirmed that a phase contemporaneous to the PPNA took place in Cyprus, even though it seems to be more primitive than the Syro-Palestinian version, and a more recent phase, evident in the sites of Shillourokambos (Guilaine and Briois 2001) and Milouthkia (Peltenburg 2003), corresponds to an early stage of the PPNB.

Furthermore, impressive discoveries about the Early Holocene took place not only in Cyprus, but also in the Aegean during the 1990s, and they have yielded new evidence that superseded long-held views about the total absence of inhabitants on the islands. New information verifies that the Aegean islands were not only inhabited in pre-Neolithic times (Woodman 1990), but they also constituted – even though bare today – complete ecosystems that could provide for adequate nutrition.

More specifically, two research programs that were initiated simultaneously in the early 1990s yielded the

new information on the Aegean area; the first was undertaken at the Cyclops Cave on Youra Island in the North Sporades in the northern Aegean, and the second on the Cycladic island of Kythnos.

In the Cyclops Cave (Sampson 1998; Sampson *et al.* 1998) consecutive undisturbed layers of habitation from the Early Holocene were unearthed, up to approximately 3 m in thickness, under Neolithic deposits. The lithic types comprise flakes, crescents and trapezoidal microliths from flint and obsidian. Of special interest is a collection of bone fish hooks. Finally, the food remnants contain plenty of shells and fish remains, bones of birds and wild animals, as well as suids and caprines with signs of early domestication (Trantalidou 2003).

What is assumed from the overall study is that the cave was used by a small group of active people with advanced knowledge in seafaring. As the marine environment of the islands in the region is in the centre of the Aegean, and this would necessarily mean deep waters, difficult sea routes and rough weather, despite the lower sea level at the time. These people had probably developed an extensive range of contacts in the area, as observed in their familiarity to the networks of obsidian transportation and know-how from Milos Island, and the typological affinities between the Youra microliths and similar tools from caves in southeastern Turkey (Yalcinkaya 1995; Sampson *et al.* 1998). The association of this group of people to the Asia Minor side of the Aegean is of particular importance, due to the observation that the inhabitants of Youra, although partly based on fishing and hunting as a means of obtaining nutrition, were already involved in domesticating pigs and caprines. This practice was most likely carried out either in a pre-colonizing stage or through contacts with inhabitants of the Asia Minor coast while people still lived on Youra.

Human presence on Youra covers a long period of the Holocene, from the beginning of 9th millennium cal BC until the middle of 7th millennium cal. BC and typologically belongs to the Mesolithic. Nevertheless, the characteristic of early domestication on Youra, already present in the lower layers, adds a pre-ceramic character to the site and thus could place it as a marginal point in the spheres of PPNA and PPNB, which chiefly pertain to the areas of Upper Euphrates and Syro-Palestine. Cyprus, thus, enlarges the area geographically, and the Aegean even more, even though the gap created by the absence of analogous sites in western Anatolia has not been bridged so far.

Within this area, Youra offers a number of similarities to the nuclear zone (Upper Euphrates and Syro-Palestine), despite the geographical distance and the differences between them regarding the complexity of symbolism in Asian sites and the periphery (Cyprus). Concerning the nuclear zone, the presence of early domesticated suids at Youra shares common features with the contemporary pig sites in the Upper Euphrates area in the

frontiers between Turkey and Syria, such as Hallan Çemi (Vigne and Buitenhuis 1999), where pigs – and not caprines – are considered to be the first and oldest domesticated animal. On the other hand, the presence of recently domesticated goats in Cyclops Cave during the Lower and Upper Neolithic has equivalents in modern sites in the northern Levant, where goat domestication had just begun.

Additionally, the Cyclops Cave clearly shares common characteristics with the Akrotiri phase of Cyprus, even though the latter is slightly earlier, at the border of the Epipalaeolithic period. The affinities between Cyclops Cave and Aetokremnos (Simmons *et al.* 1999) are evident as far as the type of the location (*i.e.*, cave) and the criteria of their selection in relation to the marine ecosystem (*i.e.*, on steep seashores) are concerned, as well as the contact with the ‘exterior’ aspect of the island (*e.g.*, view, maritime character of the location) and the ‘interior’ (*e.g.*, hunting areas, springs). But what is prominently common between the two sites is the tendency towards the same survival means: namely, the inhabitants of both sites evidently employed efficient food-gathering and hunting techniques (Katsarou 2001). In Youra they specialized in fishing, while in Aetokremnos in the hunting of endemic pigmy mammals. Both groups seem to make use of their sites as a central station that probably belonged to a larger network of locations, used periodically by hunters, who would move and stay more or less permanently in each area according to its peculiarities. The expertise in hunting in both sites is also confirmed by the strong localized idiosyncrasies, the tendency towards microlithic types, and the limited variability in tools that are noted in the areas. Furthermore, hunting is considered to be a widespread common survival method in the wider area of the Epipalaeolithic/Mesolithic and the PPNA. Finally, the domestication of animals, at a very early stage, is present in both sites – pigs are present also in Aetokremnos, but they represent a lower rank source of food.

The site of Maroulas in Kythnos island in the Aegean (Sampson *et al.* 2002) comprises a settlement of round huts and burials that date from the same period as Youra (from 9th to 7th mill. cal BC) and presents early domestication of suids. Franchthi Cave in the eastern part of Greek mainland (Perlès 1987) belongs to the same period, but it does not offer signs of early domestication. The lithic industry of Maroulas provides evidence for the site’s Mesolithic character, already known from the case of Youra. The two sites seem to have more features in common, such as the coastal and dominating location, the marine character, and the hunting/food-gathering economy that is chiefly attracted to sea resources. Maroulas, however, offers substantiation for the early domestication and new typological/cultural information, unparalleled in the Greek region, such as round or ellipsoid stone buildings, with pavements above burials.

The new information from Kythnos gives rise to new cultural interrelations in the Aegean area, as was the case in Cyprus (Shillourokambos, Milouthkia) during the corresponding phase. Of course, one cannot doubt the fact that during this period the settlements on Cyprus showed a clear preference for permanence and domestication of animals and plants with more complex forms of symbolism, and the Cypriot civilization clearly corresponds to the firmly established mainland PPNB. This does not occur in the southern Aegean, where the economy is evidently not entirely Neolithic, but it seems likely that it was influenced by the PPNB, which can be primarily seen in the round forms of architecture as a Syro-Palestinian Epipalaeolithic remnant in Cyprus.

Conclusion

The new finds in Cyprus justify the island's PPNB character, whereas the new discoveries in the Aegean back up the view that this area must also be included in the PPNA and PPNB areas of influence and categorized under a marginal zone. Cyclops Cave and Kythnos are in absolute accordance with PPNA and PPNB in terms of economy, of which domestication is a major part. The people in the Aegean and the PPNA-PPNB sites in Anatolia and Cyprus continued to employ food-gathering and hunting techniques, and they used domestication as a supplementary economical means. Even though lithic industry in the Aegean is strictly Mesolithic, achievements were attained in other fields, such as the early domestication, the circular buildings and the seafaring.

The bias that these early phases of the Neolithic are not manifested in the Aegean islands has hindered research so far, but since the discovery of similar new sites, finds of special interest are expected in the near future. As a final point, research in the island of Rhodes, where Neolithic finds from 6th mill BC onwards have been unearthed (Sampson 1987), is imperative, as the island most probably constituted a link in the moving of ideas with maritime means.

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The Mediterranean PPNB Interaction Sphere?

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Eddie Peltenburg and I must be thinking a lot alike these days. We are, as the euphemism goes, in the same chapter, although not on the same page. Over the past 15 years, research on the early prehistory of Cyprus has rewritten our understanding of Early Holocene events in the Near East, and Peltenburg's paper is a provocative example of this. To understand the Neolithic better, there have been recent attempts to look at broader issues, "macrothemes" if you will, that transcend site-specific or regional interpretations. In this context, "interaction spheres" appear to be all the rage in contemporary discussion. In the context of the present discussion, Watkins (2003) perhaps more realistic modification of the peer-polity model and the existence of a possible "Mediterranean Interaction Sphere" is even more appealing.

Given space restrictions, I would like to restrict my comments to Peltenburg's 10 summary points. Certainly the issue is far more complex than these brief discussions can go into, but at least we are starting the dialogue. I note that Peltenburg is currently co-editing a forthcoming conference volume on the Cypriot Neolithic, and therefore he has access to some previously unpublished data that help bolster his argument. We all are eagerly awaiting the publication of this important work.

1. *Cyprus as another part of the PPNB interaction sphere.* With the documentation of the Cypro-PPNB (hereafter CPPNB), it is now apparent that Neolithic occupation in Cyprus was far earlier than previously believed, and followed a different trajectory from the mainland. As such, it is entirely reasonable to consider it as a distinct component of the PPNB interaction sphere.

2. *Genesis.* Peltenburg has changed his mind on the origins of the CPPNB. He first believed the point of origin to be the middle Euphrates (Peltenburg *et al.* 2000; 2001a). This accord went well with Cauvin's (2000) idea of a Neolithic diffusion from this region to the rest of the Near East, but if there was any exodus, it likely was one of ideas not people. Peltenburg now more realistically feels that the Syro-Cilicia area constituted the origin. This may be the case, but presently the data are simply not robust enough to confirm this. Based on the chronological and chipped stone evidence, equally plausible origins can be made for other Levantine sources.

Let's look at these two issues. Chronology is critical, and part of the problem is where the CPPNB dates in relation to the mainland. This is further complicated by whether one uses calibrated or uncalibrated figures. Table

1 summarizes relevant data. Peltenburg (2003:86) essentially equates the early CPPNB to the EPPNB on the Levantine mainland. Despite some discussion as to

Table 1. Chronological Comparisons Between the Cypro-PPNB and the Levantine PPNB. Cyprus data from Peltenburg *et al.* (2001b: 65, Table 3); Levantine data from Kuijt and Goring-Morris (2002: 366, Tab. 1).

Period	Cal. B.C.	Uncal. B.P.
Early CPPNB	?-8,000	?-9,000
Middle CPPNB	8,000-7,500	9,000-8,500
Levant EPPNB	8,500-8,100	9,500-9,300
Levant MPPNB	8,100-7,250	9,300-8,300

whether or not the EPPNB actually exists (Kuijt and Goring-Morris 2002:382), when one looks at the still limited dates, many early CPPNB determinations actually fall into the early MPPNB. Peltenburg notes that by c. 8000 cal BC, Cypriots "shared a wide range of cultural traits with northern Levantine mainlanders." This is true, but it is equally true that these similarities are not restricted solely to the northern Levant. The point is that by the MPPNB, there were numerous settlements throughout the Levant and elsewhere in the Near East that could have served as points of origin for the CPPNB.

Turning to chipped stone, Peltenburg cites general similarities in technology and typology for the CPPNB and mainland PPNB assemblages. This is largely reflected by naviform core technology and projectile point typology. Carol McCartney's (*e.g.*, 2001; McCartney and Gratuze 2003) excellent studies have shown some general similarities, something that previously had not been demonstrated in Cyprus. We cannot, however, carry these analogies too far, and to contend that Byblos and Amuq projectile points, present but rare in Cyprus, constitute "prestige" items seems only weakly supported at present. While general similarities now exist, CPPNB assemblages, as presently published, still do not contain large amounts of naviform blades or projectile points made on them, based on currently published information, and the latter are usually relatively crude. None of this is to deny mainland technotypological similarities for Cyprus, but we still require more data.

So, what does this have to do with points of origin? Simply put, any number of mainland MPPNB sites could have provided populations for Cyprus, although coastal PPNB sites are relatively rare, especially in the northern and Cilician regions. It is not until the LPPNB and PPNC that substantial coastal communities, such as Ras Shamra or Atlit Yam, are documented, although new research suggests earlier settlements in the north (Stordeur 2004). Again, we simply do not yet have enough data. Certainly Peltenburg's statement that "Only they [Syro-Cilician peoples] had the local expertise for initial seagoing enterprises, coupled with an awareness of the arable potential of Cyprus..." seems premature. I suspect that by this time, many Neolithic groups had these abilities. Ultimately, perhaps more interesting are not the origins of the CPPNB, but rather what these people did once they arrived in Cyprus.

3-9. *Economy*. Economy clearly is a complex issue, and Peltenburg's thoughtful points here merit careful attention. By the MPPNB, farming was well established throughout the Near East, thus I cannot find support here for a solely Syro-Cilician donor base. If, however, additional dates can more firmly place the early CPPNB into the EPPNB, a northern source may indeed be a reasonable conclusion. Whatever the case, it is clear that farming and animal husbandry (presumably of domesticated animals) were quite early on Cyprus. At this point in our understanding of the CPPNB, our economic data are still raw. While it is apparent that they were farming, animal husbandry may have been equally important, perhaps even more so. The presence of cattle at CPPNB sites certainly complicates the picture considerably.

The distinction between what Peltenburg refers to as the migration of both cultivators and farmers is in my mind a little unclear. He is, however, right on in indicating that Cyprus provides a unique example of highly organized and purposeful Neolithic dispersals. While I have never been a big fan of actual population migrations, as proposed by Cauvin's (2000:135-211) suggestion of a great "exodus", we clearly are dealing with a situation in Cyprus of actual population movements. While future research may show a linkage between the island's first occupants, as reflected at Akrotiri *Aetokremnos* (Simmons 1999) and the CPPNB, it is likely that actual people were responsible for the introduction of the Neolithic to Cyprus.

Peltenburg's (2003:93-99) argument against domestication being undertaken by indigenous hunter/gatherers, but rather by migrant farmers involved in a long process of colonization, is well taken. This seems to argue against Watkin's idea that sedentary hunter-gatherers may have independently invented agriculture in Cyprus, but we must await the publication of the previously mentioned conference monograph in which this is presented to fully examine this intriguing idea.

Peltenburg's other points related to economy are all reasonable. Most researchers now acknowledge multiple core-centers for the agricultural transition that include areas outside of the Levantine Corridor. Indeed, the earliest dates of true domesticates are from southeast Turkey around 9,200 BP (Nesbitt 2002:121-122). The Cypriot subsistence economy, as Peltenburg points out, is quite distinct from the mainland, and his call for regional histories of agriculture origins, and, perhaps more importantly, subsequent developments, is well heeded. It seems quite likely that there were multiple maritime journeys to Cyprus over a relatively long period of time that resulted in the establishment of a permanent Neolithic presence on the island. Perlès' (2001:62) concept of multiple pioneer colonizers seems especially appropriate here.

Finally, Peltenburg's last point, that Cyprus gradually dropped out of the Levantine interaction sphere during the later, represents a fruitful avenue for future studies. Why did this happen, and why did Cyprus, from essentially the Khirokitia Culture onward, develop its unique trajectory? We cannot yet answer these questions, but given the exciting developments occurring in early Cypriot prehistory, it is clear that the island's Neolithic can no longer be considered a footnote within the wider Neolithic world. Rather, it was part of the dynamic processes that were occurring over a huge geographic range during this tumultuous time.

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Dialogue

Response to Commentators

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Commentators on the opening paper collectively agree on the importance of the recent striking evidence from the island of Cyprus for our understanding of the Neolithic in general and not simply the island's prehistory. I am grateful for the constructive way in which they supported, critiqued or sought to cast different perspectives on proposals tentatively offered in an effort to widen the debate on the implications of these discoveries. From those valuable comments, it strikes me that we are acutely aware of the enormous deficiencies of information that constrain discussion of significant developments amongst alien cultures, and so an over-riding issue is how we should approach the archaeological record of the period. But first let me turn to more discrete issues.

One of these concerns misapprehensions about my position on the vexed question of origins of farmers on the island. Simmons, for example, suggests that I initially believed the point of origin to be the middle Euphrates and he mentions two publications where one might find the argument. But, in Peltenburg *et al.* 2000: 851, we stated in regard to the blank map between the Euphrates and the Mediterranean coast: "While jump dispersal from the Levantine Corridor could account for

this gap, we feel it is unlikely that such farmers would have had the necessary boat technology, maritime travel expertise and knowledge of their target to establish permanent bases on Cyprus." We were still contending with the problem in 2001: "There is in any case little evidence to support jump dispersal or wave of advance models from the Levantine Corridor to the island" ... "some groups probably came from the Syrian coastal platform." It was in the pages of *Neo-Lithics* 1/00 that Carole McCartney and I gave reasons for rejecting a Euphrates origin and, while pointing out how intractable was the problem at this stage of research, we suggested multiple, coastal links. Thus, I find Özdoğan's encouragement to look for a "coastal or maritime Neolithic" very appealing, however daunting the task might be, given the loss of sizable stretches of the relevant palaeo-coastlines.

Özdoğan is concerned that I am too fixed on the Syro-Cilician coast as a point of origin. Even though one has to acknowledge the reality of a long history of maritime travel in the Aegean, as pointed out by Sampson and Katsarou, and Özdoğan, my reason is practical. Contact requires knowledge, and knowledge in this context is

not provided by island-hopping Aegeans, but primarily by local inter-visibility between SW Asia and Cyprus. The Klidhes Straits is where the relevant landmasses are most visible to each other. It is the shortest maritime route between the continent and the island, even allowing for winds and currents that might make it easier to journey *in one direction* from further away. The shortest feasible crossing for return voyages is a key to identifying successful routes since water and other victuals for transported livestock and people would have been in limited supply. Interaction, I argue, was recurrent, highly purposeful and organised, not fortuitous, as might be the case if coast-hugging boats from the southern Levant chanced upon the island in a northerly voyage. (The trouble with this is their unpreparedness for crossing to the island and the difficulties of returning which require routes that take them out of sight of land. As an aside, I should add that I have not argued for connections with the southern Levant *pace* Kuijt). In support of the Syro-Cilician/Cyprus route as the main, if not sole, contact nexus, is the occurrence of prodigious quantities of Central Anatolian obsidian at Akanthou on the north coast of the island, opposite the western terminal of Cilicia.

Gary Rollefson also tackles the origins issue. He makes the important related, but quite distinct point when he asks if “the direction of Neolithization was necessarily instigated by sailing groups leaving the mainland for the island” or by “sailors from Cyprus picking and choosing what they wanted to bring back with them?” I have argued for an integrationist model and so suggest both. This also addresses his concern with the reactions of islanders to boatloads of PPN colonists since I imagine contacts as part of a continuum between groups who were familiar with each other, even if this included major influxes. Dynamics probably varied in what was a long-term process, not a single episode. I visualise interactions as historically constituted. Even if there were specialised seafarers, that is ferrymen/fisherfolk who ferried different groups back and forth, island communities probably had their own links with kin, allies and trading partners on the mainland, recalling links between colonists and home countries somewhat in the manner of relations between Greek Iron Age colonies and their parent groups. This does not preclude down-the-line exchanges, say, for obsidian around the island. Contacts, in other words, were synchronically and diachronically diverse, and while the bi-directional arrows of Fig. 2 (*cf.* p. 6) are intended to portray the existence of two-way traffic, they cannot do justice to the real complexities of the interactions.

In continuing to address the problem of origins, Simmons raises the question of chronology. Since some of the earliest dates for the Cypriot Neolithic are contemporary with the mainland MPPNB, he argues that we should look beyond Syro-Cilicia as the exclusive donor

area. Because farmers were widely established then “any number of mainland MPPNB sites could have provided populations for Cyprus”. He does allow that earlier dates would strengthen the case for a north Levantine connection. I believe we have these dates. They comprise all the dates from well 116 at Mylouthkia Period 1A (Peltenburg *et al.* 2003: 83). This is a high integrity, coherent set of three AMS determinations from domestic seeds. They come from a closed context, and are not subject to charred wood dating uncertainties like re-use, and the need for stratigraphic associations with evidence for farming. At 2-sigma, the dates of these seeds fall entirely within Simmons’ Levant EPPNB timeframe, that is before 8,100 cal BC. While there is debate about the chronological limits of the EPPNB (see Kuijt 2000 for earlier dates), of greater interest is their domestic status at a time when one is hard put to find a similar assemblage in N. Syria-SE Anatolia, an area frequently regarded as a core zone for the inception of farming. This represents a major interpretive challenge.

Another recurrent issue in the commentaries is the nature of relations between the mainlanders and islanders. I agree with Rollefson that there is no PPN hegemony imposed on the latter, but clearly I feel the evidence warrants closer cultural ties than he and perhaps Kuijt allow. There are a number of difficulties here, not least because proximate mainland partners are archaeologically invisible and there is still a very meagre dataset to work from. But I believe items like the Shillourokambos stone sculpture of a feline head and others mentioned above point to strong connections. These symbolic creations, with their close mainland analogies, attest to the operation of linked cultural systems rather than entirely independent expressions. What is now required is an exploration of the processes whereby such closely related features came into existence in both regions.

Kuijt notes the importance of my arguments concerning similarities of spatial organisation between settlements, but contends that they are not dealt with adequately in this paper. He is correct. In brutally summarising a lengthy discussion about the possible derivation of social space and curvilinear architecture in the Cypro-PPNB from N. Syria-SE Anatolia, I omitted many of the supporting arguments including linking data that helps to overcome the chronological gaps between analogous expressions, and some implications, especially of the diverging trajectories of settlement organisation. Space does not permit their rehearsal here, and readers are referred to Peltenburg 2004 for the discussion.

The final point I wish to comment on is one that implicitly or explicitly recurs throughout these commentaries. Kuijt expresses it cogently when he asks “How, then, are we to discuss and label the similarities and differences between Cyprus and neighboring areas?” The issue, then, is one of constructing clear archaeological narratives, and re-evaluating or even rejecting terms like

Levantine interaction sphere and PPNB. Labels condition thinking, so the matter is serious, one worth treating in terms of the evolution of our studies. In common with early stages in the developmental trajectory of many disciplines, evaluation of the Near Eastern Neolithic has reached a stage where the study has outgrown many of the terminologies that once, in an age of innocence, sufficed. The angst that pervaded deliberations at the 4ICAANE Neolithic Workshop recently in Berlin is symptomatic of a recognition that mere refinements and modifications to older paradigms may be too little, too late. Similar concerns, I believe, prompt Özdoğan to advocate that we eliminate use of the term “Levantine Neolithic”, Rollefson to emphasize sub-regional differences within the Levant and Kuijt to re-assess the PPNB interaction sphere. Yet no new chronological, culture or other classificatory system that embraces this era of momentous changes in human development emerged in Berlin. There was some consensus for the application of concepts or approaches whereby developments within the Epipalaeolithic and Neolithic might be usefully explored. But that leaves us still needing a framework in which to incorporate existing and, as in the case of Cyprus, new information.

The debate lies beyond the remit of this dialogue note, yet it has to be confronted if only because of the strong Near Eastern links of the emerging early Neolithic record of the island which needs to be contextualised meaningfully. In opting for a dual region + period term, Cypro-PPNB, I sought to capture both the local and supra-regional characteristics of the record. That is not to deny the very real heterogeneous qualities of the PPNB. What else might we have called it? Membership of “objective” Maison de l’Orient numerical stages is one possibility, although their usefulness may be questioned if the system is not regularly adhered to (*cf.* Cauvin 2000 who

more often reverts to conventional nomenclature). They do not have wide currency. An “aceramic” (as in Peltenburg *et al.* 2003: 87, Table 11.3) or “Neolithic” sequential nomenclature also has advantages, but it fails to disclose many of the distinctive characteristics of the period. There will, no doubt, be further debate about the appropriateness of terms, but more important is Kuijt’s call to revisit the nature of the (greater) Levantine PPNB interaction sphere. Cyprus should continue to furnish us with fresh insights into these local and supra-regional interactions, and hence should figure prominently on fundamental re-evaluations of this seminal period of human history.

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Towards New Frameworks: Supra-Regional Concepts in Near Eastern Neolithization

Short Note on an 4ICAANE Workshop Hold in Berlin, 1-2 April 2004
(organized by H.G.K. Gebel, M. Özdoğan, G.O. Rollefson, and K. Schmidt)*

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It has become clear that many of us who work in Near Eastern Neolithic research find ourselves isolated in our own viewpoints, based on our own histories of epistemological and pedagogical development and much influenced by linear diffusion concepts of the past several decades, to the point that we are almost sitting in holes of our own digging. From each of these holes, the mind of the inhabitant seems to become increasingly convinced that it has discovered a “center” of some sort from which subsequent developments in the Neolithic were influenced or even emanated.

We convoked this workshop in the hopes that we could draw ourselves out of those holes to gain new perspectives in understanding the Neolithization of the area from western Anatolia to the Yemeni Coasts, from Turan to Sinai. Briefly put, we wanted to shed some long-lived but outmoded paradigms to seek new concepts of understanding the supra-regional developments of this large geographic expanse. The concepts should be able to help us explain both the underlying similarities that loosely hold the region together, but also to elucidate the different trajectories various sub-regions followed that make those sub-regions so distinctive.

We began the process by asking several colleagues to submit statements on the needs of new research agendas that help to understand better the regional variability and complexity of Neolithization, especially in the light of the new evidence (Göbekli Interaction Sphere, Cyprus Colonization, the Jordanian Mega-Site Phenomenon); this recent evidence does not appear to be explainable in the frameworks of past concepts. The pre-circulated statements were the starting point and basis of the workshop discussions: they are provided below – in alphabetical order – as a document on how the Supra-Regional Concepts discussion began**. It has been considered especially important that from the beginning archaeobiologists share the discussions, since we see it

to be very problematic to promote supra-regional concepts without the advice from at least this side of the interdisciplinary Neolithic research.

At the first session of the workshop on April 1, each author was asked to present a short (10-minute) critical comment on the pre-circulated statements, aimed to distill the most crucial themes necessary for additional discussion in the following workshop parts. As a result, several more or less overlapping concepts that held promise for supra-regional effectiveness were identified, and were chosen for a comparative discussion. The concepts included:

- a. Polycentric Evolution Concept
- b. Peer-Polity Interaction Concept
- c. Multiple Center Concept
- d. Macro-Regional Concept
- e. Diffusion Concepts

The afternoon of April 2 was spent discussing and refining the concepts identified on the previous day, as well as covering problem areas in the paradigms presently in use. In essence, there developed a wider consensus for the following views:

1. The concept of “Levantine primacy” was no longer tenable, and although the “Levantine corridor” was important as a channel in communication in many respects, it did not serve as the only source of innovation and communication.
2. The *koiné* concept adopted in Lyon in 1988 was too simplistic and paved over important and distinctive local and sub-regional differences. “Origins” concepts appear very questionable.
3. The culture history paradigm developed by Childe and expanded by Kenyon (e.g., “PPNA”, “PPNB”) was unsuitable for explaining the situation in the late Epipaleolithic and Neolithic Levant.
4. A unilineal evolution from one or two “centers” of innovation was no longer acceptable.

* A report on the workshop is being prepared by David Warburton for *Paléorient*.

** The contributions of Frank Hole and Trevor Watkins were already published in *Neo-Lithics* 2/03, pp. 32-37.



Fig. 1 Participants of the Supra-Regional Concepts – Workshop at 4ICAANE (photo provided by F. Hole).

5. A bottom-to-top approach to describe the character and nature of change for local sub-regions was necessary in order to understand the Near East Neolithic from a regional perspective.

Discussions of the proposed supra-regional concepts reached a consensus that human agency was a dimension – if not the foundation – of all of the paradigms; it does not involve the geographical aspects that the concepts have and which therefore also are tools to explain and illustrate Neolithization spatially.

The future cooperation with the archaeobiological sciences in the new concept frameworks, discussed under the catchword “the Willcox Objection”, remains a controversial issue. The demand and expectation of testable and transparent archaeological concepts and tools was expressed quite clearly by the archaeobiologists. Terms like “domestication” should be used in a defined way, and not necessarily referring to the morphological definition. From the archaeological side, some claimed that biological domestication is not very relevant in the concept discussion.

It was emphasized at various points, too, that authors should make explicit from which concept (or overlap-

ping parts of concepts) they argue. Dialogue suffers from inexplicit positions.

Substituting a more neutral term of “community network interactions” for the “peer-polity interaction” label, it was agreed that this concept was probably most promising for beginning to develop the bottom-top descriptions and explanations of local and sub-regional cultural systems. The polycentric paradigm was more useful for integrating a general overview of how and why the different sub-regions evolved along the trajectories at the rates they did.

The new frameworks have not yet been refined to their final states, but we hope in the near future that continued interaction among us all (for which *Neo-Lithics* is an ideal venue) will help to smooth the rough edges and provide a better means to communicate our interpretations and eliminate confusion as to the foundations on which we base our interpretations. The next step of the ongoing discussion will be documented by the contributions to be published of the workshop; they will be the elaborated statements of the participants that will consider the modifications and changes of views triggered by the workshop discussions.

The Contribution of Subsistence Archaeology to Generating Supra-Regional Models for Understanding Near Eastern Neolithisation

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A great part of research into Neolithic subsistence in Southwest Asia has concentrated on the investigation and testing of models relating to the origins of agriculture. Much of these discussions have been tied to research questions relating to plant and animal biology and biogeography (*e.g.*, paths and modes of domestication, distribution of wild progenitors, the identification and ecology of early domesticates, the role of environmental stress as a prime mover for the onset of plant cultivation, etc.) and cultivation practices. In this context, the potential contribution of subsistence archaeology towards an understanding of broader issues about the development of Neolithic societies in Southwest Asia, has generally not kept pace with recent advances in the investigation and theorising of settlement patterns, ritual expression and social organisation at both the local and regional scale (see contributions by other discussants in this workshop).

Such emphasis on the biological and ecological (*sensu stricto*) aspects of early food-producing economies has resulted in a certain underdevelopment of a coherent (and archaeologically testable) body of theory applicable to the analysis of specific means (other than population movements and the opportunistic use of land resources by newly arrived groups) for the spread and establishment of crop species and cultivation practices away from the so-called “centres of origins” during the PPNB. Although many scholars have argued that the Neolithic itself should not be defined in terms of the means of production, but rather in the context of changes in the socio-cultural and/or symbolic domain (Cauvin 2000), this should not obscure the fact that cereal and pulse domesticates formed an important part of the economies of Neolithic village societies during the PPNB (see for example the review of the Anatolian archaeobotanical datasets by Asouti and Fairbairn 2002). Others have argued against this by questioning the degree of their reliance on agriculture *per se* as opposed to hunting and gathering compared, for example, to the later Neolithic and the Chalcolithic (*cf.* Özdoğan 1997a, b). However, one could point out that any such differences between the PPNB and later periods are more a matter of scale rather than substance. There is, furthermore, little doubt that the introduction and establishment of new means of production during formative periods such as the PPNB, would have entailed major transformations

in the perception of the environment, the socio-economic organisation of individual settlements, and the politics of territoriality and identity expression. Domesticates afforded more than mere staple foods, in that they could bind communities together through the implementation of risk-aversion strategies, feasting, and rituals related to the cycles of agricultural production (all operating at both the local and regional level). There follows that any attempt towards understanding the regional and local paths to Neolithisation should involve explicit models for addressing the role of food production in this process.

At the level of practical application, such a research agenda could benefit from a greater integration of the archaeological record and subsistence-related datasets. Detailed contextual analyses at the site level might help in elucidating for example cooking practices, cases of structured deposition of plant and animal remains, and patterns of consumption. Such analyses might in turn facilitate defining with greater precision the so-called “Domestic Mode of Production” (generally considered as one of the cornerstones of agropastoral production and consumption during this period) and allow thus for a more fine-grained understanding of the relationships between individual households, and the ways they pursued their socio-economic and political interests, likely to have been expressed in such diverse arenas as feasting, passage/ancestral rituals and commemorative events. At a regional scale, such site studies would form points of reference for inter- and intra-regional comparisons, particularly relevant for a more informative understanding of the effect that merging indigenous and “novel” tradi-



Fig. 2 Çiğdem Atakuman Eissenstat and Eleni Asouti (photo: F. Hole).

tions had on resource management strategies, and (more generally) the whole spectrum of interactions between “newcomers” and pre-existing settled and/or mobile groups (an example of a similar approach can be found in the discussion of the establishment of sedentary agricultural societies in Central Anatolia during the PPNB by bringing together local and regional settlement data, contextual information from key sites, and subsistence-related evidence on household production [Asouti in press]).

To conclude, one cannot but emphasise the need for a shift away from the much analysed and (by now) reasonably well-established facts of the biology and biogeography of the onset of early Neolithic plant and animal husbandry, and argue instead for the need to extend the scope of subsistence-related studies (whenever possible depending on the quality of the associated archaeological and contextual information, the preservation of the materials studied, and sampling coverage) in order to address fundamental issues relating to the “rationale for the exploitation” of land, plant and animal resources. Such an integrated approach to early Neolithic subsistence practices should therefore start from recognising the need to contextualise subsistence and (broadly speaking) landscape datasets for achieving an understanding not only of “origins” but (more crucially) of the establishment and later local and regional transformations of Neolithic production, including plant cultivation and animal herding. This is the case not only because through archaeobotanical / palaeobotanical and archaeozoological studies we can learn what early Neolithic communities consumed as food, or what the environmental setting of their habitation sites looked like in the past. But, more

importantly, because subsistence archaeology is in a qualified position to provide us with the appropriate research questions as to how such activities and choices came about in their particular socio-economic contexts, and with the methodological tools to investigate them in a rigorous way.

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Supra-Regional Concepts II

Targets of Current Neolithic Research in Southwestern Asia

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Defining the aims of our research is a common denominator for both field and laboratory studies. The most basic questions asked when one starts a new project are “Why do you do it? What do you expect to learn from digging or analyzing an already excavated assemblage of lithics, bones, skeletal remains, and the like?” The answers to these queries often implicitly respond to the issue of “how do we know what we know?” or “what tools do you use in order to interpret your finds?” While epistemology is an important aspect of our research, it is not discussed in meeting and I will not linger on its role in this brief statement. Suffice it to say that analo-

gy is the rule of the day. For the purpose of using analogies we build models on the basis of ethnoarchaeology, ethnohistory, ethnobotany, and the like. In searching for illuminating references that we cannot find in the field or in the available literature, we conduct controlled experiments such as replication of knapping techniques, building methods, and the like.

The transition from foraging way of life to villages and urban centers as a sequence of known cultural and demographic changes raises the question of “why did it happen, when and where?”, a query that occupied the mind of historians from ancient times. It was first taken

as a scientific endeavor during the days of Gordon Childe but mostly due to the thrust given by R. Braidwood through his writings and the multi-disciplinary teams in his excavations. By employing the notions of social evolution he proposed a trajectory of social and economic transitions from hunter-gatherers to urban centers. Braidwood's model was followed, during the last several decades, by different schools of thought that favoured other approaches than his. Models varied from understanding the changes as a reaction of particular populations to climatic fluctuations and the need to survive in certain regions, to stressing the processes of plant and animal domestication as either conscious or unconscious selection. More recently, scholars focus on uncovering the symbolic expressions as seen in the role of prominent landscape features, mortuary practices, monumental and domestic mobile 'art' objects, as well as shrines and temples. In daily life, as we know it, prehistorians accumulate an increasing amount of data sets, and most of them struggle with the issue of interpretation. Indeed, the question now as in the past is "what do we expect to learn from this vast array of information?" It is in this context that I offer my views for 2004.

Similar to early historians, my point of departure is the emergence or formation of states. World history tells us one basic fact. All monumental structures such as the pyramids, large temples, elaborate irrigation systems, and writing systems are essentially the works of a state organization, be it a city-state as in Mesopotamia or a kingdom as in Egypt. Other examples from the Indus Valley, China, Mesoamerica, and a few other regions, accord with this explanation. Usually the difference between the style and nature of public works is the environment, the kind of state regime, and the time it occurred, whether BC or AD. Huge expenditures of human energy, before the invention of machinery, required large and/or dense populations depending on the size of the territory. Reaching the level of large populations, which simply means having many more people per size of a territory, is always the outcome of expanding farming communities. Hunter-gatherers are generally characterized by lower numbers of humans per square km. The turning point or cultural watershed from the world of foragers to the one of farmers is what we call the Neolithic Revolution. In a relatively short time when compared to the Upper Paleolithic period, this revolution brought about rapid population increase in many regions. Hence, whether we use the more traditional terminology of the societal scale as based on population size and organization, or invent a new one, it all starts with bands and macro-bands or tribes and moves into larger units of chiefdoms and states.

Without getting into a discussion of 'when' do we see in the archaeological record the early states, or did they exist before the invention of the writing systems, we can take the appearance of Sumeria as a point of departure

and move back in time. If 5,500 cal BP marks the onset of states, then the emergence of early chiefdoms, such as the Halafian (as shown by K. Flannery) dates to about 7,500. Hence, from the early days of the Neolithic Revolution (*ca.* 11,500 cal BP) that saw the intentional cultivation by humans (PPNA), four millennia had passed until the first chiefdoms in southwestern Asia. During this long time span a considerable number of organizational and economic shifts are archaeologically recognized, while the basic elements of the regional cosmology remained the same (as demonstrated by J. Cauvin). As history informs us, economic decisions will have social implications, as much as decisions on social issues will have an impact on the economy of the society. Holding the view that one aspect is more important than the other characterizes the endless debates, among historians as well as archaeologists, on what determines the trajectory of the cultural evolution. In the atmosphere of searching for the reasons and mechanisms behind the origins of agriculture systems and the emergence of pastoralism, we need to gather the physical evidence for early farming and ensuing animal domestication. However, with the proliferation of palaeoclimatic data, radiocarbon readings, genetics of founder crops, etc., it becomes clearer that social decisions were made in face of a variety of situations, some of which are defined as 'climatic surprises' (as defined by Glantz).

Today, as in the past, in face of a natural disaster, decisions must be made to ensure the survival of the society. The same would be true in the event of a social crisis, and personal and group conflicts. In such cases, temporary and hereditary leaders through traditional alliance building, verbal negotiations, communal feasts, and the like, that hardly leave any physical evidence, resolved (or not) current conflicts. What could be an easy solution for a band or macro-band of hunter-gatherers will be more complex at the tribal level and increasingly so in chiefdoms and states.

Indeed all these issues become more complex with the rapid population growth that comes with the establishment of farming. It is expected in such situations, as shown by ethnic studies, that a population increase triggers a tendency among groups toward inclusive identity. Large villages were biological descent groups that developed the means for safeguarding and transmitting their own culture. Hence, recurring elements in material culture, mortuary practices, rock 'art', clay figurines, and stamps, for example, facilitate our task as archaeologists in tentatively delineating the original prehistoric homelands and the ensuing directions of colonization and diffusion.

I therefore believe that it is high time to try and map tribal territories within the PPNA and in particular the PPNB interaction spheres. We can employ the available information to circumscribe territories, an effort that should merely seen as a tentative re-creation of a spa-

tial distribution of PPNB social entities. Among the prominent markers are the distribution of ceremonial centers, architectural house types, wells, technical aspects of heavy duty tools such as axes and adzes, frequencies of variable types of projectile points, modeled skulls, mobile figurines, imagery expression on pillars or slabs, and the like. The PPNB period lasted for at least two thousand years and cultural changes were expressed through time. When we consider the long duration of the Epi-Palaeolithic, it seems that the rhythm of changes had accelerated since the incipience of intentional cultivation in the Levantine Corridor at the end of the Younger Dryas (*ca.* 11,500 cal BP). Special objects, such as modeled skulls, may hint to the presence of elite members or chiefly families. Similar conclusions may result from in-depth studies of ceremonial centers. However, no unique tombs have been discovered to date, nor clear evidence for a central settlement (although ceremonial centers such as Göbekli Tepe or Kefar HaHoresh do exist and could have served for this function), and thus we cannot as yet classify one or more of these PPNB spatial units as a chiefdom.

The evidence for a socially organized effort and not just a family affair was the colonization of Cyprus. The building of a seafaring craft, transport of land animals to this island, and the crossing by several groups as shown by the discovery of several early PPNB sites, speaks for the presence of leaders. The reasons for such crossings could be conflict resolution and expanding populations.

Markers of personal property (of individuals or extended families?) are probably indicated among others by the rare engraved flat pebbles, or on the back of 'shaft straighteners' already in the PPNA and more frequently in the PPNB stamps. The engravings on these objects, as noted by Cauvin, resemble the pictographs of early writing of a later time. In addition, the study of the tokens by Schmandt-Besserat suggested that these are elements of a counting system.

Activities within the interaction spheres are the traded or exchanged items. Their distributions indicate a wide network where sources and producers were located beyond the permeable boundaries of what I believe should be called the PPNB civilization or proto-civilization. Among the better known exchanged or purchased materials were basalt tools, obsidian, chlorite bowls, asphalt, cinnabar, and marine shells.

The stratigraphic gap between the PPNB layers and those labeled as Pottery Neolithic is well established in the Levant and eastern Anatolia and is due to major short climatic change around 8,400-8,200 cal BP. It is well recorded in the ice cores, in pollen cores in Greece, Anatolia, the Levant, as well as in the stalagmites of Soreq Cave as shown by Bar-Mathews and associates. I believe that the impact of a series of droughts directly affected the Neolithic tribal societies that subsisted on farming and herding, in which the demands of better-off

individuals (or families) drove the flow of prestige goods, and exchange of commodities with foragers, and could not under the new circumstances continue to accumulate surplus. The economic deterioration would accelerate the competition for leadership within such ranked society, resulting in an organizational change expressed in the disappearance of previously large villages and the establishment of smaller villages, hamlets and farmsteads. The new conditions probably enhanced the reliance on the more flexible subsistence strategy of pastoral nomads. However, as the Mesopotamian evidence of the Hassuna/Samarra culture indicates, that the recovery of the social systems took only one to three centuries, and the local populations were on the road from ranked tribal societies to early chiefdoms.

In sum, the archaeological information from the Levant, Upper Mesopotamia and Anatolia raises several major issues. I feel that the only reasonable resolutions of these will allow us to move farther in deciphering the origins of chiefdoms and the ensuing emergence of state, and even understand the origins of the differences in regional cosmologies:

1. Does the archaeological record permit the conclusion that population growth or relative 'demographic pressure' drove the evolution of farming societies and the need to take over new lands? Was intentional cultivation the stable source of staple food that resulted in rapid population growth? How long did it take to turn a field of one kind of wild cereal to a fully domesticated one?
2. Can we map the territories of social entities during the PPNA, PPNB and Pottery Neolithic periods and the boundary shifts that took place in time? Is it possible to estimate population size for these territories? Where do we need new excavations to be carried out? In this context, we should also wonder to what extent we lost crucial information by the flooding of so many river valleys in the region. Did many important Neolithic central localities become lost for ever, being buried under the flooded mounds?
3. What was the location of the original 'core area' of the Neolithic Revolution? Did the center of socio-economic changes move from one 'core area' to a second or to additional ones? Can we interpret the move to colonization as demic-diffusion (suggested by Ammerman and Cavalli-Sforza), or transmission of technology and ideas? Does the information from the Near East support the 'wave of advance' model or the 'saltatory jumps' proposed by van Andel and Runnels? I consider the two models as complementary. The 'wave of advance' draws the large picture and the average rate of movement while the 'saltatory jumps' deals with the detailed reality within the region.
4. Did the dispersal of the Neolithic economy depend on the geographic axis as a major determinant as predicted by Crosby and Diamond? The spread in the

Levant and the Zagros was along a north to south axis, while the expansion into Anatolia and Thessaly was east-west oriented.

As a final note on another aspect where archaeology and linguistics interact: if the origins of the Indo-European languages is attributed to the Anatolian region, perhaps we can more clearly locate the core area, either on the

Anatolian plateau or in the northern Levant – Upper Mesopotamia. This will immediately require the discussion concerning the origins of the Afro-Asiatic languages and their relationship to the dispersal of agriculture from the core area into Egypt, while taking into account the locus of independent domestication of the cattle in the eastern Sahara.

Supra-Regional Concepts II

The Emic View: Social Questions of the Neolithisation of the Near East

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The better we understand the diversified processes of Neolithisation in the Near East, the more it becomes evident that there are different critical thresholds that have to be crossed changing from hunting and gathering to farming. A recent ethnoarchaeological analysis of 43 ethnic groups has shown that the changes hunter-gatherers must undergo before cultivation of plants is adopted are mainly social ones (Benz 2000).

The social system of hunter-gatherers is based on almost unlimited reciprocity. All members of a group share food with each other. Thus, often many people come together and groups get larger and stay together longer where resources are abundant. But when shortages or social conflicts occur, they disperse again. A lack of resources is normally managed by migration. Rare cases of short term storage (less than a month) to respond to predictable shortages of resources have also been observed. Nevertheless, the main principle is sharing and open access to resources. This kind of social risk management is the best way for hunter-gatherers to avoid food shortages. This basic social characteristic, general reciprocity, must be abandoned in order to make long term storing of seeds possible. What must happen to make hunter-gatherers change their social system?

From the point of view of (sub-)recent hunter-gatherers, cultivation is only one strategy in procuring food. But it is the last one to be practiced and is only adopted when ecological or social constraints make it impossible to react to a lack of resources by migration, by sharing, or by short-term storage.

When hunter-gatherers are forced to stay in one place and food shortages subsequently occur, their social system breaks down. Hunter-gatherers may be forced to stay in one area due to rare resources (mostly water). However, recent hunter-gatherers more often gave up their mobile life due to abundant, locally restricted, calculable resources. This also seems to have been the case

in the Epipaleolithic of the Near East (*cf.* Henry 2002). Consequences of temporary food shortages are then:

1. Access to resources is restricted. General reciprocity is no longer practiced. The number of persons to share with is reduced. Most often ties of consanguinity get stronger, in contrast to hunter-gatherers, who usually practice fictive kinship.
2. Local separation of camps.
3. Resources are hidden from other members of the camp.

But in groups that transgress a certain number of members (>50) and are living together for a certain time (more than a month), sharing becomes ineffective and is reduced. When hunter-gatherers become dependent on locally restricted resources, they do not give up this location, even when conflicts occur. Due to this commitment, mobility is reduced and other possibilities to respond to food shortages must be looked for.

The solution preferred by hunter-gatherers is storage. In environmentally favourable regions sedentary groups may stay on this level and – depending on resource abundance – they might even be able to feed a growing number of people for a long time. Groups with more members would then demand a more or less hierarchical conflict management. Specialisations occur and the demand of luxury or symbolic goods either to demonstrate inter- or intragroup social differences or for barter would increase.

Territorial commitment (Step 1 on the way to farming) is thus an indispensable condition for the reduction of reciprocity (Step 2), which is necessary for long term storage of seeds (Step 3). Only as a last solution, when local resources become scarce, do hunter-gatherers start investing in resources (Step 4). At the beginning this is not a continuous process. Fields are often neglected when not needed. But once sedentary life and investment in resources are adopted, biological and social factors, which

are surely not anticipated, may lead to population growth and thus reinforce social differences as well as territorial commitment.

What does this mean for the Neolithisation in the Near East and for further research?

According to the ethnoarchaeological model, it was not cultivation itself but territorial commitment and the reduction of reciprocity that were necessary conditions of Neolithisation (Benz 2000: 141 ff.). The evidence for domesticates marks only the final stage of this process. Furthermore, the eventuality of a low domestication rate, as Davies and Hillman (1992) pointed out, renders it even more difficult to time the beginning of continuous harvesting, storing and sowing (*cf.* Nesbitt 2002).

These ethnoarchaeological data match very well with the polycentric model implicating diverse forms of adaptations of Epipaleolithic and early Neolithic groups in the Near East (Gebel 2002). Depending on resource abundance, group size, and population density, territorial commitment might have different consequences. In favourable areas socially stratified and/or sedentary hunter-gatherers may have existed beside early farmers. However, early farming communities may also have lived in territories where sedentary hunting-gathering would have been impossible. Therefore, one universal process seems less probable than regionally diversified processes of Neolithisation.

The implications of the ethnoarchaeological model also lead us to assume that territorial commitment first occurred due to locally abundant resources, probably already in the early Natufian. Reviewing the archaeological data, it should be possible to trace the process of increased territorial commitment more precisely. We should try to find out when mobile life was no longer accepted either from a social point of view or no longer possible because of environmental and demographic constraints. For example, the cultural groups of the PPNA

seem to be regionally more restricted than the Natufian. Is this a result of research history, or do the archaeological data reflect a real increase in territoriality? When do symbols of group identity, luxury goods, signs of ritual or religious expressions (Göbekli Tepe, 'Ain Ghazal) increase strikingly? It remains open to debate how climatic changes and environmental conditions triggered, enforced or retarded these social processes.

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Supra-Regional Concepts II

There Was No Center: The Polycentric Evolution of the Near Eastern Neolithic

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1. The Near Eastern Neolithic Revolution was a Polycentric Evolution.

This evolution was composed of many regionally different, shifting, and increasingly interdependent socio-economic and symbolic developments and interactions,

which in the beginning (12th – 8th millennium BC) were much dominated and diversified by the natural conditions of the individual regions. Starting from the 8th millennium and into the 7th – 6th millennia BC, factors other than environmental ones began to dominate socio-economic and symbolic developments, such as new modes

in land-use and the management of biotic and abiotic resources, with all their consequences in related production structures and in social and political organization. However, larger parts of the Near Eastern semi-arid to arid fringes remained in “conservative” life modes, not leaving foraging structures. Regionally diversified potentials of the Near Eastern Early Holocene created culturally, ideologically and technologically competing life-ways, which were the momentum of a finally successful, progressive and innovative Neolithic trajectory. Accompanied by local and regional failures and setbacks, they gradually established and controlled production modes in the Near Eastern core and corridor areas, often temporarily supported by some of the semi-arid and arid fringes, and much promoted by the new patterns in sedentary human territorial behavior. The regional diversity of this evolution strengthened exchange networks that transferred flourishing cultural identities/styles (or forced their regression) on supra-regional, Fertile Crescent-wide scales, such as the PPNA, PPNB and related entities (also compare the comparable feature of the European Neolithic Bandkeramik Culture stretching from the Ukraine to the Paris Basin and from northern Poland to the Alps).

The Middle East shows a substantial diversity by its *c.* 520 landscapes hosted in *c.* 25 principal geographical units with their *c.* 130 natural sub-regions between NE Africa and Afghanistan, Turkey and the Arabian coasts (Abdulsalam 1988). Although we cannot assume that the Late Pleistocene/ Early Holocene subdivision was identical, we may expect a very similar pattern, but with different extensions and borders. The specific local and regional blends of natural potentials and deficits for a Neolithic life created the material conditions of Neolithic complexity, in which many developments must have occurred between its establishment, stagnation, and even reversal into Late Epipalaeolithic production modes. These many combinations of environmental ingredients excluded homogeneous processes, linear diffusion or sequential development phases during Neolithization. Processes occurring in this framework ask for explanatory approaches that even can accept the four major Neolithic consequences (sedentary territoriality, cereal cultivation, animal domestication, pastoralism/ irrigation agriculture) as potentially contemporary and neighboring, but representing regionally different stages of development.

In my view, the major reason for the delayed and controversial understanding of the Near Eastern Neolithization is the failure to adopt polycentric concepts within the mental faculties created by the competing research schools, which often stress their regional evidence and understanding for the explanation of a supposed Near Eastern-wide process or phenomenon. Arguments too often value regionally recognized prime movers as valid for the (different) conditions in neigh-

boring regions, if not for the Fertile Crescent. This could be, for example, the reason for seemingly conflicting argument trends about the origins of cultivation: the generalized argument that drier conditions reduced wild cereal stands and thus led to their cultivation opposes the generalized explanation that abundant wild cereal stands forced their cultivation because they caused over-exploitation through the population growth they triggered. What if both causes co-existed in neighboring regions?

Neolithic polycentrism cannot be evaluated without regional-specific approaches that identify a local and regional contribution in the framework of other such contributions to the general trajectory. Polycentrism research develops from the base to the frame (or, in the words of Bo Dahl Hermansen: “Macro-concerns must be approached from the micro-perspective”.) and rejects arguments based merely on diffusionistic understanding. Geographically, Neolithization not only took place in a system of territories (core and periphery types of zones) and their boundaries, or in shifting interaction spheres: these systems also had stable geographical elements, such as barriers (*e.g.*, some of the Zagros Mountain ranges or the arid lands between the Balikh and the Khabur), transfer areas (such as the eastern Mediterranean shore), and corridors (*e.g.*, the East African Rift Valley), which permanently regulated expansions and shifts. The same geographical element may have functioned completely differently over periods of time: for example, the Orontes corridor could have been a technological and cultural migration route during the later PPNA and E-MPPNB, but its favored catchments may have developed later into a more impermeable system of territorial integrities that did not easily permit entrance and passage of innovation exchange between the north and the south by that discrete route (as the delayed penetration of pottery technologies to the south and the persisting white ware technologies here might suggest).

2. Near Eastern Neolithic Polycentrism was Fueled by the Polycasuality of Domesticating Socioeconomies.

On all levels of human expression (ethological, environmental, cognitive, social, ideological, economic, technological), human behavior and its regional developments were altered during the Near Eastern Neolithic in a basically evolutionary process under the regime of increasingly forceful domesticating structures. The key to understanding Neolithic phenomena is to evaluate the combination of such adaptively functioning ingredients that produced the momentum at a given time and place for a specific Neolithic phenomenon, developing further the new domestication framework of which it became a part. The recipes of the Neolithic menu promoted the appropriate ingredients for a production-mode lifeway:

1) a new human selective behavior approached abiotic and biotic resources by means of specialization, 2) productivity became increasingly subject to standardization and surplus management, 3) available time and labor force (progressive population dynamics) beyond subsistence needs developed societal diversity and hierarchy, and 4) the permanent formation of new ideological and social paradigms tried to secure the hasty and jerky route towards and establishment of sedentary life. The last was not always successful, as the collapse of the mega-site expansion in Jordan testifies.

Whatever the type of phenomenon (such as a fully established iconographic and symbolic/ religious identity in southeastern Turkey/ northern Syria by the PPNA, the technological/ material transfer by itinerant craftsmen/ traders in the LPPNB and EPN, the LPPNB mega-site expansion in Jordan, or Ubaid pottery reaching the Trucial Coast of the Omani Peninsula), they all were subject to many sorts of causes and mechanisms and were driven by complex composite material and non-material agendas. Polycasualism created a diversity and a wealth of expressions in human life hitherto not reached, and thus it served the overall success of the Neolithic trajectory and provided the base for the later Near Eastern civilizations. Ethnicities and linguistic identities, shared symbolic charges, social paradigms and other non-material parameters mixed with material parameters like market needs, abiotic resource wealth, topography and sedimentary environments suitable for irrigation, standardized core reduction techniques and tools, etc., in order to form a regionally balanced polycasualism.

A superb example of a polycentric and polycasual trajectory is the spread of the naviform/ bidirectional core technologies during the Levant PPN west of the Khabur. Their diversity is dominated by socially and environmentally conditioned, regionally or locally delimited adaptive strategies and factors. Intensive research concentrating in the regional variability of these techniques will soon approach an understanding of the mechanisms of origins, reception, modification and re-adaptation in the various naviform provinces. The expansion and decline in space and time of this innovative lithic notion can stand as a paradigm for how Neolithization functioned.

3. A Near Eastern Neolithic Polycasualism Opened the Way for New Ethological Dispositions in Territoriality and Aggression, Identity and Alliance Behaviors, Which Ensured the Success of Producing Socioeconomies.

A hitherto much ignored argument, but crucial cause for the establishment of Neolithic life, is Neolithic territoriality. Over several millennia, the various stages of food production in the various environments constantly

demanded new adaptations in human territorial behavior and conflict management, leading to more and more complex social answers to the rapidly growing new levels and spheres of conflict. It must have been a bumpy road, and many disruptions or collapses in regional developments, often previously explained by means of climate, environment, technological decline, etc., could have had different causes or co-causes associated with social or socioeconomic resolutions that were not found quick enough to manage conflict-loaded developments. This especially refers to situations where a rapid growth of population must be assumed and population centers developed (for example, the hypertrophic LPPNB mega-sites in Jordan). On the other hand, intensive conflict and social disasters must have been a source of social innovation. Neolithic conflict and power, has become an prominent issue of the research. The new types of aggression (such as indigenous warfare), identities (e.g., prestige-good based, magical and ritual practices, family systems, etc., but also house/ land/ resource/ goods ownership), and alliance/ efficiency behavior (as revealed in standardization of process and product, technological chains, but also in corporate specialization, communal tasks, etc.) all reflect new mental and physical territories and their boundaries.

While Palaeolithic adaptations appear territorially more flexible and freer from regional stress (compared with the Neolithic subsistence economies), territorial stress could have already occurred within some of the food-rich and spatially limited Epipalaeolithic habitats. Here, biotic resource competition seems to have occurred for the first time as a result of population growth (as, for example, in favorable areas occupied by Zarzian and Natufian groups). In these areas of growth a new phenomenon of human (Neolithic) ethology arose, that of territorial inflexibility. Other forms of aggression and conflict management were needed in order to cope with the territorial claims of neighbors within and outside the bands. Territorial inflexibility had to find the above mentioned new social paradigms in order to maintain and promote the integrity of the socioeconomic substratum. The emergence of Neolithic individualism with a less band- or community-minded understanding of the individual would have been the presupposition for the emergence of more personalized territories (socially, spatially, ideological), supported (and expressed), for example, by developments of work hierarchies (*chaînes opératoires*) or the diversification of the goods spectra and ritual environments, helping to define these new shifting social identities and alliances. This individuation (possibly first culminating during the MPPNB - LPPNB transition) and the needs of the increasingly complex social hierarchies gave birth to the first chiefdoms. This chiefdom trend was not only be the result of necessities to solve conflicts within the local social groups, it possibly also reflects the necessity to establish local or region-

al power; both were aimed to regulate the increasing conflicts about internal and external property claims, including competition on resources, and to control the distribution and protection of the surplus products and their related techno-economic strategies.

It is very likely that Epipalaeolithic and Neolithic territorial behavior and social structures co-existed for millennia in neighboring regions (as at the borders between the arid and semi-arid lands), depending on the status and preservation of their key biotic resources. It also could well be that there was not very much contact between both worlds, as long as no claims were laid to the same resources.

To conclude, the ecological variation of Near Eastern environments must have stimulated a considerable regional variety of territorial behavior and aggression, and thus specific adaptive strategies in the formulation of ideologies, including socially controlled interpretations of society, conflict, environment, etc. Social adaptations for managing territorial conflicts appear to be the prime cause for the onset of Neolithic life; or, in terms of polycentrism, the forced regional social diversity enriched the supply of social paradigms and experience for overall Neolithic development.

4. There Was No Center, or: There Were Hundreds of Centers.

The type of “centrism thinking” a researcher employs is a matter of the perspectives she or he could develop during the exchange with selected data, and it has much to do with modern concepts of centrism/ centrality and their mental hegemony. It has little to do with the central patterns we do have in the Near Eastern Neolithic. Moreover, the understanding of “center” is always ideologically charged and interpreted, usually fixed to a feature or combination of features that do not necessarily take all parameters into account and which are relevant to identify “centrality”. An area may be a center for – or source of – certain Neolithic features, while for other aspects it was of marginal importance for the Neolithic trajectory. We have very basic problems with the terms “central” and “center” in Neolithic research, and this of course extends to the notion of polycentrism, too.

Identifying a center in Neolithic research has always been accompanied by the explanation for why the region is supposed to be a center. In that respect past research made its arguments testable. But when it came to the mechanisms of dispersals and the relevance of the impacts by this specific influence from a center for the interaction frameworks and the Neolithic trajectory, arguments often lack the consideration of how (or if) these influences were received in the neighborhood and what reactions were reflected back on that supposed center. This one-way thinking in diffusionistic understandings is for me the core problem in Near Eastern Neolithic research.

I see no other chance than accepting “center” concepts in the Neolithic discourse, but these concepts need to be a subject of urgent modification. The “one-way-centers” in the above sense must disappear from the arguments, and – as a first step – provide space for the understanding of “center” as a developing and interacting focus of, and reaction to, internal and external demands and constraints. By that understanding, we come nearer to the prehistoric truth.

The past-century's approaches to explain the Near Eastern Neolithization operated far from the complexity of the Near Eastern Neolithic “polymorphism”; the tendency was to neglect the polyphenic character of the process and to identify discrete, precocious centers that were simply declared as cores of dispersals (mostly the working areas of the scholars; also see above the modern concepts of centrism and their mental hegemony). It is easy to declare such centers anywhere when isolating one parameter or a set of features. It is especially the “artefactologists” and the environmentalists among us who have helped considerably in these “There-is-the-center!” mentalities, and even some serious recent complaints on the (non-existing) southern Levantine supremacy show the emotional fixation of center-thinkers. This all does not help the understanding of the Near Eastern Neolithic. Even the symbolic and lithic generalists (*e.g.*, the *koiné* or Big-Arrowhead-Industries concepts) have not been too helpful, because they emphasize only certain aspects of the Neolithic trajectory and have neglected other substantial elements of the process. Research of the last decades has been caught between the dispersalists and generalists.



Fig. 3 Klaus Schmidt and Hans Georg K. Gebel (photo: F. Hole).

Diffusion is just one of the mechanisms in the Neolithic momentum; there are processes of assimilation, separation, splitting, stagnation, etc., that have potentially – in varying influence and in all material and non-material contexts – their equal share in the overall development. And there should be influences in the Neolithic devel-

opments that evade explanation and might be described by means of chaos theory only.

In terms of research strategies, the polycentric approach first requires – different from the more or less simplistic or monocausal (prime movers) explanations and models – exemplificative work on the regional scale, in the sense that the interaction of regional developments is studied for larger parts of the Middle East. It demands that research considers all levels of human expression (or, in terms of systemic approaches: all sub-systems, including the ethological, environmental, cognitive, social, ideological, economic, technological features), and not just concentrating on isolated aspects from the beginning, making them the source of explanation (*e.g.* environmental, social, symbolic reasoning). The interdisciplinary competence and readiness of Neolithic research, especially regarding the archaeobiological and geoarchaeological sciences – but also *vice versa* – needs much to be improved. The goal is to understand the shifting structures of the cross-regional patterns in order to gain insights into the main trends in the supra-regional processes of the trajectory.

In that respect, the polycentric approach asks us to go back to the thorough understanding of the regional devel-

opments, before the supra-regional model can be approached. Generating quick explanations from simplistic models must be seen as unsuccessful past research agendas that prevent the comprehension of the complexity of the Near Eastern Neolithization. Understanding and deeply respecting the great achievements of the past generation's research, we have to realize that we now stepped on the threshold of a new era of research.

Note

This contribution makes use of thoughts expressed in: “Central to What?” (Gebel in press). Whenever the terms PPNA or PPNB were used in this contribution, it means: PPNA or PPNB and related cultures.

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Supra-Regional Concepts II

Assessing the Degree of Supra-Regional Homogeneity in Cultural Elements Within the Near Eastern Neolithic

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Introduction

On a global scale, the formation of supra-regional cultural networks is generally examined across several dimensions: demographics, economics, environment, social and ideological behaviors, and technology. The specific behaviors and their material consequences that are nested within these dimensions and that are observed to be homogeneous across a large geographic area are typically viewed as *causes* or *expressions* of such broad networks. Sorting out the behaviors that triggered the emergence of supra-regional networks from those that simply emerged as a result of such networks typically requires a detailed examination of specific behaviors on a high resolution time-space grid. Similar analysis also assists in distinguishing between (1) supra-regional networks that emerged from a single transition point and then spread through diffusion and expansion and (2) those networks that emerged through the consoli-

ation of multiple regional/sub-regional networks that had previously formed spontaneously across a broad area.

Novel Elements of the Near Eastern Neolithic

Examination of the cultural dimensions listed above shows that there are several characteristics of the interval from *ca.* 10 - 6.5 kbp that differ from the preceding Epipaleolithic. These novel or unique NE Neolithic elements include:

1. Demographics
 - a. increased permanence in settlements
 - b. increased absolute size of settlements
 - c. increased number of settlements
 - d. increased range in sizes of settlements (camps, hamlets, villages, towns)
 - e. longer duration of settlements in same locus

2. Economics
 - a. wider range of economic options – foraging, farming, herding
 - b. specialized production of trade items
 - c. broader geographic scope of trade
3. Environmental Distribution
 - a. broader distribution encompassing more varied settings, especially the arid zone, rift valley floor, etc.
4. Social & Ideological
 - a. presence of public space
 - b. greater elaboration and frequency of ritual, ceremonial items.
 - c. presence of intra-site/intra-mural ritual space
 - d. emergence of ritual sites.
 - e. perhaps notion of ancestral space - skull cult
 - f. notion of household structure as reminder of social order (Hodder)
 - g. notion of supra-regional symbology (Cauvin, *cf.* Hole).
5. Technological
 - a. elaboration of groundstone
 - b. chipped stone industry
 - i. Naviform Core Technique – after long trend of diminution during Epipaleolithic, blanks become larger/longer.
 - ii. Introduction of arrowhead & widespread distribution.
 - iii. During span of PPNB lithic technological refinement declines.
 - c. ceramics
 - d. metallurgy (copper)
 - e. transition from curvilinear to rectilinear architecture
 - f. common use of plaster

The Degree of Geographic Homogeneity of Novel Elements

The degree to which these novel elements display heterogeneity across the Near East, however, is of a relatively low order. To put this in perspective, it seems worthwhile to compare the Near East Neolithic to other supra-regional networks, especially those that share similar characteristics such as duration, size of area, basic economy, etc. I selected the Mississippian Tradition (A.D. 800-1650) of Eastern North America, given that it encom-

passes a similar sized area (*ca.* 1.2 mil. km²), an incipient farming economy, and a socio-political level (chiefdom) and demographic structure potentially applicable to the Near East Neolithic (see Wenke 1999 for review). When the Mississippian Tradition is compared across the salient cultural dimensions, we see marked homogeneity at both high (*e.g.*, environment and economy) and low (*e.g.*, specific ritual motifs) levels. Environment, economy, settlement types (hierarchies), social, ideological, and technological elements are remarkably similar between Mississippian period sites of similar settlement hierarchy across the area encompassed by the network. Granted, the duration of the Near East Neolithic, which is more than four times longer in duration (*ca.* 3,500 to 850 years), would be likely to have resulted in a greater spatial diversity of elements. But even when the temporal scope is limited to say, MPPNB, we still see marked spatial diversity when compared to the Mississippian Tradition.

Potential Explanations for the Nature of the NE Neolithic Supra-Regional Network

The overall heterogeneity of the Near East Neolithic may be an expression of ideas and objects being broadly dispersed across a landscape connected by adjacent but regionally and sub-regionally distinct interaction spheres. Rather than strong, formal connections between nodes of the network, loose, casual, and opportunistic connections are more likely to have channeled the flow of ideas and items across the Near East Neolithic landscape. Moreover, the behavioral means by which the connections were maintained may have been varied across the network, largely conditioned by regional/sub-regional cultural ecology. Where ideology/ritual may have sustained connections in some regions, pure economic concerns (trade) may have provided the reasons for social interaction in other regions. Such a cultural mosaic would explain, in part, the low degree of homogeneity in cultural elements across the Near East Neolithic landscape.

Heterogeneity between cultural elements of the Near East Neolithic is also more consistent with more rather than fewer transition points from the preceding Epipaleolithic. While this certainly does not rule out the possibility of expansion/movement of populations and diffusion of ideas, it does indicate that we may want to rethink embedded notions of the directionality of innovations (*e.g.*, core to periphery, north to south).

Supra-Regional Concepts From a Local Perspective

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Introduction

The present paper is meant as a contribution to the workshop “Towards New Frameworks: Supra-Regional Concepts”. In their invitation the organizers emphasize that the workshop will try to promote a multi-vocal attitude in which different approaches may be confronted in an attempt to develop new frameworks for the understanding of the Neolithic of the Near East. The considerations that follow are offered as a contribution towards that end.

Jacques Cauvin's Neolithic

Traditionally, the Neolithic of the Near East has been understood as the phase in cultural history or cultural evolution that saw the introduction of a series of changes, foremost of which were the introduction of agriculture and animal husbandry; i.e., the emergence of food production. This phenomenon was understood as the inevitable consequence of the readiness of culture (Braidwood) or as a strategy that served the purpose of responding or adapting to changing environmental and demographic conditions (e.g., Binford, Childe, Flannery). Other aspects of the Neolithic, like the social and ideological changes that seemed to be associated with it, were frequently seen as systemic reconfigurations derivative of adaptive changes, as being of secondary interest, or simply as being less susceptible to investigation.

In several recent publications the French scholar Jacques Cauvin suggested that the fundamental change that happened at the outset of the Neolithic concerned human mentality rather than subsistence economy. Cauvin observed that the technological and economic changes that we usually understand as general features of the Neolithic appeared, not prior to, but rather in the wake of, what he called a “revolution of symbols” (Cauvin 2000a, 2000b). This revolution of symbols, according to Cauvin, happened during the Khiamian and was mainly expressed in the emergence of the “woman” and the “bull” as dominant symbols. Cauvin traced these two figures to later contexts, such as the imagery at Çatal Hüyük and on Halaf pottery, where the relation between the two appears to have been that between mother and son, and on into the Bronze Age when the “son” appears, in addition, as “spouse” of his divine mother. Hence, he could suggest that the emergence of the two dominant

symbols in the Khiamian may have signified the advent of a new religion, i.e., the “birth of the gods”.

Conceptually, this situated humans in a hierarchical world of binary oppositions like “above-below”, with a mother goddess at the top, closely associated with the bull. In the “Mureybetian” of the upper Euphrates, and throughout the “Levantine corridor”, the revolution of symbols was followed by the introduction of cultivation and additionally, in Mureybet IIIB, by the introduction of rectangular architecture. These developments in different aspects of material culture, according to Cauvin, were linked through an intricate system of metaphorical associations that ultimately led to new transformations and the emergence of a dominant 'Neolithic' culture, the PPNB, with all its various manifestations of a “religion of the bull”, an ancestor cult, symbolic imagery, weaponry, domestication, etc. According to Cauvin, this “culture” was largely articulated as a top-down process [structure > action] that diffused from a core to the periphery, mainly, though not exclusively, through movements of population, each of which was associated with new cultural transformations. It must be emphasized, of course, that Cauvin does not see all this as a “conceptual and discursive mode of thought”, but as “perceived and lived in concrete form at all levels” (Cauvin 2000a: 209).

Cauvin argued convincingly that this sequence of events could not be explained by appeal to traditional demographic or ecological models, and he introduced instead the notion that the Neolithic basically expressed a change of mentality. From that change of view emerged the wish of humans in the region to make a place in the new hierarchical world for themselves; i.e., to conquer and dominate the wild. According to Cauvin, then, it is in such a cultural setting, and earlier than usually understood, that the first experimentation with cultivation and herding would have been initiated: those features of the Neolithic which have traditionally been the focus of investigation.

Discussion

(1) One of Cauvin's fundamental contributions is his contention that the Neolithic expresses a transformation of human mentality, a change of world views. To Cauvin this change was linked with a revolution of symbols at the outset of the Neolithic. However, it may be suggested that a Near Eastern “revolution of symbols” could well have begun even earlier than envisaged by Cauvin (*cf.*

Goring-Morris and Belfer-Cohen 2002). Thus, it was already during the Natufian that some hunter-gatherer communities in resource-rich areas became more sedentary and began to practice a broad spectrum economy based on locally available resources. As far as I can see, the significance of this could hardly be underestimated, since, to the people involved, this change must have been linked with a change in the view of the land. With increasing sedentism, they would have developed more fixed ideas of geography (Sørensen 2002: 15; Gebel 2002: 33ff), including more centered or “concentric” understandings of the land (Tilley 1994: 35ff). In a settlement, such as early Natufian ‘Ain Mallaha, there is evidence of semi-subterranean architecture, stone lined hearths, and stone paving. In one house red-stained lime mortar was used to cover the wall (Valla 1991: 112). Then in the late Natufian the inhabitants of the site constructed a large number of plaster lined storage facilities (Valla 1991: 116). Indeed, some Natufian communities buried the dead within or next to settlements. These are practices that would no doubt have strengthened the feeling of belonging to the land; and, as phrased by Cauvin himself (2000a: 20), served metaphorically to reinforce the community of the living and legitimize its permanence. The practice of ornamenting the dead bodies of some individuals and burying some together with dogs, indicates that complex symbol systems and a sense of hierarchy had already developed in this period (Wright 1978). Although the preserved imagery of the Natufian is essentially zoomorphic, as Cauvin notes, one cannot simply dismiss the occurrence of anthropomorphic imagery, however infrequent and rudimentary, as insignificant (Cauvin 2000a: 17). On the contrary, it is significant that in some Natufian communities they did depict human forms; and it is probably also significant that they did not depict sexual attributes in this human imagery, *i.e.*, sex and gender must simply have been irrelevant in the context of production and use of this imagery. At any rate, many of these practices would appear to have co-occurred in the life of a few communities in Palestine, such as ‘Ain Mallaha, usually interpreted as more or less permanent base camps or “villages”. This certainly must have been linked with local reconfigurations of world views and changed people's sense of time, place, and hence, of belonging.

In short, it may be suggested that members of such Natufian communities had already brought about their own revolution of symbols and an associated change of mentality. This is not to promote the southern Levant as the source of the Neolithic at the expense of the upper Euphrates region. Neither is it to deny the importance of Cauvin's observation that it is in the subsequent Khiamian that the female and the bull appear as dominant symbols with all the connotations that follow from this. Rather, it is to suggest that “origins” is a matter of emphasis, and that any grand narrative about the “birth

of the gods” or “origins of agriculture”, as well as Neolithization, must take into account that local communities at different times and locations produced their own contributions. A few of these ultimately merged into a limited but increasing number of co-occurring “Neolithic ingredients” (Gebel *et al.* 2003), which to present-day Near Eastern prehistorians appear as a PPNB *koiné* or “interaction sphere”.

(2) It is likely, as Cauvin suggests, that cultivation and herding were not originally motivated primarily by economic needs. And the initial steps may well have been taken in the wake of a revolution of symbols which saw the emergence of the “woman” and the “bull” as dominant symbols. Indeed, viewing these experiments, as Cauvin does, as the result of an emerging drive to dominate the wild almost amounts to saying that cultivation, herding, and ultimately domestication, would have been highly symbolic practices in their own right. Alongside increasing sedentism, which had begun already in the Natufian, such practices would have established new relations between humans and the natural world, and hence they would have been integral parts of the way in which humans negotiated their own position in the diversified and hierarchical universe envisaged by Cauvin. Thus, cultivation and herding should perhaps be viewed as significant elements in an ongoing negotiation of symbols, and it is conceivable that they would have been enmeshed, from the outset, in a broad range of ritualized action (Gill 2003: 226ff; Sørensen 2002: 14ff; Tilley 1996: 189). For instance, through a careful contextual investigation, Tilley has shown that in the early Neolithic of Scandinavia, cultivation of the land was symbolically linked with tomb building, and cereal grains with pottery, cooking, fertility, and ancestral powers situated in the tombs (Tilley 1996: 189). Likewise, in the Neolithic of Britain and Scandinavia, bones of domestic cattle are mainly found in “ritual” contexts, whereas the main faunal contribution to the ordinary diet still derived from hunted animals (*e.g.*, Tilley 1994: 206; 1996: 111). Hence, according to Tilley, “the major reason for producing domestic food was its social and ideological significance in connection with ceremonial practices at the tombs and the bogs rather than any 'purely' economic reasons” (Tilley 1996: 111). This would have made the products of such practices an ideal medium of sharing and exchange, as well as providing suitable settings for competition within and between groups.

Of course, in Northern Europe domesticates were imported from Central Europe, and we should not expect identical patterns in the Near Eastern Neolithic. Nevertheless, something similar might well have been the case here. Jumping, due to limited space, to the MPPNB when domesticated ovicaprines became a significant element of the economies, and viewing the situation from a local perspective, in this case MPPNB Shaqarat Mazyad, it is indeed interesting to notice that here ovi-

caprine mandibles were found buried with the only human burial recovered at the site so far. Other evidence also seems to indicate sacrifice and feasting on ovicaprines (Jensen 2004: 65ff, 80). Thus, it would seem that the inhabitants of the site did indeed butcher and consume the meat of domestic animals at ritualized, communal events. There is some evidence, but not much, of wild species in similar contexts. This pattern is not universal for the MPPNB, however. A case in point is the evidence from the mortuary site of MPPNB Kfar Hahoresh. Here the situation appears to be more complex (Goring-Morris 2000: 107ff, 115) in that wild species like gazelle and aurochs seem to have played an important role in ritualized events alongside evidence for feasting on sheep/goat. The significance of this difference cannot be elucidated here, but the comparison, of course, stipulates the need to view overall patterns (in this case the widespread adoption of herding in the MPPNB) in terms of differences produced in a variety of local practices.

(3) Such a phenomenon as the “PPNB interaction sphere” could only have been brought about through human action and interaction. Thus already from the Natufian, human groups exchanged artifacts, materials,



Fig. 4 Çiğdem Atakuman Eissenstat, Edgar Peltenburg, and Bo Dahl Hermansen (photo: F. Hole).

and ideas, some of which traversed very long distances. During the PPNB this exchange seems to have expanded and intensified in a rhythm that corresponds roughly with Cauvin's phases of PPNB expansion. Three scales of exchange can be identified, namely local (within communities), regional (between local communities) and supra-regional (across regional boundaries). Since exchange at all three scales fundamentally depends on human action, it may be profitable to start investigations of large scale systems like the PPNB interaction sphere, where action was actually situated, at the local scale: in this case at MPPNB Shaqarat Mazyad in the Petra region.

Ongoing investigations at this site (500 m² excavated, original extent unknown) indicate collective feasting as

well as internal differentiation of activities amongst production units at the site. The differentiation, so far observed, concerns a variety of activities like food preparation and manufacturing of objects in exotic materials like turquoise from Sinai and shells from the Red Sea, as well as apparently more esoteric activities. This evidence appears in a changing architectural context, where an apparently seasonal campsite (only known from two small test trenches) eventually crystallized as a village of stone architecture. During the architectural phase the villagers incorporated public space into a number of individual premises, and the spatial distribution of activities was reorganized accordingly. All this suggests ongoing negotiation of social boundaries within the village, and increasing social segregation as a consequence. In such a social environment food sharing, as well as exchange of gifts and services between members of the community, would have provided a context for simultaneously maintaining social ties and negotiating status, rights of access and use, etc.

The inhabitants of Shaqarat Mazyad also exchanged gifts with members of neighbouring groups, receiving, refining, and reciprocating exotics, some of which had traveled very long distances, as well as apparently contributing a specialty of their own: products from migratory birds of prey (Jensen 2004: 39ff). The most frequent tool group in the chipped stone repertory is arrowheads, including Jericho points [a “southern” type] as well as Helwan, Byblos, and Amuq types [originally northern types]. A preliminary investigation by Jensen (n.d.) suggests continuity from the pre-architectural to the architectural phases of occupation at Shaqarat Mazyad, with Jericho points as the main component throughout the sequence (>50%), and increasingly supplemented with the other types, much like as at Beidha (Jensen n.d.). A minor proportion of the Amuq and Byblos points is nicely retouched. The significance of this is not clear, but if indeed the nicely retouched arrowheads of the period are to be understood as “prestigious” (Cauvin 2000b: 243), the prestige may have been in the act of receiving them and passing them on, more than in simply possessing them.

If indeed arrowheads played such an important role, both as a tool category and as status symbol, one would certainly feel tempted to follow Cauvin and others in the notion that warfare may have played a role in interaction as well, especially considering the decreased importance of hunting in the MPPNB. Together with the evidence for exchange of exotic materials and goods, therefore, this implies that exchange was not only a matter of maintaining social ties, but also a matter of competition, within and between groups, which may sometimes have been resolved through warfare. Thus, the evidence from Shaqarat Mazyad seems to indicate that there may well have been parallel or overlapping exchange networks for sharing and exchange of basic

commodities like food, and exchange of more exotic objects, each serving its own social function in forging social relations within and between communities. As an unintended consequence of these combined practices, inhabitants of Shaqarat Mazyad and neighbouring communities not only reproduced social practices of their own, they also helped to generate and to reproduce both those regional exchange networks that connected local communities and those supra-regional networks that connected different regional expressions within the PPNB interaction sphere.

At some point, the people who frequented the site shifted from an apparently mobile to a more sedentary way of life, creating a settlement of circular architecture, mainly constructed in the local sandstone. This architecture certainly resembles that of sites like early Beidha, Wadi Tbeik, and Nahal Issaron, but it encompasses features that seem to be peculiar to Shaqarat Mazyad. These include framing of doorways, peculiar uses of vertically erected slabs, and a recurring architectural feature just inside doorways and always oriented roughly to the east (Hermansen and Jensen 2002). The latter architectural feature appears to be linked with a burial practice (one recovered burial) that includes the typical MPPNB notion of secondary removal of the skull but here situated in a context peculiar to Shaqarat Mazyad. As in the Natufian case discussed above, but entirely independent of it, these changes must have been linked with changing notions of time, space, and hence of belonging, of the particular people involved in this particular transition. And all that is irrespective of whether the community in question was indigenous, had entered the area as newcomers, or any mixture of the two, and irrespective of where the “Neolithic ingredients” originated and when they were adopted by the group.

Thus, when engaging in exchange, competition, and warfare, and when adopting “Neolithic” practices, the inhabitants of Shaqarat Mazyad did not just adopt the PPNB culture. Neither did they nor anybody else just bring it in from outside. Rather, they adapted and created innovations in a flow that corresponded to transitions that emerged from ongoing negotiation of their own ways of life. Hence, they not only helped reproducing the PPNB as large-scale structure, they also produced differences which, as I see it, are just as significant (see, e.g., the papers in Kuijt 2000). These differences are archaeologically recognizable as local intra- and inter-site variation and regional differentiation within a large-scale interaction sphere where participating parties were connected through situated action and interaction.

Final remarks

The loose conglomerate of considerations offered here is not meant to suggest that movement of human populations in different varieties did not play a significant

role in the expansion of the PPNB interaction sphere. They evidently did. But a model that draws upon 'top-down' relations between structure and action, system and individual, and upon diffusion, mainly through movement of population from a core to a periphery, is just not sufficient to elucidate the variety of local expressions of the Neolithic that becomes evident when focusing on specific cases like those of 'Ain Mallaha, Shaqarat Mazyad and Kfar Hahores, and on regional variation. Such considerations should, therefore, be complemented by a local perspective that accounts for how individual communities, and possibly even individual agents contributed to Neolithization through inventiveness and creativeness of their own; by engaging in exchange, competition, and even conflict as well as by moving to new territories. In short, the classical culture historical narrative of origins, general and specific evolutionary theories, as well as Cauvin's structural [pre-]history should be complemented by investigations and interpretation from a reversed 'bottom-up' perspective.

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Supra-Regional Concepts II

Can We Identify a Centre, a Region, or a Supra-Region for Near Eastern Plant Domestication?

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Introduction

In this note I concentrate on the first part of the Neolithic, the PPNA (defined here chronologically, c. 10,200-9,500 uncal. BP). Some contributors to this workshop have proposed that this period has been relatively well understood for some time, particularly with regard to plant domestication. In contrast, I believe that the publication in the last decade of high-quality archaeobotanical data, from both PPNA and PPNB sites, suggests a radically different scenario to that based on the classic excavations of the 1960s/70s. New data both allow us to critically re-examine some older views, e.g., of the “Levantine primacy school”, and to compare regional trends in much greater detail than before.

Reassessing Levantine Plant Domestication

A key piece of evidence for the primary role of the Levant (in the traditional, narrower definition of the region) in plant domestication is that the earliest remains of domesticated plants are found at sites in the region. There is

still no evidence for PPNA domestication in other regions, but the PPNA evidence from the Levant now looks less secure (see Nesbitt 2002 for full review and citations).

There were two important sites from the 1960s/70s period. PPNA Tell Aswad has convincingly domesticated emmer grains, but no direct dating and, from the new excavations (see Stordeur's article) no evidence for the PPNA. The well-known material from Jericho reached full publication in 1983, by which time virtually all the domesticated material had been reassigned to the Pottery Neolithic, and the remaining PPNA period material (still dubious) is dated 9,300-9,200 BP.

In the 1990s Iraq ed-Dubb appeared to provide further evidence of PPNA domestication; however the small quantity of plant remains is compromised by the lack of direct dating, and the known intrusion of plant materials from upper levels to lower.

In conclusion, there is no archaeobotanical evidence – the *only* reliable form of evidence for plant domestication – in the Levantine PPNA, and therefore no evidence that agriculture started there first.

What Was Happening in the PPNA?

In contrast to the modest, poorly dated seeds from the above sites, more recent work has added some really substantial datasets that bear a very different interpretation. At Netiv Hagdud, in the Levant, there is good evidence from chaff for absence of domesticates, and a diet based on collection of wild barley and other food plants.

The most significant development for this period has been the excavation in the 1990s of PPNA-period sites in the northern Fertile Crescent, at Jerf al Ahmar (Syria), M'lefaat and Qermez Dere (Iraq) and Hallan Çemi (Turkey). The absence of PPNA sites from the region, despite the presence of Epipalaeolithic sites such as Abu Hureyra and Mureybit, was surely a key factor in the development of the Levantine primacy hypothesis. In terms of plant economy, the plant remains are comparable to those of Netiv Hagdud, with evidence from chaff for absence of domesticates at Jerf al Ahmar, and comparable plant remains (though lacking chaff) from the other sites.

At the same time as demonstrating lack of domestication, there are fascinating hints of cultivation/domestication. George Willcox (2004) has recently drawn attention to possible increases in grain size prior to full domestication at Jerf al Ahmar, possibly the result of selection for seed size during cultivation of the wild cereals. Sue Colledge has used statistical analysis of “weed” floras to postulate cultivation of wild cereals at a number of late Epipalaeolithic and PPNA sites (Colledge 2001).

Experimentation with cereal cultivation across the western and northern (W/N) Fertile Crescent, during the PPNA, will be difficult to prove, but seems a highly plausible precursor to domestication in the PPNB. This has a special importance for the topic of this workshop. We know that (a) wild ancestors of crops were present throughout the W/N Fertile Crescent from 10,300-9,500 BP, (b) cultivation of wild grains was likely taking place at sites in both the W/N Fertile Crescent, (c) there is no secure evidence that domestication of plants took place in the Levant before elsewhere. Therefore, any consideration of the origins of the PPNB farming economy need to look at the W/C Fertile Crescent as a whole (as a “supra-region”) rather than assuming a narrow region of origin. I think this fits well with evidence from projectile points (similar over long distances) of extensive “trade” in ideas over this period; could cultivation/agriculture really have developed in isolation?

What Was Happening in the PPNB?

Earliest Domestication

There is reasonably secure evidence for plant domestication in the early PPNB (9,500-9,200 BP), although there are dating problems with virtually all the sites.

Domesticates are present both at sites in the Levant (Wadi el-Jilat 7, Nahal Hemar) and in the northern Fertile Crescent (Nevalı Çori, Çayönü, Cafer Höyük). More-or-less contemporary material, of uncertain wild/domesticated status has been found in Cyprus. There is therefore no archaeobotanical evidence to suggest that domestication took place first in any one part of the Fertile Crescent. However, it would be premature to interpret this as positive evidence for contemporary domestication across the W/N Fertile Crescent.

Independent Domestications?

I strongly agree with Willcox's (2002) argument that the pattern of occurrence of domesticates at earlier PPNB sites and wild ancestors at PPNA sites points towards independent development of agricultural packages. There are some interesting correspondences with DNA evidence: for example the importance of barley at Levantine sites fits well with DNA evidence for region of domestication, as does the importance of emmer and einkorn in the northern Fertile Crescent. The appearance is not of a “snowball-effect”, in which agriculture picks up additional crops as it moves from its core area through the Fertile Crescent. Instead, it is not until the mid-PPNB that a well-established and homogeneous package of crops is present throughout the region.

The Subsistence Economy

So far, I have concentrated on the technical question of when and where cultivation/ domestication started, with the aim of showing that regional origins and interactions are as open a question in the PPNA, as in the PPNB.

Of course, as Asouti points out, the main interest of tackling agricultural origins is the impact that subsistence change has on settlements, social organisation, ritual and religion etc. There are remarkably diverse views on the key dividing line between a hunter-gather economy (albeit, one in which some crops may have been cultivated) and an agricultural economy. The traditional view, in which agriculture is one defining factor for the Neolithic, sees the transition at the Epipalaeolithic/ Neolithic boundary. I doubt many people at this workshop still hold this view: as Özdoğan points out, the Neolithic is better defined as a cultural phenomenon.

At the opposite extreme, some believe that a truly agricultural economy did not develop until the Pottery Neolithic or later, a view held by some excavators working in Turkey. This view is strongly influenced by arguments based on poorly preserved archaeobotanical evidence from Britain, and does not take into account the recent views of archaeobotanists familiar with British Neolithic material (Fairbairn 2000).

In my own view, there is an obvious difference in scale between PPNA and Epipalaeolithic sites, typically low,

small mounds (with the glaring exception of Jericho), and PPNB sites which are often massive mounds (for example, Ahiklı Höyük). This might point to the early PPNB period representing the dividing line between the two types of economy. This has implications for the workshop topic: how did such a potent economic force as agriculture affect the interactions between the different regions? Presumably increased wealth and increased population would have led to sharply different types of interaction compared to those based around long-distance obsidian trade etc?

Conclusions

- We can not be complacent in assuming we understand the PPNA – recent high-quality archaeobotanical evidence challenges traditional views on the (southern Levantine) location and (PPNA) dating of plant domestication
- The quality of the new evidence, combined with new DNA studies, means that subsistence changes and domestication events in the PPNA can now be studied at a regional level
- At present, evidence from weeds and grain size suggests that cultivation may have been taking place in both the western and northern Fertile Crescent in the PPNA
- It might be time to stop using the term Levant for an area of agricultural origins that many now delineate as encompassing Israel, Palestine, Jordan, western Syria, southeast Turkey and northern Iraq. The term western Fertile Crescent (if agreed to define the same area) might avoid giving the impression of spatial and cultural homogeneity which might obscure regional variations.
- Evidence from the occurrence of domesticates, and the late development of a consistent crop package, points

to independent domestication (and agricultural origins) in different regions. It's difficult to say if that is because of rapid spread of ideas, or because of similar pressures operating on hunter-gatherer communities across different regions

- Settlement evidence supports the notion of a fundamental shift to an agricultural economy at some point in the early PPNB. This might have had a strong effect on regional interactions.
- In answer to the question in my title, the evidence currently supports Gebel's view of a polycentric evolution. But I'm sorry to miss the opportunity of discussing these views at the meeting!

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Definitions, Perceptions, and Borders

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Neolithic cultures of the Near East, without doubt, are among the most extensively described and discussed entities of prehistoric archaeology. This is understandable, as the term Neolithic implied a new mode of subsistence, or the beginning of food production, issues that excited not only the archaeologists, but even more specifically natural scientists. Ever since the pioneering efforts in 1950s, considerable work has been done to answer questions as to why, where, and how agriculture and animal domestication began, the environmental background of this development, and its impact on the life of human communities. Accordingly, subsistence patterns of the Neolithic period became the main focus of research, considerably overshadowing the cultural profile of this happening.

At a certain level, defining the presence or absence of certain crops and/or domesticates, stood out as the main objective of Neolithic research. Likewise, in evaluating Neolithic sites, the habitats or the natural settings of settlements were considered as prime criteria. This does not imply that we are underestimating the significance of documenting issues that are related to subsistence or to environmental setting; moreover, we are fully aware of the fact that the sites of the Neolithic period provide an exceptional opportunity in understanding the mechanisms that led to the transformation of wild species to domestic ones. Here, we just want to indicate that overemphasizing issues related to the subsistence patterns have considerably obstructed attaining a clear vision of the Neolithic period.

With justification, it may be stated that the socio-cultural complexity of the Neolithic of the Near East have been obscured by issues related to husbandry and of environmental problems. One of the most apparent biases thus developed is comparing Near Eastern Neolithic cultures with other cultures that developed elsewhere just because plant or animal domestication took place in both areas. As it stands now, the formation of the Near Eastern Neolithic cultures is not only much more complex than previously assumed, but they are apparently different than all other models that we know from history.

Considering subsistence patterns, it is now evident that there is a considerable diversity, regardless of natural settings, among Neolithic sites. Even among contemporary sites that are located in similar habitats, there is no apparent pattern. Likewise, the preference for site location varies considerably among settlements, dis-

playing a large spectrum from riverine habitats to high terraces, from semiarid regions to intermountain plains, etc. Thus, neither the presence or absence of certain cereals nor the trajectories towards food production seem to stand as criteria in defining or in categorical classification of Neolithic settlements. On the other hand, in spite of all this diversity, it is evident that there are certain cultural values that are shared by all Neolithic communities, regardless of their subsistence pattern or of their environmental settings. Even a simple look at the composition of cultural assemblages is enough to indicate similar trends that can be traced throughout the entire territory of primary Neolithization. If one needs to find criteria that are applicable to all Neolithic cultures of the Near East, certainly this is highly sophisticated cultural complexity.

In earlier years of research, due to the research strategies focused on finding evidence of plant remains and animal bones, limited small exposures were considered to be sufficient in understanding Neolithic settlements. Even in the earlier years of research there were a few Neolithic sites that were extensively excavated, such as Jericho, Çayönü, Çatalhöyük, and all yielded clear indications that the Neolithic meant more than a change in subsistence. They all were large habitations, were well organized, and had monumental architectural remains. It was clear from the beginning that there was the employment of sophisticated technologies, high quality craftsmanship, extensive presence of non-utilitarian artifacts, organized long-distance trade, art, symbolism, etc. But the discussions on food production overran these assets, and for some time it almost became embarrassing to speak of issues such as art or symbolism for Neolithic communities.

In discussing regionalism in Neolithic, we should not forget that the areal coverage of Neolithic formative zone is now much larger than earlier assessments. In the earlier years the initial zone of the Neolithic was limited to the southern flanks of the Fertile Crescent and to the Levant. Now, most of the Central Anatolian plateau, the intermountain plains on the northern side of the East Taurus range, the flatlands of Syria, and to a degree Cyprus have been included to the Neolithic world. However still, this is a definable zone; its boundaries seem to have remained more or less the same for several millennia, from the initial stages of Neolithic formation up to its “mature” stage. Within this vast territory,

depending at what level one is looking, there are certain cultural values that can be traced all over; on the other hand, it is also possible to sort out this region into geographically definable techno-complexes or assemblages.

It is mainly due to the common cultural values or definitions that the Neolithic of the Near East is clearly different from any other culture. In this respect, intensive and continuous interaction and the distribution of knowledge within the entire region certainly singularizes the Neolithic formation zone from any other “exterior” culture. There are numerous cases displaying this striking phenomenon of sharing knowledge and, as a result of which, that made changes simultaneously. The sequence of building plan-types at Çayönü, from open grills to closed grills, to channel houses to cell plan buildings is exactly duplicated at Nevalı Çori and at Cafer Höyük, as if the same architects were constantly traveling around. Likewise, not only are the characteristic features of the “cult buildings” with benches, buttresses, standing stones, liquid-proof floorings to be seen in a considerably vast area, but almost everywhere they display a similar devel-

opment. Such common features or values can be found in almost all components of the Neolithic culture; what is not clear at all is how this system was working.

The recent work in the Central Anatolian obsidian sources has been highly instrumental in displaying the intricate nature of inter-regional interaction. While it is evident that the Neolithic cultures of Central Anatolia have certain traits that are distinctive from those of the south, it is now evident that both areas were fully aware of each other, as is shown by the atelier at Kaletepe, which produced tools and cores just for export. Considering the quantities involved in this distribution system, even if we cannot surmise the mechanism, we can certainly state that it was through a peaceful act with no involvement of stress.

In the future, if we can sort out and define cultural traits that can be traced in larger areas and their changes in time without getting lost in details, probably we can progress in developing a better understanding of this culture.

Supra-Regional Concepts II

Space and Perishables: Some Implications of an Expanded Near Eastern Neolithic

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Cyprus is a recent addition to discourses on early Neolithization in southwest Asia. The later 9th millennium cal BC dates, including AMS dates from domestic type seeds, and the character of the material culture from several sites present challenges to our understanding of extent and processes of Neolithization. The existence of such early sedentary food producers on the island was precluded by models which held that initial moves towards an agricultural way of life were confined to the Levantine corridor, hence the surprise with which the insular evidence was greeted in many quarters. In seeking for supra-regional concepts, we must now reckon that the Near Eastern region has just become more supra, and the challenge for concepts commensurately greater.

The recent discovery of this new evidence on Cyprus indicates our woeful ignorance of the real location of groups engaged in diverse trajectories within the early Neolithic. The nearest relevant sites with parallels to the Cypriot data are in the northern part of the “Levantine corridor”, 200 km distant across the coastal plains, the Jebel An-Nusariyah/Amanus, the Orontes Valley and the rolling

plains of Aleppo district, to say nothing of the additional 70-100 km sea crossing. In spite of the fact that that zone comprises quite disparate ecologies, Neolithic lifeways appear at opposite ends of the zone at similar times. Adoption by some groups of comparable socio-economic modes does not seem to have been constrained by physical boundaries. What are we to make of this?

It seems likely that many groups in that intervening heterogeneous tract, here referred to as Syro-Cilicia, were most likely engaged in Neolithization processes (*cf.* Qaramel, ‘Ain el-Kerkh). Given the different environments and available subsistence resources, adjustments would have been varied. And yet, the spectrum of plants and animals brought to Cyprus by at least the late 9th millennium points to a conscious preference for species that were widely domesticated now and later. In other words, there existed a widespread predisposition towards this spectrum, a unifying way of doing things (an agricultural cycle with attendant harvest feasts, an interest in certain tools types, territories, etc.), no doubt modified by local landscapes, resources and histories.

Van Andel and Runnels have mounted a robust argument that provides for dispersion of a Neolithic way of life inter-regionally in a manner that would result in discrete Neolithic centres within a landscape peopled by less visible hunter-gatherers and others. Intended to explain the spread of the Neolithic in Europe, it is a diffusionist model that may be regarded as partly consistent with the Cypriot evidence but that has not found favour on the mainland even though it might conceivably account for supra-regional characteristics. The reason for its unpopularity may lie in the halting, uncommitted adoption of agriculture in the Near East as seen, for example, in the variable occurrences of wild and domestic crop sequences on Euphrates sites. The bipolar division between hunter-gatherer and food producer that obtains in European reconstructions may be inappropriate to the Near East where more flexible strategies and a long tradition of (semi) sedentary complex hunter-gatherer blur the division.

And yet, Cauvin also propounded a diffusionist agenda that was similar insofar as it would in some cases have resulted in clusters of Neolithic groups initially stranded amidst societies with different subsistence economies. In these cases, he envisaged that (fissioned?) groups of agriculturists temporarily adopted mobile herding or hunting lifestyles (“episodes of nomadism”) before re-locating in a niche where they returned to sedentism and their previous farming existence. While flexible economic strategies are well attested ethnographically, it is instructive to see how this works in the case of Cyprus. In the 1994 French edition of *The Birth of the Gods and the Origins of Agriculture*, Cauvin proposed that Neolithic peoples arrived on the island as part of his big expansionary push from the Euphrates during the LPPNB. By the time of the 1997 edition, however, he found it difficult to accommodate some earlier dates for these groups

on Cyprus and was tempted to reject the dates. In the Postscript to the English translation of 2000, he allowed these dates because Halula had provided evidence of earlier domestic cattle which were necessary for migration to the island since cattle were associated with the earliest settlers. But the actual dates related to the Cypriot material are, if anything, earlier than the relevant dates at Halula, leaving aside the questionable assumption that translocated cattle had to be “domestic”. In fact, the ever-earlier Cypriot dates for a host of Neolithic indices prove to be too problematic for the very long-distance, salutatory jumps envisaged in these models, and they point to a multi-centric development of food production outside the corridor, as far away as Syro-Cilicia and Cyprus.

Even if we allow for this regional trajectory in the west, it remains the case that a highly purposeful transport of people, seed corn, animals and other goods such as obsidian did take place repeatedly during the 9th – early 8th millennium. Rather than treat this interaction between Cyprus and the mainland as a complete anomaly, we should consider whether it represents a pattern that existed more widely, but one that is difficult to trace in the mainland archaeological record. Thinking in these terms allows us to envisage a much greater movement of perishables, especially foodstuffs, new culinary fashions and the creation of consumers motivated to adopt appropriate techniques for local production. The choices were essentially cultural, although we cannot rule out other reasons for such decisions, but whether it was islanders proactively appropriating food production, mainlanders organising expeditions or, most likely, a combination of both, we now have clear evidence for the existence of substantial, organised movements of floral and faunal (not all food) resources, ones that may have played a significant role in widespread reciprocal exchanges and the dispersal of food production intensification.

Supra-Regional Concepts II

Supra-Regional Understanding of Near Eastern Neolithization: An Archaeozoological Perspective

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While the last decades have produced increasing evidence about the basic issues of timing, general regions involved and, eventually, of possible causes that triggered plant and animal domestication, one should be very cautious in using archaeofaunal data for a supra-regional understanding of Neolithic trajectories. Apart from the problem that most of the faunal materials at

hand neither have a precise absolute dating based on a series of C14-results nor strict stratigraphic allocations, major problems arise according to the compatibility of the datasets generated by archaeozoologists and the statements deduced, in particular when 1) discussing the status of domestication for particular species. Furthermore, 2) our knowledge about past ecosystems is simply not

detailed enough to allow a comprehensive understanding of former adaptive strategies. Beyond this, 3) trying to define trajectories on the basis of material culture is problematic when it comes to animals. Lastly, 4) “new” techniques, such as stable isotope or DNA-analysis, are *a priori* most useful, but they need to be applied to a much larger number of well-dated specimens from stratified contexts than can be offered today. The foregoing statements necessitate some comments:

1. Man-Animal-Relationships: Definitions and the Archaeofaunal Record

Four stages of development have to be considered here: 1) hunting, 2) cultural control of wild species, for example by keeping single animals to serve as walking larders, 3) the initial process of domestication, where humans take control of the reproduction of animals by isolating them from the wild population, a process which also includes (un)conscious selection, and finally 4) livestock husbandry. At least from a functional point of view, all this can be regarded as an evolutionary continuum involving increasing input of human energy per animal. Though domestication has been defined at many occasions, it will be difficult to give a definition of general value that accounts for the wide variation observed in different species and for different captive environments, yet specific enough to be meaningful in terms of the biological processes involved.

Taking into account the length of the gestation period in ungulates, their physiological requirements and complex feeding, reproductive and migratory behaviour, domestication of sheep, goat, pig and cattle must have been a lengthy process. For the moment, intra-specific variation in Late Quaternary ungulates and population dynamics in function of environmental change and/or stress induced by natural phenomena and anthropogenic activities are still poorly understood, complicating the interpretation of patterns, such as size decrease or earlier kill-off, observed in archaeofaunas that cover the transition from hunting to herding.

Actual archaeozoological research still suffers some methodological shortcomings. Except for bone dimensions, the procedures to record the different osteological parameters and to present these datasets have not been fully standardized, hampering comparative studies. In addition, when discussing intra- and inter-site comparisons, each assemblage is tacitly assumed to be derived from a single reproductive community which in fact is mostly not the case. Unfortunately, bone specimens, even from a single context, may be separated by years, if not by decades. Strictly spoken, then, biostatistics cannot but applied with caution, because the remains *sensu stricto* do not represent a population in a true biological sense.

In view of the incomplete knowledge of the biological and socio-cultural phenomena associated with animal domestication, the incompleteness in time and space of the archaeo(zoo)logical record, and the very nature of an archaeofaunal assemblage, it will be difficult to distinguish the subsequent stages of the domestication process and to define at which point along the continuum from hunting to husbandry a species can be considered domesticated. The multitude of terms coined by archaeozoologists to describe human inference with morphologically wild ungulates prior to a domestic status, *e.g.*, “cultural control”, “proto-élevage”, “incipient domestication”, “pre/pro/proto-domestication”, “wild ungulate management”, is a meaningful illustration of this problem.

2. Defining Past Ecosystems and Tracing Climatic Fluctuations Through Time and Space

Ecosystems are very complex, and even today biologists have difficulties to describe them comprehensively. Therefore, archaeofaunal remains, which from their nature are slaughter and consumption residues, selected and accumulated by humans, represent but a tiny fraction of the overall taxonomic diversity in the environment of a settlement. They can only provide a very rough appreciation of a past ecosystem in all its diversity. Problems also arise because of our lack of detailed knowledge about the feeding and behavioural ecologies of the founder species in their natural environment.

Large-scale climatic changes have been documented, but the results of these studies are not applicable on a smaller (infra-)regional scale. This is most unfortunate, because it could well be that minor (successive) climatic oscillations, by their effect upon vegetation cover and hence the availability of bioresources, are initially responsible for the development of the new adaptive strategies, exactly those strategies the archaeo(zoo)logists want to uncover.

Grassland ecosystems are of crucial importance for our understanding of the beginnings and spread of cereal exploitation and cultivation. The present-day occurrence of grasslands is controlled by climate, fire, biological interactions, in particular herbivores, and human activities. It is, however, not clear how and to what extent these various factors delimit the distributional patterns of modern grasslands, let alone in the past. However, if the “Neolithic Revolution” was linked to this type of ecosystem, as has been postulated repeatedly, a detailed record of the expansion and/or regression of grasslands and the cultural manifestations associated with this kind of habitat are essential when discussing trajectories. In this respect, it can be hypothesized that the domestication of plants and animals was initially triggered by a climatically induced expansion of grasslands.

3. The Inanimate *versus* the Animate

The presence of valuable goods, such as obsidian or high quality flint, may evidence exchange between geographically separated groups, either directly or through intermediaries. Apart from the logistics, the trade of such inanimate objects does not pose problems, nor will this be the case for example with marine molluscs that inhabit the Mediterranean Sea and which are recovered from several inland sites as is documented by their presence in PPN contexts of the Upper Euphrates.

To move or trade stock on the hoof over a considerable distance is a completely different matter. Not only need these to be nourished and watered, but also protected against predators and treated in case of diseases. If ambient temperatures and vegetation compare well

Fertile Crescent follows a similar (though chronologically later) north-south trajectory. As with sheep, diffusion of pigs may have been hampered by ecological constraints.

4. New Methods and Their Potential

Stable isotope- and ancient-DNA-analyses are among those techniques which since a short time are explored in archaeozoology. For the moment, these innovative approaches are still limited in their application to archaeofaunas that cover the transition from hunting-gathering to livestock herding. This is partly due to insufficient collagen preservation and the numerous technical problems, in particular of contamination, that go along with these complex analytical procedures.



Fig. 5 Eleni Asouti, Joris Peters, George Willcox, Trevor Watkins, Reinder Neef, and Marion Benz (photo: H.G.K.Gebel).

with the region of origin of the herd, risks of losses can probably be minimised. Moreover, because biomes often run parallel to the lines of latitude (except in coastal areas), to thrive animals in an east-west direction, *e.g.*, from the Upper Euphrates region along the southern flanks of the Anti-Taurus to the Mediterranean coast, will cause less problems than herding them in a north-south direction. An example of this is sheep. Likely domesticated in the natural upland habitat region of Wild sheep in the Anti-Taurus range, the species is essentially adapted to grazing in meadows and open woodland in the temperate mountains and foothills, environmental constraints hampering a distribution further south. When introducing the species in the Syrian arid steppe, sheep breeders had to select animals that could not only withstand higher daily temperatures, but were also able to cope with new kinds and types of vegetation. Given the amount of time that elapsed between the supposed beginnings of *Ovis* husbandry in the Anti-Taurus (*c.* 8,500 cal. BC) and the hitherto earliest evidence for domestic sheep in North Syria (7,900-7,800 cal. BC) and in the Southern Levant (after 7,500 cal. BC), it can be assumed that selection of appropriate breeding stock was not uncomplicated. The radiation of pig husbandry throughout the

Stable isotope analysis can provide information about the relative importance of plants *versus* animals in the diet of humans and animals in prehistory, about the local food web, changes over time in the diet of individuals in human or animal populations, feeding behaviour and food choice of wild *versus* domestic animals, seasonal movements of animals including transhumance, season of slaughtering in livestock, mean annual temperature of a species' environment (which can be used to reconstruct human hunting behaviour), and the place of origin of migratory individuals, be it animal or man.

Ancient-DNA-analysis is probably the most fascinating "new method" to be applied in the field of early plant and animal domestication. But what is known for the moment are the results obtained by studying DNA diversity and lineages of present-day domestic populations and/or breeds. Until now, these investigations mostly developed on the initiative of geneticists, archaeo-(zoo)logists being rarely involved, and this led to a number of erroneous claims about early domestication.

Though these new techniques could be powerful tools for tracing trajectories and supra-regional networks, it is still too early to estimate their future impact.

A Reconsideration of the PPN *koiné*: Cultural Diversity and Centralities

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At the close of the *Préhistoire du Levant II* conference in Lyon in 1988, there was a push to characterize the area from central Anatolia to the Sinai and northern Saudi Arabia as a *koiné* (cf. Rollefson 1989: 172). This concept stressed the similarities in this enormous area (Cauvin 1989: 177), but no attempts were made to explain what at the time was taken to be a “homogeneous culture area”. Certainly there were many similarities within this *koiné* territory, especially when compared to the region east of the Zagros and west of the Black Sea. But there were also many differences, and these distinctions continued to grow in number and degree as new research projects expanded in geographic scope after the Lyon conference ended.

In view of the huge area (ca. 1,500,000 km²) and geographic diversity, it is to be expected that cultural differences would emerge that reflect environmental variety in local landscapes. It is to be expected as well that the Neolithization processes would not have followed identical trajectories of development. The long process of what Flannery referred to as a “pre-adaptation” (Flannery 1971) to farming spanned more than a millennium and reached across a broad stretch of Levantine territory. It is widely held that the sudden and severe Younger Dryas event, representing the climatic *deus ex machina* that Flannery eschewed, may have triggered an intensification of plant collection that ultimately resulted in the creation of artificial cereal species.

For more than a century there has been speculation of where these processes first took place, and whether they may have had independent origins in several parts of the globe. It may not have been until the first series of debates between K. Kenyon and R. Braidwood that interest was drawn to a specific locality for the first emergence of farming communities in the Levant (e.g., Kenyon 1959: 9). Since then there have been, from time to time, continued claims for finding the earliest pinpointed evidence for this phenomenon; such exercises are unlikely to bear any meaningful fruit. Certainly, we agree with the view that (as regards Jarmo), “...[it] is *not* conceived of as *the* spot where the village -farming community level of existence came into being – we do not even believe that there ever was one single such spot...” (Braidwood 1958: 1426; emphasis is Braidwood's).

The world view held by the occupants of Late Epipaleolithic and very Early Neolithic Anatolia (cf. Rosenberg 1999; Hauptmann 1999; Schmidt 2003) does

not appear to be shared anywhere else in the Levant. But the same can be said for the world view of the Euphrates region (e.g., Stordeur 2000), and the lifeways in the southern Levant had their own particular characteristics (e.g., Bar-Yosef and Gopher 1997; Kuijt and Finlayson 2001).

The emergence of the Early PPNB period remains a point of contention of when and how quickly the new lithic technology spread throughout the northern Levant (cf. Abbès n.d.; Arimura n.d.; Schmidt 2003) and even if the phase occurred at all in the southern Levant (compare Kuijt and Goring-Morris 2002: 382 vs. Khalaily *et al.* n.d.).

Certainly by the Middle PPNB there are stark regional differences once again. The round-house traditions of early Beidha (Kirkbride 1967), Nahal Issaron (Goring-Morris and Gopher 1983), Ayn Abu Nukhayla (Henry *et al.* 2003), and Shaqarat Mazyad (Kaliszan *et al.* 2002) stand out in clear contrast with settled populations in the central and northern parts of the Levant. In the central part of the region the subsistence economy of the Galilee area of Israel includes no exploitation of goats despite the popularity of this species farther south and east. The central Levant stands apart from the far north and the far south by the modeled skull cult and the existence of “monumental” plaster statuary, and to the extent that it might demonstrate some level of social identity, the Jericho point is restricted to the southern half of the region.

With the transition to the Late PPNB changes in the sociocultural character of the southern Levant were particularly pronounced with the collapse of farming vil-



Fig. 6 Gary O. Rollefson and Mehmet Özdoğan (photo: F. Hole).

lages in and west of the Jordan Rift and the consequent emergence of the “mega-site” phenomenon on the Jordan Plateau and up into the northern Syria region. Once again, there are areas with pronounced internal similarities in architecture, as in southern Jordan (e.g., es-Sifiya, Basta, el-Hemmeh), that contrast with commonalities farther north at 'Ain Ghazal and Wadi Shu'eib. The occurrence of a two-tiered ritual architecture at 'Ain Ghazal sets this community apart, although it is possible that sampling problems in the other mega-sites are playing a role in our recovery of similar structures.

The central and southern Levant witnessed another major disruption at the end of the LPPNB, with what appears to be a widespread decrease in population of the mega-sites if not outright abandonment. The central Levant underwent a cultural transformation with the loss of the naviform blade technology, the end of lime plaster manufacture, and a return to single-family dwellings of small size. The appearance of PPNC “corridor buildings” at 'Ain Ghazal suggests that social groups included farmers who lived in villages year-round while another segment may have taken herds of sheep and goats away from farming settlements and fields for months at a time, probably during the rainy season. Permanent settlements returned, albeit in small numbers, in the Jordan Valley (Tell 'Ali; Garfinkel 1994), the Galilee (Hagoshrim; Khalaily *et al.* n.d.), and the coast near Mt. Carmel (Athlit Yam; Galili *et al.* 2002). The situation in the far south is not as clear: it has been claimed that there is a PPNC phase of occupation at 'Ayn Jammam (Waheeb and Fino 1997: 215), but there have been no published accounts of the reasons for ascribing phases of occupation to the PPNC.

This catalog of distinctions across the Levant and across the span of the Late Epipaleolithic and Aceramic Neolithic is based on a number of archaeological dimensions, including lithic and other technologies, architectural features, subsistence economy, settlement patterns, elements of ritual and religion, and observable social organization to some degree. Some of these aspects are more sensitive to social identities, especially religion and social structure. What we don't know for certain is the degree of linguistic variability across this part of southwestern Asia and what limits verbal communication may have faced from one area to another.

But I think there is enough information to suggest that *koiné* proposed 15 years ago is perhaps too “neat”, and that the differences among the several areas are just as important to understand as the similarities. Some of the differences, of course, might be due to variation in climatic and resource factors, but it is just as likely that the regionalism shown from the northern to the central to southern Levant reflects different sources of inspiration and development of how things should be done. Certainly there is little support, as Braidwood claimed, that a single “spot” existed from which Neolithization processes emanated.

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Supra-Regional Concepts II

Comment on the Supra-Regional Concept Issue

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Within the recent past, Ofer Bar-Yosef and others have proposed the existence of a wide-ranging PPNB “interaction sphere.” It is now apparent, based on new discoveries, that a more comprehensive framework be developed to account for both the cultural similarities but regional distinctions that make up the PPNB. Therefore, I welcome discussion on a “Supra-Regional Concept.”

In particular, new research on Cyprus has now documented a PPNB period, the Cypro-PPNB, that is contemporary with and shows some similarities to the mainland. Previously, the “traditional” Khirokitia Aceramic

Neolithic of Cyprus demonstrated virtually no similarities to the mainland. It is now clear, however, that Cyprus was part of a broader Neolithic world, and that there was considerable communication between the island and the mainland. Therefore, we need new ways of viewing this complex interaction, and the idea of a “Supra-Regional” model may go a long way in this direction.

I caution, however, that we be careful in not establishing simply new semantic terms that do little towards offering an explanation of the complex Neolithic world that is now coming into slightly clearer focus.

New Insights and Concepts: Two Themes of the Neolithic in Syria and South-East Anatolia

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Theme 1: South-East Anatolia and North-East Syria During PPNA Horizon and Early PPNB¹

Cultural unity within SE Anatolia and NE Syria between 9,500 and 8,200 cal BC

The latest finds show that the sites in this area have a lot in common. The symbolic world is the same from the Syrian Middle Euphrates to SE Anatolia. For example the animals represented at Jerf el Ahmar, Tell 'Abr or Göbekli (etc) are the same: snakes, birds of pray, bulls, felines (panthers), foxes.

Of course, a more detailed observation concerning each group of sites, even each site, shows that each group, even each site, has its own cultural personality. For example, the influence of Iraqi traditions can be detected in the Anatolian sites but not in the Syrian sites.

This is a very general rule, and we can still observe this today when we consider the habits from one village to another in the same country.

Many characters typical of this culture appear earlier in the southern part of the area

If we consider the sites from Mureybet to Göbekli and Çayönü, for example, it appears that some of the characters which constitute this cultural entity appeared very early even Khiamian in the South. One can cite, for example, the double-pointed needles and handles made on deer antlers. Thus if this is the case, we have diffusion to the northern part (Anatolia) from the south.

This proposition must be verified by the C14 dates (see Tableaux 1 and 2). It seems that the dates obtained for the PPNA period in the north, and also the cultural characteristics, could show that we actually only have "final PPNA" from Dja'de el Mughara to Çayönü, including Tell 'Abr and Göbekli. For us, all these sites belong to what we call the "Transition period" between PPNA and PPNB.

PPNB originated within in the totality of this area

At the end of PPNA and during Early PPNB, we find the strongest signs of a common culture covering all the area from the Syrian Middle Euphrates to SE Anatolia. In most of the sites we can clearly see a continuous evolution between the northern PPNA (Mureybetian) and

the early PPNB, with a *Transition phase* that has been identified at Jerf el Ahmar. This phase could be recognisable at Tell 'Abr and Göbekli.

This evolution can be seen particularly well when we examine the communal architecture and the symbolic representations. The communal buildings become more specialised and they appear to be more and more dedicated to symbolic or ritual activities. This becomes more and more spectacular from the earlier to later periods, but also from south to north. The "megalithic" expression is found only in Anatolia.

The major themes of the symbolic system are the same in NE Syria and SE Anatolia, but they are treated in a more and more grandiose style from the earlier to later periods, but also from south to north. There are some changes between Jerf el Ahmar and Tell 'Abr, and also from Tell 'Abr and Göbekli.

Other traits concerning the material culture show that they have many traditions in common.

Proposition

It appears that between the two regions which are today separated by a border, there was not just the exchange of material goods but that there was a unique culture which we can define at the regional level and which is identifiable during the PPNA and the early PPNB. This does not exclude the fact that some regional differences do occur. It remains for us to explain the origins of this cul-



Fig. 7 George Willcox, Danielle Stordeur, and Trevor Watkins (photo: F. Hole).

tural unity and what it owes to the imagination of the populations of each zone. Finally, and it gives me great pleasure to speculate, that these populations which shared the same symbolic world almost certainly spoke the same language.

Theme 2: The “Central Levant”. Should We Keep it as a Concept?

Considering the new data from Tell Aswad it appears that perhaps we should remove the concept of “Central Levant”. On the one hand, as we have seen, there is the Northern Levant, which shows a real cultural coherence, especially around the Euphrates valley (see Proposition 1). On the other, the Southern Levant also has typical cultural patterns. Between the two we have an empty space. Let us examine the problem period by period.

Period 1 – Natufian (12,000-10,000 Cal BC, 12,200-10,200 BP)

For this period there are too few sites in the central and southern part of Syria to make any comment.

Period 2 – The PPNA Horizon. (9,500-8,700 Cal BC, 10,000-9,500 BP)

“Mureybetian” is typical of the northern Levant and may characterise northern Syria and SE Anatolia (see Proposition 1). In the Southern Levant, the Sultanian is clearly different.

After three campaigns at Tell Aswad, we have not found any PPNA occupation. This leads us to doubt the very existence of the so-called Aswadian culture, defined and represented only at one single site, that of Tell Aswad.

Period 3 – The Early PPNB horizon (8,700-8,200 Cal BC, 9,500-9,200 BP)

This period may be represented at Tell Aswad, but we still do not have any clear view of its cultural entity but it does not appear to be a special culture, typical of the Central Levant. If we have this period at the base of Tell Aswad, it does not resemble the Early PPNB of the northern area. However it does have clear affinities with the south.

Period 4 – Middle PPNB (8,200-7,500 cal BC; 9,200-8,500 BP) and Late PPNB (7,500-7,000 cal BC; 8,500-8,000 BP)

This period is well represented at the site, but rather than defining a special cultural coloration for the Central Levant, the finds from Tell Aswad have characters in common with finds from sites in the Southern Levant, such as Beidha and ‘Ain Ghazal, which of course also have their own individuality.

Proposition

There is no hard evidence which allows us to justify the concept of a “Central Levant” entity. Thus the region of Damascus appears more like the northern limit of the southern Levant.

Note

¹ These propositions have been partly published in an article with F. Abbès (Stordeur and Abbès 2002).

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2002 Du PPNA au PPNB : mise en lumière d'une phase de transition à Jerf el Ahmar (Syrie). *Bulletin de la Société Préhistorique Française* 99 (3): 563-595.

Tableau 1: Datations de Jerf el Ahmar. *

Age 14 c BP et n° échantillon	Intervalle av JC	Niveau	Contexte
LY 10647 9395 +/-55	8799-8482	moins I Est « transition »	EA 53 bâtiment collectif
LY 10649 9445 +/-75	9119-8484	II West	EA 30 bâtiment collectif
LY 10648 9855 +/-70	9595-9219	III Est	EA 47 maison aux bucranes
LY 10651 9965 +/-55	9689-9278	V Est	soubassement maison ronde

* Les dates dans ce tableau et le suivant ont été sélectionnées en ne retenant que celles dont le coefficient d'erreur est inférieur à 100 et en privilégiant les résultats les plus précis. Les datations de Mureybet font exception, toutes ont un coefficient d'erreur dépassant 100.

Tableau 2. Datations d'autres sites PPNA et PPNB ancien de Syrie du nord et d'Anatolie.

Site	Age 14 c BP et n° échantillon	Intervalle av JC	Horizon	Contexte
Mureybet	Monaco 734 9950 +/- 150	10105-9198	PPNA	III A bâtiment collectif 47
Mureybet	Monaco 616 9675 +/- 110	9283-8740	PPNA	III A maison 22
Hallan Çemi	B analyt 55049 10050 +/- 80	9986-9284	PPNA	Main excavation area
Hallan Çemi	B analyt 55050 9840 +/- 50	9346-9225	PPNA	Main excavation area
Çayönü	GrN 4458 9520 +/- 100	9219-8557	PPNA	Round building
Çayönü	GrN 10359 9050 +/- 40	8289-8233	PPNA	Round building phase
Çayönü	GrN 16462 9040 +/- 70	8409-7975	PPNB ancien	Grill building phase
Nevalı Çori	Hd 16783 769 9212 +/- 76	8340-8085	PPNB ancien	Level I/II
Dja'de	LY 5822 9160 +/- 75	8356-8028	PPNB ancien	BY 4 D5
Dja'de	LY 8842 9370 +/- 75	8794-8196	PPNB ancien	Brond XY3 G 3 base
Mureybet	Monaco 862 9130 +/- 150	8723-7944	PPNB ancien	IV A

Supra-Regional Concepts II

Last Gatherers/First Cultivators in the Near East: Regional and Supra-Regional Developments

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The Near East covers a region with high diversity in climate and vegetation, offering an immense choice of habitats to both hunter/gatherers and farmers. Most Natufian sites are situated either between the mild Mediterranean region and the continental steppe, or between the high Anatolian plateau and the steppes. These margins would have shifted with climatic change but only on a sub-regional level. The Younger Dryas, which lasted from 10,800 to 9,800 BC cal., would theoretically have caused an expansion of the steppe region, but the effect of climate change may not have been the same for each region within the Near East. Unfortunately, the data for climate and vegetation change at the sub-regional level is

extremely limited. Indeed, environmental evidence for the so-called harsh conditions, which according to some specialists led to a reduction in the availability of cereals during the Younger Dryas, is disputed by others. Global climate data from ice cores indicate that the Younger Dryas was climatically very unstable. I have argued that these climatic conditions would make farming a risky form of subsistence, especially in marginal zones. Thus it seems highly significant that on a supra-regional level the emergence of communities with a developed and sustainable cultivation economy do not appear until the advent of stable climatic conditions after the Younger Dryas.

Archaeobotanical data from charred plant remains recovered by flotation from some twenty sites across the Near East clearly show that for each cereal there was at least one independent domestication event. These regional domestication events coincide with the regional distribution of each wild cereal species. The distribution in the past was similar to that seen today, and is a result of the ecological requirements of each species. In the southern Levant region only barley and emmer occur, so it is not surprising to find evidence that they were domesticated there, while rye and einkorn, absent in the south, were domesticated in the north. Barley and emmer occur in both areas, and indeed may have been domesticated more than once. These conclusions are supported by evidence from DNA analyses of modern populations and by the archaeobotanical data. The latter also indicate that on a more sub-regional basis there are considerable differences in the archaeobotanical assemblages between individual sites, for example during the 10th millennium within the region of the Euphrates.

Often ignored is the evidence that during the 10th millennium a number of edible plants, including cereals,

were transported from the region of their original habitats into regions where they could not have appeared naturally. While Cyprus is the best example of such a region, we see the same phenomenon on the mainland.

Finally, for each region except Cyprus there is no evidence for an abrupt adoption of farming, which would have been the case had agriculture disseminated from one core region to be introduced in outlying areas. Instead it appears that at a regional level sedentary village dwellers took into cultivation local populations which were subsequently domesticated, but this process took place gradually over a long period and independently in each region.

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5th Workshop on PPN Chipped Stone Industries 5ème Colloque international sur les industries lithiques du Néolithique pré-céramique du Proche-Orient

Note: On the following pages we publish several pieces by various authors which deal with the results of the 5th Workshop on PPN Chipped Lithics, held in Fréjus from 1-5 March, 2004. This report is incomplete with respect

to the session reports requested from the chairpersons. The programme and structure of the workshop was already published in Neo-Lithics 2/03, pp. 39-40.

Brief Report on the 5th PPN Chipped Lithics Workshop, Fréjus, France (1-5 March 2004)

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More than 60 registrants attended the 5th International Workshop on PPN Chipped Stone Industries in the Near East that was held in the Villa Clythia in the town of Fréjus in southern France. The formal meetings, which ran the full day and into the evenings, were organized thematically in half-day sessions. In addition there were poster presentations and demonstrations of blade technologies, using specimens derived from excavations. Both the posters and the hands-on lithic presentations generated considerable interest and discussion. Themes that were addressed included: Formal typology, Experiments, Transitional periods, Variability within and between sites, Lithic caches, Culture areas, and Exchange and cultural Interaction. In all there were 41 presentations. Rather than discuss these individually, I would like to reflect on issues that cross-cut the themes. Among these issues are: origins of technology; classification/typology; the nature

and implications of variability; sources and distribution of materials; the chaîne opératoire; site taphonomy; chronology; transitions; and territory.

It was remarked several times that the Workshop has gotten away from a concern with classification at a time when there is a need to bring greater systematic order to analysis and publication. The most striking example of this concerns point types and their possible value in distinguishing sub-regions and periods. Questions were raised whether some points might not be perforators and vice versa. One way to resolve this is through use-wear analyses and experiments. It was apparent that the “boundaries” between some point types are rather fuzzy and that in some instances may reflect local raw material and idiosyncratic flaking behavior rather than anything more substantial. Excavators tend to focus on minute variability, while those who take a broader



Fig. 1 Didier Binder, one of the organizers of the Fréjus Workshop (photo: H.G.K. Gebel).



Fig. 2 Lunch of the PPN Chipped Lithics Family (photo: H.G.K. Gebel).

overview, prefer to lump, practices that sometimes cloud attempts at comparison.

Classification has become a very detailed study, yet it is based on the biological model where a specimen ages but does not change during its life. Lithics, on the other hand, are carved from raw rock, used, sharpened, re-used, broken, repaired, discarded and so on. What we find archaeologically are examples of one or more of these steps in the life of a tool, so that formal variability may be so great as to preclude strict classification. Adding to this problem is that lithics are made from diverse sources of raw material, some better than others, that have an influence on the size, shape, function and durability of the implement. The big question, then is, “what can we expect the lithics to tell us?” From the perspective of the Workshop the answer is that they can tell us about a site's age and “cultural” affiliation.

A recurrent theme was the necessity to consider the whole operational sequence from the acquisition of raw material to the making of the tool, and finally its discard and taphonomy. The contrast was made between static typology and dynamic process, as exemplified by the reduction sequence. What I found striking was the amount of intrasite and intersite variability in the reduction of lithics and the resultant tool types, at least as expressed in statistical tables. That is, the same types are found in widely varying numbers and frequency in different sites. While these data were presented, the question of what they mean for our understanding of technological processes, or the ways that sites and periods can be characterized and compared, were not explicitly addressed. In short, what do we gain by studying the *chaîne opératoire*?

There were repeated pleas for developing finer-grained chronology. The use of the time-worn terms PPNA and PPNB with its subdivisions, over a territory as large as half the Near East, seems excessively conservative when subdivisions, based on an array of artifacts, can be demonstrated. Chronology also implies the use of finer stratigraphic distinctions, as the recent separation of the

Natufian from the Geometric Kebaran well illustrates. No less problematic are the transitions from Natufian to PPNA (Khiamian), or from PPNA to PPNB and its subdivisions. When types are either present or absent, it is easy to separate layers and periods, but in sites that are truly transitional it is not expected that all tangible artifacts will change simultaneously.

Underlying many of the reports and discussions about them were the questions of context and association, not only of where particular artifacts were found, but what processes led to their being where they were found. Were tools found on floors left there by the occupants of the house or were they included in some post-occupation debris that was tossed in? In some papers there was discussion of how one can use refitting as a means to answering questions of context.

While the western side of the Near East is relatively well-known, the eastern arm has seen relatively little archaeological activity in the past 25 years, yet it has some of the classic Neolithic sites. It has long been acknowledged that there are differences between the two regions, but these have only recently been systematically highlighted. For example, the origin of conical microblade core technology and the associated assemblages is thought to be in the Far East. Correspondingly, the origin of the naviform blade technology is in the northern Levant, thus neatly defining two basic technological traditions. Stefan Kozłowski, in collaboration with Olivier Aurenche, will soon publish a book detailing sub-regions that can be defined on the basis of different types of lithic artifacts. This work reported on at the Workshop, depends on the use of comparable classifications of material and synthesis of information for the entire Near East. The focus of this book is boundaries, well illustrated by the distribution of Neolithic lithics, which have been maintained throughout history. With boundaries we must also consider corridors through which material, ideas and people moved to create a vast interaction sphere.



Fig. 3 No leisure without discussion of lithics (photo: F. Hole).



Fig. 4 Colleagues working in Jordan (photo: F. Hole).

It has become customary to seek sources of the raw materials used in sites, from obsidian to flint, green stone, orthoquartzite, basalt, etc. The ways these materials were used and their proportions are often revealing and indicate that some sites were in the path of distribution and others may have been isolated. It is also important to learn the form in which material arrived – was it raw, prepared or finished? Knowing the sources allows us to track routes and perhaps begin to understand why material was distributed as it was.

The symbolic implications of certain lithics became a topic of discussion in the session on caches. Were the caches placed deliberately, were they stored goods, were they meant to be drawn on regularly, or were they meant to be sealed from sight and use forever? While interpretation is always somewhat suspect, discussion made clear that context and association were critical to any interpretation.

The Villa Clythia was admirably furnished for the Workshop. With dormitory-style rooms, a bar, dining hall, and conference rooms, it has all of the necessities for a successful conference. The fact that the Workshop was held entirely within the Villa meant that meetings, discussions and conversations could be held continuously from breakfast through bed time.

As these Workshops have become larger and more complex, there is a correspondingly great burden on those who make the local arrangements. We owe a debt of gratitude to Laurence Astruc, Didier Binder, and François Briois who organized the sessions, arranged local transportation and provided us with a Workshop book containing the program, abstracts of papers and addresses of the participants. This prepared material was most welcome and most unusual for a conference.

Fréjus Workshop

Discussant Report: Middle and Late PPNB Lithic Variability

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After each of the six presentations relevant to this session, deliberations moved on to specific questions, and the final discussion could be oriented towards more general topics. Progressing from one paper to the next, one of the main problems that emerged was that as we study material from one site or a region, there is a tendency to overlook the fact that we should be more diligent in working towards methods that are suitable for the larger community of Neolithic researchers so that colleagues

can compare their results with our own. Clearly, “comparisons” are often based on material that is not comparable.

Two immediate questions arise:

- 1) What are the problems about the character, size, and representativeness of the studied samples? and
- 2) How can we resolve the problems of terminology and methodology?



Fig. 5. Colleagues in front of screens (photo: F. Hole).



Fig. 6 Part of the Israeli group with F. Hole (photo provided by F. Hole).

No excavation, no analysis is exhaustive, and we are often unable to predict the cultural and statistical *validity of the samples* we study. However, if we want to compare material at a more reliable level than merely presence/absence of attributes or types, then the elements in 1) above are absolutely necessary. Simply providing percentages (or “relative frequencies,” sometimes to one or two decimal places!) when the sample is too small is pointless. (What is the meaning of “11.62%” in a group of 43 specimens, for example?). We cannot adopt the same strategy for interpreting a very small sample as the one for a huge series from good archaeological contexts. It appears that too often we forget such basic necessary conditions.

As to the question of *terminology*, often the discussion founders because we don’t speak the same language, although this is not simply because of obvious differences in French vs. English vs. German lexicons, but because of terminology itself. As Didier Binder noted, it is a “ritual subject.” One of the main objectives of the first PPN workshop in Berlin in 1993 focused on terminology, an extension of sorts of the UISPP Congress in Nice in 1976, when a special colloquium was held concerning “Terminology of the Prehistory of the Near East” (although admittedly this conference principally dealt with the Paleolithic). Have we progressed since 1976? Since 1993? I am not sure, and we continue to “compare” our materials, but we are not always speaking of the same things. This problem also concerns technology as well as typology, and only a few examples can be cited from the workshop at Fréjus:

- 1) What is a Helwan point? Is it only an arrowhead with a tang and a pair of notches? Does it have chrono-cultural significance or can the term be used for all periods? Can a Jericho point with lateral notches be called Helwan if we don’t consider the character of the blank (bladelet? blade? flake?).



Fig. 7 Discussion of original material in the evenings (photo: F. Hole)

- 2) Are “ridge blades” with unidirectional negatives or removals the same as “lateral blades” (*lames débordantes*), whose place in the *chaîne opératoire* is absolutely different than classical “ridge blades” (or “crested blades”)?
- 3) Do we all have the same understanding of the terms “primary production” and “secondary production”? Certainly not when we see some *lames de plein débitage* being called “secondary production”!
- 4) Simultaneous with the misuse of terms of long-standing acceptance, we observe the arrival of more and more new terms, new “types” of arrowheads that are possibly present in only one stratigraphic level of a single site. Everyone would like to give the name of his/her site to a particular tool, but this simply increases the terminological and typological confusion.

Surely there is no clear and easy solution to this problem of terminology, but a first solution is to provide as many artifact drawings as possible.

The last problem concerns *non-formal tools*. Most of our attention has focused on “Hollywood tools,” mainly arrowheads, the group that receives the major proportion of new site-oriented definitions. But non-formal tools are the more numerous, and they often continue to be neglected. Certainly they have a less “cultural charge” than Hollywood tools, but their ubiquity is testimony that they can give much information about lifeways, activities, and the skills involved. To deal with these problems, do we have any techniques besides those to develop an integrated approach and to study the technology of their manufacture and use-wear analysis and interpretation?

These points of discussion are “alarming spectres” without any definitive answers, but to avoid them (or even to minimise them) can only add to the confusion that already exists.



Fig. 8 Scene from the closing session (photo: H.G.K. Gebel).

Chairperson Report: Caches

Frank Hole

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Five oral presentations and two posters comprised this session that dealt with unusual occurrences of lithic clusters.

Hamoudi Khalaily showed a naviform blade cache from the site of Motza. This consisted of 58 flint blades that had probably been in a box or sack and then buried under a thick plaster floor.

Omri Barzilai discussed a number of blade caches in the southern Levant, including those from Nahal Issaron and Kfar HaHoresh. The common element in these was the presence of large numbers of blades in distinct clusters. In one instance the blades occurred next to a skull cache.

Laurence Astruc discussed a cluster of obsidian blades at Sabi Abyad II, where a cache of some 49 large blades and segments were stored after manufacture and subsequently not used. The obsidian came from Bingol A-Nemrut Dag.

François Briois shifted our attention to Cyprus where several occurrences of blades were uncovered at Shillourokambos. Here it was not the quantity of blades in each cache but their clustering and in some cases their association with burials that distinguished these as caches.

Tristan Carter reported on the subfloor caches of obsidian at Çatalhöyük in a location that featured transformative processes. Carter maintains that raw material was interred in the hearth area, perhaps to be transformed through further reduction at a later time.

Jesse Karnes' poster described a cache of 82 flint blades found under a house floor in 'Ain Ghazal.

Angela Davidzon' poster showed a refitted core from Kfar HaHoresh.

These presentations generated a lively discussion ranging from sampling and recovery methods during excavation, to taphonomy of the site and its contexts, to the symbolism implied by certain caches. It was recognized that there are many different ways and motives that might have resulted in caches. In some instances, finished blades may have been recently secured and were being stored for future use or trade. In others, a cache might have represented raw material that was being drawn upon and further transformed as need arose. In still others they may have been buried so as to take them out of use. Or they may have been interred as the personal effects of the deceased. Finally, caches might have resulted from an artisan putting down a handful of blades while he or she attended to another task, and then forgetting to retrieve them. The potential symbolic implications are less easy to determine and, as Carter emphasized, depend on many lines of evidence and context. With such a rich set of interpretive possibilities it is incumbent on archaeologists to carefully record as much of the contextual information as possible, both of the lithics themselves and of their associations within the site.

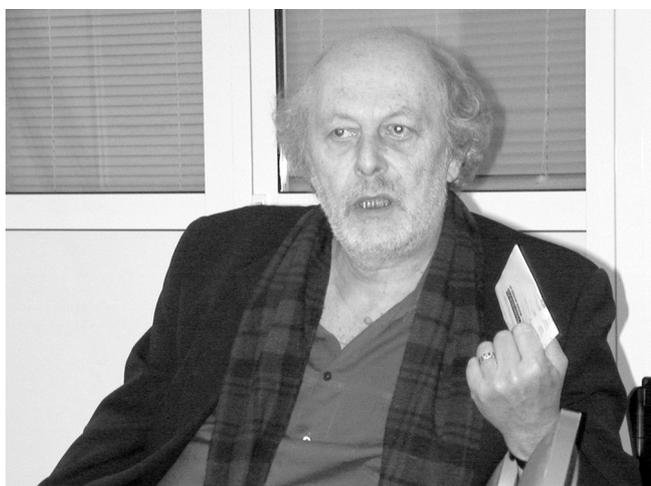


Fig. 9 Stefan Kozłowski at the closing session (photo: H.G.K. Gebel).



Fig. 10 Discussing replicative demonstrations on the last day of the gathering (photo: H.G.K. Gebel).

Conclusions: La diversité des systèmes techniques des communautés du Néolithique pré-céramique: vers la caractérisation des comportements sociaux

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A la lecture du titre de ce 5ème Workshop on a pu apprécier l'évolution, en une dizaine d'années seulement (1993 à Berlin) des études portant sur les industries lithiques.

1°) Tout d'abord, on peut constater la quantité de nouveaux sites découverts sur des territoires peu explorés auparavant, comme par exemple en Turquie. Cet élargissement a montré l'importance des influences multiples, d'un point de vue quantitatif et qualitatif. Cette réalité démographique a aussi permis de vérifier ou de tester des hypothèses longtemps confinées aux mêmes territoires.

2°) Concernant l'étude des industries lithiques du PPN, la relève par une nouvelle génération ainsi que l'évolution des méthodes d'exploitation des sites et de leur matériel sont considérables. Les résultats présentés lors de cette session sur la mise en œuvre de l'étude des systèmes de production ont déjà montré qu'il était possible de dépasser les descriptions et les comparaisons pour aborder l'histoire de ces sociétés.

3°) Un autre point concerne la notion de territoires et de frontières au Néolithique: je crois qu'il faut être très prudent et tenir compte de la géopolitique dans cette région. En effet, paradoxalement, s'il est si peu question de grandes régions comme l'Iran, l'Iraq, on peut rap-

pelez que c'est au début des années soixante que fut lancé le vaste projet dirigé par Braidwood et son équipe, d'une prospection et d'une étude le long du Zagros et du Taurus afin d'appréhender les débuts de la néolithisation (Hole *et al.* 1969; Hole 1983).

Ainsi, la recherche s'appuie sur de nouveaux territoires avec de nouveaux chercheurs passionnés qui rendent un bel hommage à la persévérance des "anciens" ayant œuvré pour développer et défendre leurs méthodes. Souhaitons alors que de jeunes chercheurs de ces pays dans lesquels nous travaillons tous, viennent nous rejoindre le plus rapidement possible.

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1969 *Prehistory and human ecology of the Deh Luran plain.* Memoirs of the Museum of Anthropology. Ann Arbor: University of Michigan.
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1983 The Jarmo chipped stone. In L.S. Braidwood et al. (eds.), *Prehistoric Archaeology Along the Zagros Flanks: 233-288.* Oriental Institute, University of Chicago (O.I.P., vol. 105).

The PPN Chipped Stone Dictionary: An Old Idea of a Joint On-line Project by the PPN Chipped Lithics Workshops (presented at the closing session)

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Note

The proposal goes back to discussions and suggestions dating between 1993 and c. 1998, when the topic was touched in the final meeting discussions of Berlin and Warsaw and the opening session at Venice, as well as during the meetings of some of the working groups existing in this period.

The Notion and the Goal

discussed was to create a flexible medium of terminological understanding and a future framework of definitions helping to ease the communication, cooperation and comparability between the chipped lithic research traditions. A steadily growing dictionary structured according to modules (prepared in rather independent inter-workshop working groups) was found to be a suitable enterprise to achieve this.

This original idea of working groups preparing the modules considered the following sections or modules of the dictionary:

- 1) Procurement / Raw Materials
- 2) Primary Production / Technology
- 3) Secondary Production / Formal Tools
- 4) Secondary Production / Non-Formal Tools

In addition, the following sections were recognized as necessary:

- 5) Definitions of Features / Findings and Concepts (e.g., “cache”, “specialization”, “craft”)
- 6) Field Record Methods / Contextual Observation Standards
- 7) Common Drawing Standards
- 8) Standards of Statistical and Other Analyses
- 9) Bibliographic References / Index

To various extents, the inter-workshop working groups operated between 1994 and 1996-7 and delivered reports (cf. the early issues of *Neo-Lithics*).



Fig. 11 Participants of the PPN5 Workshop on the staircases of Villa Clythia, Fréjus (photo by Ciler Altınbilek).

Already by 1994, within the *ex oriente / Neo-Lithics* environments the idea came up to promote the goals by establishing a generally accessible on-line dictionary, which steadily would grow by entries delivered from all members of the PPN Chipped Lithics Family.

The work on the dictionary was considered by some as even more important for the workshops' success than the triennial presentations.

The Structure

of the dictionary had been planned by modules or sections (see above), in which also the competing definitions and interpretative frameworks would be clarified. Lexical entries, *e.g.*, “cache”, “workshop”, “midden” etc. would be presented as well as the mere “term” definitions, *e.g.*, “spall”, “primary crest blade” etc. Especially under the terms the various definitions should be entered, listed as meanings 1, 2, 3, 4, etc. as in any other dictionary. Definitions with redundant elements would be eliminated / edited during the triennial meetings, while contradicting understandings would become obvious and would trigger the necessary discussions during our main meetings. Definitions that refer to local, temporary etc. features would be listed and would show the special meaning a term can have in these contexts. Controversial entries would be marked as controversial and remain so as long as they are discussed in the on-line dictionary.

The language of entries could be English or French, but there is an obligation to furnish these entries with the equivalent terms of at least four other languages

(English / French, Arabic, German, Hebrew, Italian, Spanish, Turkish). Illustrative elements should accompany the entries made.

It appeared necessary that the different approaches made by the various schools / traditions would be presented together in the dictionary (*e.g.*, what does “cresting” mean in its technological understanding by Abbès, Inizan/Tixier, Wilke/Quintero).

The Organization

of the (on-line) dictionary would be carried out by a dictionary administrator or managing editor (or a group of), who should be a chipped lithic expert and remains enthusiastic for some 5-6 years. The person channels the entries into the appropriate sections of the dictionary, and has a formal influence only. However, she/he can approach colleagues to provide definitions or other type of entries whenever missing entries are identified. The executive editor(s) also should encourage entries of competing understanding, in order to promote clarity of problems and decision making.

The Perspectives

were to have after some two workshop intervals an integrative and useful instrument of communication, reference and teaching, which could remain an ever-growing on-line source or is published as a book from time to time when a new edition appears appropriate.

Fréjus Workshop

Towards the 6th Workshop on PPN Chipped Stone Industries, 2007, Irbid, Jordan

At the closing session of the Workshop in Fréjus Didier Binder read a letter of invitation to the audience, received from Ziad al-Sa'ad, Dean of the Faculty of Archaeology and Anthropology at Yarmouk University. In his invitation, Dr. Ziad invited – also on behalf of the president of Yarmouk University – the participants to hold their next meeting in Irbid, Jordan. This invitation was happily welcomed by the participants of the 5th Workshop, especially in the light of the important chance this meeting place offers: to see the original material stored at Yarmouk University (*e.g.* Basta, 'Ain Ghazal) and to visit Neolithic sites and excavations in Jordan.

The participants agreed upon the following suggestions to be observed in the preparations for the Workshop in Irbid:

- 1) More posters should be presented, less paper presentations should be accepted. Paper presentations would need to have a reporting person.
- 2) More space should be given to hands-on and data base negotiations (brought material).
- 3) Time should be reserved to enable participants to examine collections stored at Yarmouk University and ACOR.
- 4) Field trips to 'Ain Ghazal, Basta, Ba'ja, Ghwair, the Fidan sites, are kindly asked to be organized by the hosts at Yarmouk University.

Hans Georg K. Gebel

Peltenburg, Edgar (ed.)

2003 (now available) *The Colonisation and Settlement of Cyprus: Investigations at Kissonerga-Mylouthkia, 1976-1996. (Lemba Archaeological Project, Cyprus III.1)*. Studies in Mediterranean Archaeology 70:4. Sävedalen: Åströms Förlag.

The first definitive account of one of the recently discovered Cypro-PPNB sites that have significantly altered our understanding of the aceramic Neolithic of Cyprus. Features include detailed discussion of the very early wells and alternative scenarios for the emergence of the Neolithic on the island. Part 2 deals with the Early Chalcolithic settlement in the context of debates about occupational continuity and abandonment episodes of the island.

Peltenburg, Edgar and Wasse, Alexander (eds.)

2004 *Neolithic Revolution: New perspectives on southwest Asia in light of recent discoveries on Cyprus*. Levant Supplementary Series 1. Oxford: Oxbow.

Until recently, Cyprus was excluded from debates about formative junctures in the epi-Palaeolithic and early Neolithic of southwest Asia because human settlement was believed to have existed there only several millennia after these periods. Striking recent discoveries from the island have overturned this situation and they prompt fresh assessments of current narratives for the Neolithic of the Near East. In September 2001, a group of scholars gathered together in the western village of Dhrousha on Cyprus to evaluate this new insular evidence. The papers presented here comprise the first concerted attempt to explore what these discoveries mean for our understanding of some of the earliest stages of the development of agricultural communities and the dispersal of a Neolithic way of life.

Eissenstat, Çiğdem Atakuman

Ritualization of Settlement: Conditioning Factors of Spatial Congruity and Temporal Continuity During the Late Neolithic of Southeastern Anatolia.

Doctoral dissertation, University of California, Los Angeles, 2004 (Professor Elizabeth F. Carter, Chair)

Abstract

The primary aim of this dissertation is to investigate the economic and social conditions effecting spatial congruity and temporal continuity of settlement sites in the 6th millennium cal BC landscape of Kahramanmarash,

southeastern Turkey. At a different scale, the dissertation also explores an alternative framework to approach the prehistoric change in the northern sectors of the Fertile Crescent during the time period under study. To achieve this goal, the first phase of the dissertation constructs a chronological framework, which ultimately serves as a basis to investigate the settlement patterns at various spatial and temporal scales. The regional analysis combines a study of three different data sets. At a regional scale, the survey data collected by Elizabeth Carter of UCLA forms the backbone of the analyses. At a micro-regional scale, this work is complemented by the catchment studies conducted by the author in different basin systems of the survey area. Finally, an analysis of Domuztepe's surface collection, at 20 hectares one of the largest 6th millennium BC sites recorded in the Near East, provides an understanding of the intra-site patterns of settlement continuity, congruity and abandonment.

I identify two transitions in the diachronic analysis of settlement patterns of Kahramanmarash; the first transition occurs at the end of the 7th millennium BC, at a time when painted ceramic traditions known as Hassuna-Samarra and Halaf were rapidly gaining popularity in northern Mesopotamia. The second transition occurs during the latter half of the 6th millennium BC, chronologically corresponding to the Halaf-Ubaid Transition in northern Mesopotamia. I explore the correspondence of these transitions observed in settlement and ceramics to the environmental and social factors. In particular, I search for the correlation between the social implications of spatial congruity and temporal continuity in the contexts of climatic change, subsistence practices and material culture change.

The economically informed explanations often do not acknowledge the culturally specific background that may have influenced the decisions regarding the choice of settlements and subsistence strategies in prehistoric contexts. Through an examination of the relationship between the settlement use, the places of burial and the mortuary practices in general, I investigate the cultural significance attached to settlement places of the 6th millennium BC that may have affected the patterns of spatial congruity and temporal continuity.

In the final chapter, I model a dual process of change through which a more satisfactory understanding of the 6th millennium BC material culture practices may be possible.

In press and forthcoming:

Basta I: The Human Ecology

edited by H.J. Nissen, M. Muheisen & H.G.K. Gebel, with contributions by M. Thaís Crepaldi Affonso, C. Becker, H.G.K. Gebel, A. Hauptmann, B. Dahl Hermansen, U. Kamp, M. Muheisen, R. Neef, H.J. Nissen, E. Pernicka & N. Qadi. *bibliotheca neolithica Asiae meridionalis et occidentalis & Yarmouk University, Monographs of the Institute of Archaeology and Anthropology, Vol. 4.* (in press) Berlin: ex oriente [ISBN 3-9807578-0-3]

Central Settlements in Neolithic Jordan: Proceedings of the Symposium Held in Petra (July 1997)

edited by Hans-Dieter Bienert, Hans Georg K. Gebel, and Reinder Neef. *Studies in Early Near Eastern Production, Subsistence, and Environment 5* (1998, publication in 2004). Berlin: ex oriente [ISBN 3-9804241-4-6]

Bartl, Karin

Vorratshaltung. Die spätepipaläolithische und früh-neolithische Entwicklung im westlichen Vorderasien.

Voraussetzungen, typologische Varianz und sozio-ökonomische Implikationen im Zeitraum zwischen 12,000 und 7,600 BP. *Studies in Early Near Eastern Production, Subsistence, and Environment 10* (in prep.). Berlin: ex oriente & Deutsches Archäologisches Institut. [ISBN 3-9807578-1-1]

New Website:

The 14C Database of Archaeological Settlements in Turkey

“The 14C Database of Archaeological Settlements in Turkey” is available for online users since April 2004. The dates are presented as a custom searchable database format. It is possible to get from the dates to the sites and vice versa. Includes chronological graphs for Anatolia and Thrace devised from the dates. Currently spans only from the Palaeolithic to the end of the Chalcolithic. The EBA and later will be added soon. Access, as always, is from <http://tayproject.org/veritabeng.html>

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Masthead

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