PART II

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CHRONOLOGY
AND GEOGRAPHY

.....

CHAPTER 3

..... NEOLITHIC ANTECEDENTS

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 At the turn of the twentieth century, excavations beneath Bronze Age strata at Dimini and Sesklo in Thessaly and Knossos on Crete revealed an earlier epoch of human occupation, characterized by stone tools, handmade pottery, and the bones of domesticated animals (Evans 1901; Tsountas 1908). Termed Neolithic by analogy with other European regions, it was immediately clear that this was a phase of village-dwelling farmers, the Aegean’s first agricultural society.

AN IMAGINED NEOLITHIC

In these early years and under the influence of nationalist and colonialist agendas, a line was drawn in the sand of prehistory separating the more familiar, village-dwelling, sedentary, pottery-using farmers of the Neolithic and Bronze Age from the more alien, cave-dwelling, mobile foragers of the Palaeolithic and Mesolithic (Zvelebil 1995). In what has become a modern origin myth for Western society, the development of agriculture and sedentism was viewed as ‘an escape from the impasse of savagery’ (Childe 1942, 55)—a revolutionary beginning in the development of modernity, albeit one eclipsed in modern significance by the ‘urban revolution’ and the ‘emergence of civilization’ in the Bronze Age (Childe 1942, 79–163; 1950; Renfrew 1972). To modern eyes accustomed to almost constant change, the nearly constant continuity of the Neolithic seemed backward or uninteresting.

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Archaeological engagement with continuity was generally not as profound as its fascination for change, and, as a consequence, Neolithic communities were dismissed as static, small, isolated, and immobile, lacking social stratification, competition, and craft specialization, and preoccupied with subsistence self-sufficiency (e.g., Childe 1936, 1942; Weinberg 1970, 587; Renfrew 1972, 52; Cherry 1983, 33). Understood thus in opposition to the Bronze Age, the Neolithic served a useful purpose as a contrastive device in definitions of civilization (e.g., Renfrew 1972, 3–26; Tomkins 2004, 39–40) and as a means of focusing the narrative of emergence within the Bronze Age. This rhetorical use of the Neolithic is typical of a more general approach to human prehistory (Gamble 2007, 10–83, for a critique). By choosing to divide up the past into major periods such as the Neolithic or Bronze Age, we reduce its complexity to a limited number of categories, about which we develop generalized and largely contrasting characterizations. Inquiry is reduced to a search for origins, change is marshaled into revolutions, usually located at the transitions between major periods, and the role of people in effecting continuity and change is suppressed (Barrett 1994, 2–5, 157–64; Gamble 2007, 10–83).

A NEW STONE AGE

Inevitably this caricature began to unravel when archaeologists started taking a more specific interest in the collection and interpretation of Neolithic data. Early syntheses were able to glimpse hints of complexity and change (e.g., Renfrew 1972, 50–53, 63–80), and in time it has become clear that the Neolithic and the Bronze Age have many features in common, such as craft specialization (Renfrew 1973; Kotsakis 1983; Vitelli 1989; Perlès 1992; Tomkins 2004, 52–53), a diversified agricultural subsistence base, and broadly analogous systems of intensive horticulture (Halstead 2000, 2004). Agricultural surplus, once seen as the preserve of Bronze Age, elite-driven economies (e.g., Childe 1942, 22–23, 54, 61–62), is now viewed as central to the Neolithic economy and a key resource in social competition (Halstead 1989, 1999). Studies of the production and circulation of material culture have made it clear that Neolithic farmers, far from being immobile, were able to sustain contacts at local, regional, and interregional levels (Renfrew 1973; van Andel and Runnels 1988, 236–38; Perlès 1992; Tomkins 2004, 48; Tomkins, Day, and Kilikoglou 2004). Moreover, thanks to the insight that the long-term viability of Neolithic communities was predicated on their ability to maintain external relationships (Sahlins 1974, 41–99; Halstead 1989, 70–71; 1996a, 301–303), exchange is now seen as central to Neolithic society, indeed as one of the principal means by which value in objects (and thus people) was negotiated (van Andel and Runnels 1988, 234–38; Perlès 1992, 149; Andreou, Fotiadis, and Kotsakis 1996, 559; Tomkins 2004, 48; 2007a, 192–93). Regarding consumption, it is widely recognized, not least in the production of fine ceramic tableware (Vitelli 1989; Sherratt 1991; Tomkins

2007a; Urem-Kotsou and Kotsakis 2007), that special, ritualized occasions of commensality were central to the reproduction of core values, identities, and relations throughout the Neolithic and Bronze Age. Finally, several studies have concluded that the competitive pursuit of status, once viewed as an emergent property of the emergence of civilization in the Early Bronze Age (e.g., Renfrew 1972, 42), was also a key component of Neolithic social life, albeit one mediated and curtailed by social controls (Kotsakis 1983, 213–14, 264–300; 1999; Halstead 1993, 1999, 90; Tomkins 2004, 48–50; 2007a, 192–95).

It is also the Neolithic that sees the first appearance of commodities such as the vine, the olive, and metal, whose availability has been linked to the emergence of Bronze Age societies (Renfrew 1972; van Andel and Runnels 1988, 240; but see Hamilakis 1996; Halstead 2004, 190–94). During LN and FN, the rarity of metal objects, their special material qualities, and the frequency with which they form part of ritualized depositional practices suggests that they were highly valued (Nakou 1995; Tomkins 2009). Evidence for Neolithic usage of the olive and the vine is sketchy (Hamilakis 1996) but present in regions such as west Crete (olive: Moody, Rackham, and Rapp 1996, 282–89) and Macedonia from the late fifth millennium BC (vine: Valamoti, Mangafa, Koukouli-Chrysanthaki, and Malamidou 2007; Urem-Kotsou and Kotsakis in press).

Recognition of these commonalities between the Neolithic and Bronze Age is important in allowing us to dismantle the artificiality of our inherited periodicization of the past and to trace development along common axes of variation. Within this more inclusive framework, longstanding Bronze Age research questions regarding origins and emergence may be reformulated and readdressed by exploring how these separate axes of variation develop and change in articulation, context, and meaning over a longer timescale stretching back into the Neolithic.

FALSE DAWNS

At the same time, a number of superficially attractive but empirically dissatisfying attempts have been made to project certain key elements of Bronze Age ‘emergence’ back into the Neolithic.

A Neolithic Secondary Products Revolution?

Under the influence of recent traditions of land use in Greece, it has been argued that pastoralism lies behind a domestic usage of caves and the settlement of agriculturally more marginal upland regions in the later Neolithic (e.g., Jacobsen 1984; van Andel and Runnels 1988, 242; Sampson 1992). Frequently this has been connected with the notion of an Early Bronze Age ‘secondary products revolution’ (SPR), in which the westward dispersal of a series of Near Eastern innovations in animal

management (e.g., traction/transportation, wool/textiles, pastoralism) triggered the emergence of Bronze Age civilization (Sherratt 1981).

More recently, however, the empirical and theoretical foundations of Neolithic pastoralism have been thoroughly questioned, and other models for cave use and marginal colonization have been proposed (Halstead 1996a, 301–302; 1996b; 2000, 111–15; 2008; Tomkins 2008, 38–40; 2009). While aspects of the SPR model such as wool/textile production or the use of animals for dry-shod bulk transportation were clearly intrinsic to Bronze Age economic development, there is nothing in an increasingly cogent body of bioarchaeological data to suggest a sudden, revolutionary shift toward the use of animal secondary products before the Bronze Age (Halstead 2008). Moreover, the first appearance of key components of the SPR model, such as animal traction and dairying, may now be placed much earlier within the Neolithic (Isaakidou 2006, 2008, 101–110; Evershed et al. 2008). Evidence for the use of cows for traction first appears in EN levels at Knossos, where it appears to be embedded within an existing economy of small-scale, intensive horticulture rather than driving a new, extensive form of farming.

Neolithic Urbanism?

A capacity to sustain large aggregations of population is generally seen as a defining feature of Bronze Age Aegean society (e.g., Childe 1950; Renfrew 1972, 5, 7). However, size estimates for several later Neolithic tells (e.g., Knossos: 5 ha; Kouphovouno: 4 ha; Sesklo: 13 ha) and ‘extended settlements’ (e.g., Vasilika: ca. 25 ha.; Thermi: >12 ha.) would appear to place these sites far beyond the normal Neolithic village size threshold (ca. 0.5–2.0 ha, ca. 300–500 people) (Evans 1971; Halstead 1994, 200; Kotsakis 1999, 67–69; 2006; Mee 2001, 3). This has been interpreted as a precociously early form of asymmetric social restructuring or even urbanism, driven by exceptional, local demographic and ecological conditions (Broodbank 1992; Grammenos 1997, 283–90; Manning 1999; Mee 2001; Cavanagh 2004). However, the empirical basis for these claims is open to question. Excavations at extended settlements suggest habitation by a relatively small group favoring a dispersed and shifting pattern of habitation (Kotsakis 1999, 67–68; 2006). The size of the inhabited area at Knossos has recently been revised down to an unexceptional 2.0–2.5 ha (Tomkins 2008, 35–36), and Kouphovouno, too, may turn out to be more typical once its spatial extent is documented by phased excavated deposits rather than mixed surface scatters.

Neolithic Core-Periphery Relationships?

It has long been recognized that the divergent regional trajectories of socioeconomic development that emerged during the Bronze Age may, at least in part, be understood in terms of human responses to the varying ecological configuration of the Aegean (Renfrew 1972, 265–307; Halstead 1994; Manning 1994). Some have sought

to identify similarly divergent, ecologically driven trends of development from the beginning of the Neolithic, viewing the densely settled region of Thessaly as the exceptional core and the southern Aegean as its underpopulated and unimportant periphery (e.g., van Andel and Runnels 1988, 234–40; Perlès 2001, 5, 143–51, 297–98). However, aside from site density, the evidence strongly suggests that regional Neolithic development was broadly isomorphic in character, with communities in different regions sharing fundamental similarities in size, subsistence economy, preferred location, and social organization (Sherratt 1981, 315; Halstead 1981b, 194–95; 1994, 200; Kotsakis 1999, 67; Perlès 2001; Tomkins 2004, 42–50).

Moreover, as has long been recognized (e.g., Sherratt 1972), regional variation in the density of Neolithic settlement is primarily a function of constraints imposed by ecological variation (soils, hydrology) and subsistence technology. The influence of taphonomic and research biases may also be suspected. Meaningful spatial differences in development can be sustained only at a continental level, notable being the disparity between a later Neolithic landscape of villages in the Aegean and the contemporary emergence of urbanism in the Near East (Akkermans and Schwartz 2003, 154–210). While ‘escaped technologies’ and individuals may occasionally have found their way across this developmental divide (Sherratt and Sherratt 2008), the Neolithic Aegean and its neighbors constituted essentially separate worlds of existence.

SOCIAL LIFE AND SOCIAL TRANSFORMATION DURING THE NEOLITHIC

Over the last decade or so, socioeconomic development during the Neolithic has come to be framed in terms of a developing relationship between two spatial scales of social organization: the household, generally viewed as commensurate with individual residential units (Renfrew 1972, 365; Halstead 1999, 79–81), and the community, broadly equated with the totality of an individual settlement (Halstead 1995, 1999; Kotsakis 1999; Tomkins 2004). Although this relationship is often represented as a tension between household self-interest and the necessity of communal cooperation (Halstead 1995), the archaeological record bespeaks continuity and stability suggestive of a comfortable symbiosis. Shifts in the balance of this relationship nevertheless occurred and, at least on present evidence, appear to have taken the form of rapid transformations, the impact of which can be traced in many aspects of existence, from spatial organization and production to storage, consumption, and exchange (e.g. Halstead 1995; Tomkins 2004).

In this way, the Neolithic may be broken down into two relatively stable phases (IN–MN, LN–early FN), punctuated by two shorter periods of socioeconomic transformation, one occurring around the MN–LN transition (ca. 5500/5300 BC)

and one beginning late in FN (ca. 3500–3100/3000 BC) and running into the Early Bronze Age. Across this great span of time we can trace the progressive isolation of the household as an independent social, economic, and political unit and its progressive appropriation of communal rights, controls, and obligations until, by the end of FN, a society once subjugated to the interests of the many had been transformed into one driven by the interests of specific groups, who would in time become the ‘elite’ households of the Bronze Age. From this perspective, the Neolithic emerges as not just the background to the emergence of greater complexity in the Bronze Age but also its beginning, the crucial socioeconomic transformation occurring not, as often assumed, at the transition between our modern periodicizations of the past but a little earlier—in the late FN.

The Submerged Household (ca. 7000–5500 BC)

Within earlier Neolithic (IN–MN) communities, residential units tend to crowd together with cooking facilities located both within and between different structures (Halstead 1995, 16–19; Andreou, Fotiadis, and Kotsakis 1996, 559; Tomkins 2004, 43–45; Nanoglou 2008). This has been interpreted as marking an overarching obligation for households to share food, probably at regular, ritualized occasions of commensality that took place within and on the periphery of residential areas (Halstead 1995, 16–17; Tomkins 2007a, 187–88). Studies of earlier Neolithic craft production have emphasized the role played by communal participation in a production process that was small-scale, inefficient, labor intensive, and characterized by tremendous continuities in practice (Vitelli 1993, 210; Miller 1996; Perlès and Vitelli 1999, 104–105; Tomkins 2004, 45–47).

This raises the question of whether agricultural production, which similarly requires group cooperation at certain stages in the production process, could have been organized at the communal rather than household level (Tomkins 2004, 2007; Nanoglou 2008; Halstead *in press* for an opposing view). Under such a model, earlier Neolithic households would not have enjoyed a natural right to the products of their labors, produce would have been pooled, and land would have been held in common (Tomkins 2004, 42–43; 2007a, 187–89, 192–93).

At present, the bioarchaeological data for this period are partial, incomplete, and largely equivocal on the question of organization. A possible hint in favor of a more communal model is suggested by the absence of evidence for long-term, bulk agricultural storage at the household level (i.e., over and above normal short-term household provisioning). The existence of such facilities (e.g., granaries, grain pits) at a communal level has not yet been adequately investigated, but one obvious candidate from IN Knossos would be a burnt mud-brick structure, probably raised on posts and of unknown extent, which had clearly contained grain (burnt grain present and grain impressions on the interior surface of mud brick) (Tomkins 2007a, 187–88).

Households during this period may be described as ‘submerged’ in the sense
 ----- that they were embedded within a broader system of rights and obligations that
 ----- continued to assert the primacy of the community (see Düring and Marciniak

2004 for a similar view of the Central Anatolian Neolithic). People lived as separate households but constituted themselves communally, the most significant moments being those seasonal activities of production (craft, food) and consumption (e.g., commensality), which brought households together as a community. Through these collective activities, people constructed a particularly strong and stable vision of their shared origins, values, and identity, which effectively restricted the extent to which individual households could pursue their own self-interest.

If land was held in common and production (craft, food), storage, and the ritualized deployment of agricultural surplus were communally organized and regulated, status competition between households is likely to have been directed into other areas (Halstead 1999, 89–91; Tomkins 2007a, 192–93). If so, this would explain why considerable effort, measured in the circulation of objects (pottery, lithics), appears to have been expended in cultivating external social relationships, often over distances far greater than necessary to ensure demographic viability or offset the risk of productive failure (Perlès 1992; Halstead 1999, 90; Tomkins 2001, 374–75; 2004).

In the case of EN–MN Knossos, for example, stylistic and petrographic studies suggest that up to half of the pottery consumed was not produced directly at the site but in locations ranging from the near vicinity to different regions within and beyond Crete (Tomkins and Day 2001; Tomkins and Kilikoglou 2004). Distance here may be understood to constitute a form of symbolic capital that could be expended through the consumption of exchanged gift items such as ceramic vessels, which symbolized these distant relationships and provided a cue for displays of prowess through the narrating of object biographies and tales of travel and acquisition (Tomkins 2004, 48; 2007a, 192–93). In this way, while communal activities such as commensality reinforced the primacy of the community, they also provided restricted opportunities for households to compete for status.

The Emergent Household (ca. 5500–3500 BC)

Beginning at the end of MN, a series of changes signals a shift in the constitution of Neolithic society (see Halstead 1995, 1999; Kotsakis 1999, 2006; Tomkins 2004). Some communities, such as Dimini in Thessaly and Knossos on Crete, expand to become large villages (ca. 1.5–2.5 ha) and become more clearly partitioned into separate (household) units and enclosed external spaces (Hourmouziadis 1979; Halstead 1995, 14–15; Kotsakis 2006; Tomkins 2008, 33).

This architectural isolation of the household coincides with the appearance of ceramic house models, which reify the household as a separable socioeconomic unit (Gallis 1985; Tomkins 2004, 51–52). The enclosing of external spaces suggests an encroachment on what had previously been a communal space of production and consumption. The size of residential units (ca. 70–100 m²) suggests an extended household unit larger than a single nuclear family (Halstead 1992, 54). The appearance of a more discrete household unit may have enabled the development of the hamlet (< 0.5 ha), a more compact scale of communal living that first appears late in MN (e.g., MN–LN I Katsambas, Crete; Galanidou in press). Such developments

facilitated a process of settlement infill and expansion into unsettled or agriculturally less productive lowland areas of the Aegean (e.g., southern Larisa plain; Herakleion basin; central Cyclades) (Halstead 1989, 76; 1994, 200; 1995, 14–15, 17; Broodbank 2000, 144–56; Tomkins 2008, 33–34).

The LN period has been identified as a time of change in the technology, organization, and ownership of production. From the beginning of LN, craft production (e.g., shell beads at Franchthi; pottery at Knossos) sees changes in technology and dramatic increases in efficiency, intensity, and output, suggestive of the involvement of a smaller, possibly more specialized producing group (Miller 1996; Perlès and Vitelli 1999, 104–105; Tomkins 2001, 334–48; 2004, 52–53).

Significant change is less clearly identifiable in agricultural production. Although early syntheses isolated the LN period as a phase of increasing diversification in the subsistence economy (Renfrew 1972, 49, 52, 274–80; Halstead 1981a, 320–27; 1994, 200–202), the incomplete nature of the dataset, especially for the earlier Neolithic, cautions against confident recognition of temporally specific patterning (Halstead pers. comm.). In some cases, however, seemingly new agricultural practices find corroboration in associated changes in material culture. Thus, for example, the appearance of flax in an LN level at Knossos (Sarpaki in press) broadly coincides with the appearance of ceramic ‘shuttles,’ which appear to skeuomorph weaving equipment (Evans 1964, 233).

Similarly, the evidence for Aegean usage of the olive and the vine from the late fifth and fourth millennia BC broadly coincides with a horizon of pouring shapes and drinking sets in the pottery typologies of Crete (Tomkins 2007b, 32–44, for a new FN I–IV chronology), northern Greece (Urem-Kotsou and Kotsakis in press), and elsewhere in Europe (Sherratt 1987). In both examples, the focus seems to be on ‘special’ crops amenable to being transformed by a small producing group (household) into low-volume, high-value products (oil, wine, cloth) that are particularly suitable for deployment in social networking.

The LN period also sees evidence at some sites for changes in agricultural storage. For example, at LN Dimini an increase in built, indoor storage facilities suggests increased storage capacity at the household level, while the appearance of large, deep pits in external spaces attests to a greater interest in the long-term storage of agricultural surplus (Renfrew 1972, 288; Halstead 1989, 75–76; 1995, 17; 1996a, 305–306). The increased visibility of agricultural storage at the household level may suggest that households now enjoyed a greater degree of control over the organization and destination of their productive output.

A shift in the context of production from a communal to a household level would not only have lessened the influence of social resistance to change—most powerful when activities take place in a public arena—but also, in giving households greater control over their productive output, would have created new opportunities for status competition and new incentives for technological change. Changes in craft production, agricultural production (i.e., introduction of ‘special’ crops), and storage may all be read as deliberate attempts to control and increase the quality, quantity, and diversity of household output, which might then be deployed

competitively in the negotiation of status at varying scales and in a variety of contexts (Halstead 1993, 606–608; 1995, 18; 1999, 90; Tomkins 2004, 54–55).

The household during this period may be described as ‘emergent’ in the sense that it had become a more discrete social, economic, and political unit, but one whose independence continued to be curtailed by a powerful set of communal obligations, manifest perhaps in restrictions on ownership and accumulation. Households continued to live in aggregations, apparently preferring communal living to individual spatial isolation. Moreover, the failure of Neolithic communities to grow beyond the threshold above which egalitarian communities tend to fission or evolve more complex forms of organization (ca. 2–3 ha or 300–500 people; Whitelaw 1983, 340) speaks eloquently of an absence of permanent institutionalized inequalities that would otherwise have developed if household isolation and competition had been allowed to develop unchecked.

Although the centrally located megara at Dimini and other villages in Thessaly have been interpreted as marking the emergence of a ‘megaron elite’ (Halstead 1989, 78; 1995, 14–15), it is telling that consumption patterns (animals, spondylus) at Dimini reveal no differences in access—and thus no signs of socioeconomic advantage—between the central megaron and other domestic units (Halstead 1992, 1993). Moreover, the central megaron at Dimini is no larger than other domestic units and is marginalized in location and dwarfed in size by a large, centrally located open space. Perhaps the entire central area, megaron included, was given over to communal ritual, constituting perhaps the earliest known instance of a deep tradition of communal ritual in association with central megara on the Greek mainland, which continued into the Bronze Age and perhaps beyond. Indeed, it is in ritual that affirmation of the communal continues to be most clearly represented. The evidence from burial and other forms of corporal manipulation continues to emphasize the primacy of the communal over the individual (Triantaphyllou 1999, 2008) and ritualized occasions of group commensality, sometimes on a truly massive scale (e.g., Pit 212, LN Makriyalos; Halstead 2004, 196; Pappa, Halstead, Kotsakis, and Urem-Kotsou 2004) remained the primary arena for competitive display.

The Modular Household (ca. 3600/3500BC–Early Bronze Age)

At late FN lowland villages (e.g., Pevkakia, Knossos), residential structures continue to be of a size to suggest an extended household unit larger in size than a single nuclear family. From late FN, cooking facilities in Thessaly either move indoors or are set outdoors in an enclosed yard (Halstead 1989, 77). This hardening of the distinction between the household and the community finds its clearest expression in the emergence during the late FN of two strategies of livelihood, marginality and trading, both of which would be crucial to Bronze Age development.

Marginality might be defined as the settlement of agriculturally less extensive or productive areas of the landscape and is a recognized feature of the FN settlement record of the southern Aegean and other regions of Europe (Sherratt 1981,

292–93; Halstead 1994, 200; 2000, 117–22; 2008; Broodbank 2000, 149–56). For Crete it has recently become clear that this process first began at the end of FN (FN IV; ca. 3300–3100/3000 BC), with some regions not settled until EM I (Tomkins 2008, 38–40). Although less precisely dated in the Peloponnese and the Cyclades, there, too, it was a late FN or EBA phenomenon (Broodbank 1989, 320–21; 2000, 150; Vitelli 1999, 98–99).

Late FN marginal settlement systems generally take the form of networks of small sites (from hamlets to single dwellings) located on more discrete and dispersed pockets of arable land (e.g., Broodbank 1989, 320–27; 2000, 149–51; Branigan 1998). Current evidence suggests that marginal communities continued to rely on mixed farming, supplemented perhaps by forms of economic specialization such as herding, which were appropriate to the specific environment in question (Halstead 2000, 117–22; 2008). The ability to settle these environments depended on two related developments: first, a new possibility for social and spatial disaggregation, perhaps scaling down as far as the nuclear family when stress or the configuration of resources demanded (Halstead 2008); and, second, the construction of a new, dispersed form of community, where intervisibility and mobility served to link scattered sites into larger, more viable entities.

Such changes imply a greater possibility for household isolation and independence and a looser, more flexible understanding of community, developments that are tantamount to a breakdown in the checks and balances that had hitherto sustained the stability of the later Neolithic system of village life. Transposed to the lowland village, this suggests a scenario where failing households could have been less certain of communal protection and their land, labor, and livelihood were more open to interference and appropriation by successful households seeking to transform short-term gain into longer-term competitive advantage. Some failing households may have opted to stay, perhaps indebting their land or labor; others may have chosen to take their chances with migration and economic diversification.

An alternative option, at least for some, was trading, defined as the establishment of long-distance exchange relationships in order to secure privileged access to high-value raw materials, objects, and practices (technologies, consumption) and the exploitation of their distribution as a means of negotiating power. While networks of relationships can be traced within and between the regions of the Aegean throughout the Neolithic, it is evident that the late FN saw an intensification in maritime movement and a change in the nature and role of exchange (van Andel and Runnels 1988; Perlès 1992; Broodbank 2000, 166–70).

One obvious aspect of this is a proliferation of late FN–EBA settlements along the coasts of the southern Aegean, many of which continued to be occupied into the Bronze Age (Broodbank 2000, 125, 149–74). While the majority of late FN coastal sites were too small to have mustered the resources necessary for trading (see Broodbank 1989, 330–32), some were comparable in size to the largest EB II trading sites (i.e., ca. 1–2 ha; e.g., Paoura, Kea; Petras Kephala, Crete; cf. Broodbank 1989, 330–32; 2000, 149).

It is becoming increasingly likely that these large, late FN coastal communities, like their later successors (Broodbank 1989), were involved in trading and perhaps already exploiting the longboat, especially those communities located in more marginal locations (e.g., Paoura, Kea; Broodbank 2000, 149). Although the volumes were low and trading still probably looked a lot like gift exchange, for the first time trade relationships seem to have been determined by a desire to secure privileged access to specific commodities and technologies. Thus, late FN Cretan coastal sites such as Nerokourou and Petras Kephala exhibit a particularly close connection (imported pottery, obsidian) with the Attic-Kephala region but appear to lack corresponding links with more proximate regions (Vagnetti 1996; D'Annibale 2008; Papadatos, Tomkins, Nodarou, and Iliopoulos in press). The specificity and scale of these distant connections suggest the involvement of a seacraft with capabilities similar to those of the longboat (cf. Broodbank 1989, 327–35), a conclusion given more credence by the recent discovery of iconographic representations of longboats from the large late-FN site of Strophilas on Andros (Televantou 2008).

Although distant raw materials and objects had long been esteemed as status markers (e.g., Perlès 1992; Tomkins 2004, 48), it is only late in FN that people seek overtly to control their acquisition, production, and distribution. In the case of metal, although finished objects, mainly of non-Aegean type, had been circulating for millennia, it is surely significant that our earliest direct evidence for Aegean metallurgy, in the form of ores, crucibles, or slags, comes only late in FN and appears at large coastal sites (e.g., Kea Kephala, Nisiros, Petras Kephala; Broodbank 2000, 158–59; Papadatos 2007) and apparently as deliberate depositions at ritual cave sites (e.g., Kitsos, Alepotrypa; Tomkins 2009). At FN IV Petras-Kephala, obsidian and metal appear to have arrived in raw form and were then processed and transformed into finished products at the site (Papadatos 2007, 164; D'Annibale 2008, 192).

The near absence of obsidian and metal at contemporary inland sites in Crete (Carter 1998) suggests that trading communities like Petras Kephala would have been able to construct advantageous social relationships with other prosperous groups, a scenario that finds support in occasional finds of obsidian blades and metal objects at FN IV inland villages such as Knossos and Phaistos (A. J. Evans 1928, figure 3f; Todaro and Di Tonto 2008, 183, 185). In this way, trading served and stimulated a wider demand for nonlocal products and practices that would have been possible only if communal controls on accumulation and consumption had been loosened and households were now free to pursue more overt and ambitious strategies of accumulation. The development of trading, of restricted control over the production of prestige objects, and of hierarchies of access in the late FN should thus be understood in terms of the first emergence of an economy in prestige goods, smaller in scale but broadly analogous to that of the Bronze Age.

From the late FN, households may thus be described as 'modular' in the sense that they could now operate in isolation as fully separate and separable socio-economic units that might combine in different ways and at different scales to meet different circumstances. Such flexibility opened the door to the development of
new, alternative strategies such as trading and marginality, which were tailored to
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exploit a wider range of the resources configured across the land and seascapes of the Aegean (Whitelaw 2004; Tomkins and Schoep, this volume). In this way, the late FN emergence of the 'modular' household may be understood to set in train the process of local and regional socioeconomic diversification in the Aegean, which was central to the functioning of Bronze Age and later economies in the Aegean (Sherratt and Sherratt 1998, 334).

From late FN onwards, households appear to become more able to accumulate, appropriate, and compete in ways that brought them into direct conflict with each other and with domains of communal practice and belief that had previously been sacrosanct. This may be seen, for example, in encroachment upon communal ritual space and its appropriation as an arena for more overt expressions of identity and status. For example, the late FN sees an upsurge in the visibility and intensity of burial, manifest in the Cyclades, Euboia, and Attica (e.g., Kephala, Tharrounia) in the appearance of extramural community cemeteries (Broodbank 2000, 150, 154, 170–73). In Crete, caves with older histories of usage as communal ritual sites see a marked intensification in the deposition of human skeletal material in FN IV, a practice that, in EM I, spreads to a host of new caves and rock shelters (Tomkins in press a). At FN IV Knossos and perhaps also Phaistos, certain houses are juxtaposed with large, formal communal areas that hosted large-scale, ritualized occasions of commensality and went on to become the Central and West Courts of the Bronze Age palace buildings (Todaro and Di Tonto 2008; Tomkins in press b).

ULTIMATE CAUSES?

At a basic level, all explanations of emergence remain dissatisfying unless they can adequately account for the specific timing of socioeconomic transformation. For much of the twentieth century, technology was viewed as the driving force behind social change, and explanations tended to focus on the timing of the appearance of so-called transformative commodities and technologies (e.g., olive, vine, metals/metallurgy) whose advantages were taken to be self-evident and to have ensured their rapid acceptance (e.g., Childe 1942, 74; Renfrew 1972, 34, 265–338, 476–504; Sherratt 1981, 285; van Andel and Runnels 1988, 242–45). Allied to this was the notion that population growth, modeled as an ever-present inflationary pressure, left societies especially open to the adoption of technologies that might allow resource expansion (e.g., Sherratt 1981, 286).

In time, however, as the causal relationships in the archaeological data become better understood, it has become clearer that both change and continuity arise from the actions of knowledgeable actors operating within specific, contingent social and material conditions of existence. Technologies spread only because people choose to adopt them (van der Leeuw and Torrence 1989), populations grow only as a consequence of changes in socioeconomic organization, and continuity may be recast as

a dynamic and deliberate evocation of established structures, values, and relations and as a socially embedded, cultural resistance to change. In this chapter, it has been argued that technology, production, exchange, consumption, storage, space, and ritual are dimensions along which we may measure Neolithic development and that changes in these areas are causally related to more fundamental shifts in the social conditions of existence, more specifically in social rights, obligations, and identities, represented here in terms of a developing relationship between the community and the household (see also Gamble 2007, 161–204).

In the end, however, archaeology can take us only so far. To go further and understand what ultimately prompted societies structured around continuity to transform themselves, we need to look more closely at the material conditions of existence within which social agency operates and specifically at factors that influence human decision-making but lie beyond human control. It cannot be simply coincidental that the punctuated equilibria of continuity and change in the Neolithic archaeological record broadly parallel major phases and shifts in climate as revealed by modern palaeoclimatic studies (Roberts 1998; Grove and Rackham 2001; Rosen 2007; Broodbank 2008, 284–85).

For most of the Neolithic, the climatic regime was notably different from that which prevails today. Thus, the long and seemingly stable earlier Neolithic period (ca. 7000–5500 BC) broadly coincides with the early Holocene optimum, a relatively stable phase of wetter, milder, and less seasonal weather. Interannual variability increases from the mid-sixth millennium BC (or the late MN/LN transition), broadly corresponding with the series of changes associated here with the emergent household.

Finally, from the mid-fourth millennium BC (late FN) and coinciding with the emergence of the modular household, there begins a phase of more extreme aridity, seasonality, and unpredictability that marks the emergence of the modern Mediterranean climatic regime (Grove and Rackham 2001, 144–50). While more work is certainly required to improve the correlation between the archaeological and climatic data, these apparent parallels suggest that we should seriously consider whether the timing and nature of the MN/LN and late FN social transformations across the Aegean reflects a series of broadly analogous, but contextually specific and contingent human responses to ecological change.

Climatic change could not determine the nature and direction of social change, but it did have the potential to disrupt social structures by influencing and altering the conditions of existence within which human actors make choices, thereby opening up new possibilities of behavior. In the case of the emergent household, greater climatic unpredictability may have led to shortages of agricultural surplus and uncertainty about productive capability, thus undermining the role of the community as provider and exposing some of the weaknesses (e.g., inefficiency, underproduction) of the earlier Neolithic communal mode of production. In this way, once sacrosanct rights and obligations may have been called into doubt and become open to negotiation.

The emergence of the household as a more independent productive unit and a
greater interest in storage at the household level could be seen as logical outcomes of
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such a process. Similarly, the emergence of the modern Mediterranean climate, late in FN, could be seen as favoring the development of a more flexible, modular productive unit that was better able to exploit a wider range of resources as a response to greater subsistence insecurity. Unlike the MN/LN transformation, where the process of household isolation was held back by social restrictions and thus stabilized, the late FN shift created the conditions for further change, initiating a continuous process of asymmetric socioeconomic development in the Aegean, characterized by essentially repetitive and analogous cycles of development and decline that run through prehistory and history up to the present day.

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