Neolithic Corporate Identities

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dedicated to Klaus Schmidt

who pioneered the change in understanding the Neolithic

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The Construction of Neolithic Corporate Identities.
Introduction

**Marion Benz[1], Hans Georg K. Gebel[2]
and Trevor Watkins[3]**

After more than a million years of living in small, mobile foraging bands, over a mere fifteen millennia, between beginning of the Epipalaeolithic and the end of the Neolithic, human societies in some areas of southwest Asia were completely transformed: people began to live in large, settled communities that increasingly relied on agriculture and herding. Against the background of earlier hominin evolution, this was an extraordinary development, both for its relatively rapid process, and because it required fundamentally new forms of social, economic and cultural life. It goes without saying that these transitions to new ways of life and to new concepts of relationships with social and natural environments were incremental, requiring and creating new cognitive regimes (Sterelny and Watkins 2015; Watkins 2016). Those who initiated them could not have perceived them as fundamental changes; the processes to which they contributed were not calculated towards a programme of progress or a particular end. The mobile forager bands who began to change the ancestral hunter-gatherer way of life, initiating the trend towards sedentism in the earlier Epipalaeolithic of the southern Levant, could not have perceived that they were at the opening stages of a process that millennia later would lead to the emergence of large-scale, permanent settlements. Yet, the new forms of territorial, social and cognitive commitment initiated processes that in the long run made it impossible to turn back. Let us say here, at the very beginning of the introduction, that the workshop from which this publication derives was focused on the Neolithic period, to the almost complete exclusion of discussion of the earlier stages in the transformation that brought the Neolithic communities into being.

Mastering living in ever larger groups was – and still is – one of the most difficult challenges for humans: it not only requires effective strategies to resolve complex conflicts of interest between different factions (individuals, sub- and supra-groups and their shifting alliances), but it also involves two fundamentally opposed tendencies in the development of human identity formation: *assimilation* and *differentiation*.

According to socio-psychological theory (*e.g.* Morris 1973 [1934]; Bewer 2012 [1991]; Blumer 2013: 35-41; for a condensed summary see Davidovic 2006: 40-47) the formation of identity is considered a constant process of perception of/and sensitivity to social and natural environments, reflection, incorporation, and – through the interactions of humans – the shaping of those environments. Infants develop an increasingly differentiated awareness of themselves only through perception of and interaction with their environments (*e.g.* Rochat 2003; Tomasello and Rakoczy 2003). At least during the early stages of socialization infants thus depend on others, and the social groups (most often parents and families) in which children grow up exert decisive influences on the development of body and mind[4], creating memories and perspectives that prime us lifelong (*e.g.* Morris 1973 [1934]; Triandis 1989; Brewer 2012 [1991]; Bauer 2015) and via epigenetic inheritance possibly over generations (Skinner 2015).

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[4]   The strong interdependence of body and mind has been impressively summarized by J. Bauer (2015).

Fig. 1   The audience of the workshop's first day at Basel University. (photo: H.G.K. Gebel)

This does not mean that group identities are blindly adopted by individuals but – as mentioned above – based on constant acts of (re-)interpretation and on active processes of incorporation of group identities. Individual identities are therefore always relational to the social, cultural and natural environments; but, at the same time, individuals shape communal identities. Human identities are multidimensional and subject to a dialectical process between individuals and communities (Benz this volume).

Moreover, groups offer protection, orientation and downplay differences within the group thus suggesting familiarity with the "stranger". Briefly, "…belonging has an evolutionary advantage" (Hornsey and Jetten 2012: 108, see also Over 2016; Watkins this volume). Being stigmatized induces the same reactions in the brain as being physically injured (Bauer 2011: 58-60). Humans have developed several capacities which make them perfectly fit to achieve commitment and cooperation within groups. Above all, their capacity for empathy is outstanding. Reading the mind of others (theory of mind), anticipating their intentions and emotions has been called the "hallmark of human social behavior" (Rule *et al.* 2013: 6; for the neurobiological basis of this capacity see Bauer and Benz 2013). It lays the ground for communication even between foreign cultural groups and for successful cooperation (Bauer 2008; Eibl-Eibesfeldt and Sütterlin 2012: 86; Tomasello *et al.* 2012). It also makes humans the most efficient imitators and apprentices (Wulf 2005; Sterelny 2011). Yet humans go beyond *social learning* (either by imitation or information transmission); they tend to assimilate (sometimes even consciously and intentionally) their behaviour, opinions and memories to the majority (for reviews and empirical evidence with further literature see Lakin *et al.* 2008; Edelson *et al.* 2011; Haun *et al.* 2013, 2014; van Leeuwen *et al.* 2015).

Social learning and assimilation foster culturally stable traditions and cognitive niches (see Watkins this volume). They create in-group conformity and homogeneity and enhance corporate identities, which are manifested to others by diacritical objects, behaviours or concepts. Imitation, and in its strongest form assimilation, (unconsciously) generates sympathy (Florack and Genschow 2014). "People often favor their own group, even when the basis for categorization seems trivial and meaningless" (Hornsey and Jetten 2012: 108).

However, the price for in-group conformity seems rather high. It implies creating borders to other groups (for the concept of alterity see Davidovic 2006: 45). Empirical evidence from modern groups demonstrates that in-group conformity correlates negatively with inter-group tolerance and openness (*e.g.* Triandis 1972; Choi and Bowles 2007). As outlined above social exclusion feels like pain and can cause aggression, *i.e.* creating borders accepts the risk of enhancing conflicts. Despite this inherent endangering of security, the social strategy to achieve commitment and mitigate conflicts within a group by emphasizing differences to other groups seems the most simple and possibly, therefore, the most often practiced strategy (Schiefenhövel 2001: 184; see also Fehr *et al.* 2008). Detecting such seemingly ho-

mogenous groups in the archaeological record has been the standard aim when defining "archeological cultures".[5]

However, this strategy is not the only one and it may not prove successful in the long run in very large and heterogeneous groups. Social scientists have pointed out several other strategies (for a review see Hornsey and Jetten 2012). For example, loyalty can be enhanced by taking over task-specific roles within heterogeneous acephalic network structures. The risk of *depersonalization*, which has been claimed to be one of the major problems of large and conformist groups (*e.g.* Brewer 2012 [1991]: 39-43), can be circumvented by this strategy.

In daily life, *depersonalization* remains a basic problem of creating firm group identities, since it is strongly opposed to personal identity. In certain situations, being identical to someone or even only wearing the same dress can cause profound irritation or aversion. Even in situations where a strong display of a corporate identity – above all in rituals or competitions – is required and considered positively, small accessories or tiny, but significant changes of conformal appearance or behaviour might be used to indicate individual traits.

It has to be emphasized that the desire to be unique, is not a matter of individualistic or collective cultural priming, but rather seems universal (Hornsey and Jetten 2012: 128).[6] Individuality also should not be confused with a lack of social commitment. *Being similar but not the same* condenses the two opposing tendencies – of *assimilation* and *differentiation* – well. The larger and the more heterogeneous the group, the more difficult it will become to find a good balance between both processes. The ideal, perhaps, is what has been called "identity fusion", the oneness of the personal and the social self (Swann *et al*. 2012; Whitehouse and Lanman 2014).

These socio-neurobiological observations should be kept in mind, when it comes to the question of how early Neolithic communities created corporate identities, and how these might have been structured and changed with increasing sedentism and commodification (Gebel 2010). However, Gebel's contribution (this volume) implicitly demands, through his concept of the *Neolithic dividual*, that the characteristics of the socio-neurological dispositions of *Homo neolithicus* have to be a field of study in its own right; and that beyond the multidimensional and constant negotiation of identities between (in-)dividuals and groups (Benz this volume) a Neolithic "dividuation" might have preceded or dominated individuation phenomena, ruling all relational and identities formation.

Sociologists, anthropologists and social psychologists tell us that in larger social groups the individual cannot experience personal, face-to-face relationships with every other member of the community; trust based on personal knowledge, which sustained the economic and social networks of mobile small-scale groups, was no longer sufficient. Thus people of the Epipalaeolithic and Neolithic had to find new ways to create a sense of identity that was shared with people that they hardly knew, or had never seen (Watkins 2012). In large-scale societies, there is also a greater risk of cheats and free-riders, who can erode and undermine social trust and cooperation. It became all the more necessary to be able to imagine a larger community beyond those one knew, and larger than those with whom one shared everyday experience – to think of an extended "we". As sedentism began to become the norm, when co-resident groups grew larger and territorial permanence did not allow quitting the group or breaking up groups easily (Benz and Bauer 2013), it became crucial to find new ways to achieve commitment to communal needs, projects and cognitive domains in these fundamentally new socio-economic and environmental situations. After a long evolution of rather flexible social structures and open-access territorial concepts characteristic of small-scale mobile groups (*e.g.* Guenther 2010; Widlok 2017; for a summary see also Benz 2010), new ways to negotiate social identities had to be found. If concepts of being-in-the-world run the risk to be in fundamental contradiction to daily practices, they probably became meaningless in the long run. In his contribution to this volume, Hans Georg K. Gebel suggests that confining territories (spatial, social as well as conceptual) was one of the main strategies that effectively created Neolithic corporate identities (see also Gebel 2010, 2014). Media that encoded information in things in order to share information despite physical absence and personal ignorance became essential in order to support familiarity and understanding and to decrease fear of the unknown.

If new norms of behaviour that could enforce social commitment were not found in time, resulting social division and alienation could lead to material and social deprivation, suspicion or fears that could

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[5]   Such analyses are often based on one or two material categories such as ceramics, lithic tools or similar items, thereby neglecting the multidimensionality of identities (*e.g.* Spiong 2006; *cf.* Brather and Wotzka 2006)

[6]   The highly situative nature of the adoption of social identities has been summarized by Davidovic (2006: 45-46).

divide "us" from "them", and create the potential of aggression and conflict. Although there is some evidence for inter-personal violence in early Neolithic communities in southwest Asia, it is relatively uncommon, and there is little or none of the evidence for inter-communal violence that has been found in Neolithic contexts elsewhere. We must ask ourselves how Neolithic people managed to mediate social conflicts despite an increased population density, confined territories and reduced opportunities for personal confidence and personal social control.

There are questions, therefore, of both why and how populations adopted their corporate identities. Working from the archaeological record, we should think how to relate that material record to what anthropologists and psychologists tell us about how people create and share corporate identity. We still know little about the nature of the societies that emerged through the Epipalaeolithic and Neolithic. There is now a mass of archaeological evidence of the intensity and elaboration of symbolic representation in a variety of forms in these far-from-simple networked communities.

What was the adaptive advantage of living together in large numbers that outweighed the many disadvantages? How were social groups structured? If, for example, we find strong familial ties in the anthropological record, is this paralleled by a strong segregation in other domains such as raw material procurement, technology or nutrition? What do differences in nutrition, stress or activity markers mean? Were traditions strongly canonized or highly flexible, ubiquitous or concentrated in one domain? And is it possible to discern social and emotional (and thus, cognitive and perhaps ideological) concepts emerging in the new symbolism of this great transformation?

The chapters that follow mostly derive from papers that were presented and discussed at a workshop on anthropological record, "The Construction of Neolithic Corporate Identities", held under the auspices of the 9th ICAANE congress in Basle in 2014; in addition, the editors invited three colleagues not present at the workshop to contribute their important views to the publication.

The workshop was structured in three closely related sections each of which approached the subject from a different direction:
1. Neolithic Corporate Identities in Evolutionary Context
2. Neolithic Corporate Identities and the Socio-Economy
3. Neolithic Corporate Identities and Ideologies

The first section sets the theoretical and evolutionary framework for tackling basic questions of the relationships between humans, things, and environments at the transition to large-scale sedentism. The second and third sessions intended to focus on specific domains of these relationships and asked how these had been used to create or sustain corporate identities.

The central focus of the workshop, therefore, was on the different forms of corporate identities that emerged in the Epipalaeolithic and the Neolithic, and the means by which those identities were created, expressed, maintained and transformed. It was meant to promote and to discuss new approaches (of theories and methods) on how to interpret archaeological data in light of the above suggested theoretical questions.

Piecing together the evidence from these different domains and approaches does not mean that we seek a coherent Neolithic corporate identity. On the contrary, it implies that we accept and discuss the great variability of different processes which led to permanent living in large groups, adopting different and shifting corporate identities that are represented by a wide range of cultural materials and observations made from the archaeological record.

Specialists from various fields of research – from a more general approach of human ethology and media studies to specific archaeological case studies – contributed important aspects.

In line with an anthropological perspective, Christa Sütterlin sets the stage by outlining the importance of rituals, monuments and collective memory for the creation of group identities in various traditional communities. From a perspective of media studies, Erhard Schüttpelz argues for the deep rooting of the Göbekli Tepe imagery in a hunter-gatherer community comparing it to recent hunter-gatherer communities which face super-abundance.

Both archaeobotanists, Amy Bogaard and Eleni Asouti, recalled the importance of climate, ecology and availability of resources, aspects, which have been neglected in recent approaches that have focused on social or cognitive changes. Amy Bogaard emphasizes that "understanding of early farming communities and the sociality of agricultural practice requires a better grasp of the ways in which households cooperated in agricultural production […]."

Case studies of different regions and periods of the Fertile Crescent (Belfer-Cohen and Goring-Morris, Finalyson and Makarewicz, Morsch, Rollefson) provide valuable primary data to that discussion. Anna Belfer-Cohen and Nigel Goring-Morris emphasise that the display of group identities and territorial boundaries had already started during the Natufian, *i.e.* with the beginning of sedentism.

They underline the importance of jewellery, burial sites and rituals for the enhancement of corporate identities. However, their examples plainly show that similarities in one domain do not necessarily imply common traditions in other areas. Studies of corporate identities thus require a multilevel approach. Such a case study is given Bill Finlayson and Cheryl Makarewicz. With a focus on settlement structures, they describe the different local developments and networks of Neolithic group identities in southern Jordan. These archaeological examples from the beginnings of sedentism among Epipalaeolithic and early Neolithic groups illustrate well the dilemma mentioned above, between assimilation and differentiation within groups. Despite increasing supra-regional networks, it seems that the display of local identities became increasingly important (see also Belfer-Cohen and Goring-Morris 2013; Alarashi 2016).

In contrast to these rather local identities, Michael Morsch's analysis of corporate identity on the Upper Euphrates, indicates that there were standardized rules on a regional scale, represented in building traditions, organization of settlements as well as in rituals and body design. People obviously had a fixed idea of how men and women should be represented and should represent themselves. Moreover, there were not only standards in design, but also in production techniques and in the function of figurines. As much as they expressed a corporate identity they also created it. The centripetal forces of common symbols and rituals are also exemplified by the development of symbols at 'Ain Ghazal. Beyond that Gary Rollefson also draws attention to a very important aspect. Citing Annette Weiner, he mentions: "The object acts as a vehicle for bringing past time into the present, so that the histories of ancestors, titles, or mythological events become an intimate part of a person's present identity. To lose this claim to the past is to lose part of who one is in the present. In its inalienability, the object must be seen as more than an economic resource and more than an affirmation of social relations (Weiner 1985: 210)." Things can thus become essential parts of an individual's or a community's biography and identity.

The importance of material objects for the creation of corporate identities and for religion is also underlined by Lisbeth Christensen. She concludes her analysis with a thought-provoking and far-reaching hypothesis: if religion is closely related to symbolic objects, then similar to the diminishing importance attributed to objects – a trend she claims for modern city communities – "religion may be a passing phenomenon in the history of humanity".

In his contribution Gebel approaches the basic human need for identity, explaining how Neolithic corporate identities developed at the transition from "generalised" to "confined" identities, when it became imperative to socially cope and manage the increasing diversification and specialization in all spheres of social, economic, ritual, and cognitive productivity. By presenting definitions for – and elaborating on – Neolithic identity, the Neolithic corporate and the Neolithic relational self, he explains how confined territoriality, commodification and ideological/ habitus regimes became the cogwheels of the *Neolithic Corporate Identity Aggregate* that he presents. He stresses that Neolithic identities will remain constructs, supra-empirical and ultimately demonstrated by material evidence.

It will remain a subject for future research to investigate the different social strategies which were employed to enhance personal commitment and loyalty to group identities. Analyses of intra- or inter-group homogeneity *vs.* heterogeneity might give important evidence on that matter. The archaeological records – from stone tools to human remains – offer a diversified archive to study the degree of conformity within/or between communities. Comparing displayed conformity in symbols and rituals with conformity in *habitus* of daily life (*e.g.* diets, role differentiation, gender dimorphism, economy, domestic architecture *etc.*; see Benz this volume) seems a promising field of future research to specify the different forms of Neolithic corporate identities and critically reflect the idea of monolithic "archaeological cultures".

It is obvious, that our workshop could not be more than a kick-off meeting to introduce a new perspective and concept. Investigations on the precise nature of corporate identities during the Epipalaeolithic and early Neolithic need both more empirical studies and the reviewing of material excavated a long time ago with this new focus in mind. In that respect, and to be frank, we hardly know anything about an essential issue related to corporate identities: the familial structures and relationships in the various Epipalaeolithic and Neolithic communities. Whether we deal with core or extended family types, flexible or endogamous communities, is still almost a matter of speculation with reference to architectural, household or burial evidence, or by analogy with modern concepts. This lack is not only due to the bad preservation of a-DNA and collagen in hot climates, but also to a long neglected interest in human skeletons. With few exceptions, systematic analyses of mobility patterns and diet are still rare although a huge amount of skeletons has been excavated. Integrating such analyses in investigations on social and ideological concepts of Neolithic communities would offer important new evidence for the reconstruction of corporate identities (see *e.g.* Molleson 2000; Alt *et al.* 2013, 2015; Bickle and Whittle 2013).

The discussions during the workshop made clear that on the one hand single sites cannot be studied in isolation but must be considered within their local and regional networks. Communities engaged

vigorously in extensive networks of exchange and sharing (Watkins 2008). What was the function of these extensive networks of sharing and exchange, how were these exchanges managed and how did they assist the formation of identities in Epipalaeolithic and Neolithic communities?

Furthermore, as mentioned above, multilevel analyses of several domains will be indispensable if we accept *sensu* Gebel (2004) the polycentric development of Neolithic communities and the inter-subjective meaning of symbols. Unveiling contradictions and tensions instead of compressing Neolithic communities into a smart picture of coherent communities seems to be one of the most demanding tasks.

All these questions demonstrate the close interrelationship of all three sessions, their separation being a means to invite participants to think about the theme, and a practical arrangement for the workshop itself.

It may be objected that the notion of *corporate identity* is a modern concept or feature: the editors acknowledge that it is a modern term, but it fits the social behaviour of humans throughout the ages to structure and organize their social, ritual and cognitive lives by forming shared identities in these spheres. The specific character of novel Neolithic identities was relational and corporate, inherited from the hunter-gatherer substratum, before identities became structural, or hierarchic, by the following developments.

At this stage of research on Neolithic corporate identity, we editors felt it impossible to extract shared understanding or views of authors from the contributions in this volume; it is also the reason why we avoided to become more specific in this introduction, beyond the remarks made on socio-neurobiological and evolutionary aspects of the corporate identity topic. Finding out more about the dialectical relationships of the different aspects of Neolithic corporate identities will be one of the most exciting and challenging issues of future Neolithic research, especially when it comes to the relational structures of Neolithic things and humans. Once researchers focus on the corporate in identity formation, the material records will start to reveal new clues on the fundamentally new forms of social and ideological relationships between humans and their various tangible and intangible environments, and their shifting cognitive spheres.

Fig. 2   The plastered skulls of the Middle/Late Pre-Pottery Neolithic B from Aswad, Syria, were one of the most enigmatic means to represent individual and Neolithic corporate identities. (by courtesy Mission El Kowm-Mureybet du Ministère des Affaires étrangères France. Photo: L. Dugué)

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Evolution

Neolithic Corporate Identities in Evolutionary Context

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Abstract: In order to appreciate the enormous changes that are represented by the emergence of large-scale, permanent communities and effective farming economies, we need to take a long-term perspective on the period and set it within the context of the cultural and social evolution of *Homo sapiens*. In order to make sense of those changes, we need to construct an evolutionary account. The process was clearly complex, involving different aspects of biological evolution within a cultural and social revolution; it is also clear that co-evolutionary processes were involved, for example, between cultural factors such as the cultural control of plants and animals, biological factors such as domestication effects on those plants and animals, as well as genetic developments within human populations in consequence of their use of domesticated plants and animals. Here, cultural niche construction theory is recommended as a conceptual framework for modelling these complex, interrelated, co-evolutionary processes within the novel and changing physical, social, cultural and cognitive niches that human communities constructed for themselves.

Keywords: Evolution, cultural niche construction theory, Neolithisation, Southwest Asia

Introduction

The Neolithic of Southwest Asia was a remarkable period, however one looks at it. It saw the emergence (in evolutionary terms, the extraordinarily rapid emergence) of a way of life in large, multi-layered communities living in networks of permanent settlements, which was qualitatively and quantitatively different from all preceding hominin experience. It saw the emergence of farming economies, whose development has been fundamental to all of subsequent human history to the present day. If that is not enough to mark out the Neolithic as remarkable, recent excavations have produced diverse examples of extraordinary monumental architecture and vivid carved symbolism that are as unprecedented as they were unexpected. Those of us who grew up with the idea of the Neolithic as the period of simple village-farming must find new ways to define and understand what the Neolithic represents.

Here, I will argue for a different perspective on the Neolithic from that which has become the standard view. "Neolithisation" is bad for us. I think that we archaeologists who believe in the pivotal importance of the Neolithic of Southwest Asia have taken a too closely focused view of the subject, characterised by defining the processes involved as "Neolithisation", which implies that it is something that occurs in the Neolithic. And we have tended to look backwards from our own time, taking the view that the Neolithic, and specifically the emergence of farming economies, is where our own way of life originated. I will argue that we should (a) take a long-term view of the process that brought our Neolithic into being, and (b) that long-term view should follow the direction of development from the Palaeolithic into the Neolithic. I am by no means the first archaeologist to seek a broad perspective on the subject: Graeme Barker (2006) has taken a global perspective and has sought to take a long-term view of the transition from foraging to farming, and Clive Gamble (2007) has argued persuasively against the archaeologists' tendency to focus on "revolutionary" moments, giving an exemplary critical discussion of

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the "Neolithic Revolution" in particular. I have been much impressed by the "deep history" project of a multi-disciplinary group of scholars under the leadership of Andrew Shryock and Daniel Lord Smail to find ways in which the deep past (from earliest *Homo*) and the recent (modern historical) past can be described and discussed within a single format, overcoming the artificial distinction between history and prehistory (Shryock and Smail 2011; see also Smail 2008). Two eminently original archaeologists, Clive Gamble and Mary Stiner, collaborated in that project, and Gamble has written elsewhere on our, and all anthropologists', need to grapple with the concept of deep history (Gamble 2015). I am here proposing a different route towards the same goal, developing a single format within which the whole of human prehistory can be explored, analysed, and explicated.

That these phenomena are not exclusively Neolithic is obvious; and most Neolithic specialists point to different aspects of the preceding Epipalaeolithic, especially the Natufian of the Southern Levant, for the origins of various Neolithic practices. This attitude, however, does little to help us to understand the processes that were at work through the final Pleistocene and earliest Holocene. We think of ourselves as prehistoric archaeologists with a particular interest and some particular expertise in a period that we claim is pivotal in human history. And those of us who work in the period in Southwest Asia are fortunate indeed, in that it is the region where this pivotal transformation has been subjected to the most multi-disciplinary research for more than sixty years. It is time for us to reconsider our perspective in setting out our narratives of this period. In order to show that the Neolithic embodied a transformation that was pivotal in human history, we need to take a holistic, long-term, and evolutionary perspective, showing how earlier prehistory led to this pivotal moment. It is not enough to look back over our shoulders to note this or that trait in the Late Epipalaeolithic that pre-figures something in the Neolithic. Rather, we need to take a long-term view that allows us to see developments from at least the cultural status of *Homo sapiens* at 100,000 years ago, through the Upper Palaeolithic, the Epipalaeolithic, and into the Neolithic.

It is also necessary for us to expand our perspective in another dimension. It is not enough to focus on the relationship between changes in subsistence strategy and changes in climate and environment. Rather, we should acknowledge that the process of human prehistory is a complex web in which social, economic, and cultural factors are closely inter-twined, inter-active, and inter-dependent. Whatever the area of our special expertise, we should be thinking how that fits into and informs the greater interest.

I contend that our perspective on the processes that lead to and through the early Holocene should be evolutionary. History consists in more than the simple description of change through time. It is a necessary first stage to reconstruct what things were like at one time, and what they were like and how they were different at the following time; history, or prehistory, consists in the analysis of that cultural sequence, the extraction of the characteristics that define the nature of the processes of change, and the development of an explanatory account of those processes. It is a long time since Darwin first proposed a theory of the evolution of biological species, closely followed by the first attempt to apply his theory to the human social or cultural worlds by his disciple and protégé, Sir John Lubbock (1865). Recent developments in evolutionary theory (*e.g.* Menary 2010; Sterelny 2011), and the diversification of evolutionary theory (Laland *et al.* 2015), offer us new and exciting prospects. As well as the slow, long-term, genetically-determined biological evolution of the hominins, there are now evolutionary frameworks for examining and explicating social and cultural human evolution that can be used within the life-time of our species, *Homo sapiens*. The most inviting and exciting evolutionary framework, it seems to me, is cultural niche construction theory, the specifically human cultural variant of niche construction theory (see below); but first, a few words on the evolutionary context of the Palaeolithic at the end of the Pleistocene and the Neolithic at the beginning of the Holocene.

Final Pleistocene – Earliest Holocene: Increasingly Rapid Evolutionary Changes

For scientists working on human evolution and Palaeolithic specialists, the most remarkable development of the Pleistocene-Holocene transition is probably the "sudden" appearance of a totally new social form, the large-scale, permanently co-resident communities that created the substantial settlements of the Neolithic. To us, who were born into societies that have lived in large-scale, permanent settlements for thousands of years, Neolithic settlements are somehow familiar and unremarkable, by contrast with Palaeolithic cave-sites, rock-shelters and flint scatters. To those who study human evolution in "deep time", and to Palaeolithic specialists for whom flint scatters and rock shelters are their idea of "normal", our early Neolithic settlement sites seem to explode from nowhere, and relate to nothing in their archaeological experience. So, there are very big questions. Why, in the last ten, twenty or fifty millennia of the Pleistocene in Southwest Asia did mobile forager bands set about creating new social worlds that

were so different in scale and kind from anything that previous humans had lived in? How did these new communities construct the strong corporate identities that were essential if people were to be able to cooperate together with many people whom they could not know well enough to trust? What changes in social and cultural ways of life were necessary, and how were they evolved? And what other changes followed as unintended consequences of the emergence of large-scale, permanent communities?

I believe that there are two challenges for those with special knowledge of the Epipalaeolithic and Neolithic in Southwest Asia if we are to carry the evolutionary story from the stage at which most evolutionary scientists conclude their accounts, that is, from the status of *Homo sapiens* at around forty thousand years ago. Firstly, can we explain to our Palaeolithic colleagues the evolutionary trajectory that brought about the complex and labour-intensive innovations in subsistence strategy, the extraordinary settlements of the Neolithic, the unprecedented scale of the new permanent communities, and their equally unprecedented and extraordinary symbolic architecture, sculpture, and ceremonial practices? If we can do that, we shall be laying the groundwork that can support an evolutionary account of the emergence of inequality, hierarchically organised societies, urban landscapes, kingdoms and empires.

Perhaps a greater challenge is the articulation of our knowledge of the Epipalaeolithic and Neolithic in evolutionary terms. Archaeologists have a long history of scepticism regarding the application of evolutionary theory to prehistory, stretching all the way back to the late nineteenth century attempts to apply Darwinian theory to underpin rather naïve, and then dangerous, ideas of "social evolution", "survival of the fittest", eugenics and racism. For much of the twentieth century, investigations of "human evolution" have been concerned with the biological changes within the hominins, such as the upright stance and bipedal walking, and the great increase in brain size. For many years now, evolutionary scientists have been linking some of the physical-biological components with the evolution of human social and cognitive skills. The most notable example is the work of Robin Dunbar and his colleagues; Dunbar has become firmly linked with "the social brain hypothesis", in which the growth of the human brain, and more particularly the expansion of the frontal neo-cortex, is linked to the cognitive demands of the increase in the scale of human social groups and their social interconnectedness (Dunbar 1997, 1998; Dunbar *et al.* 2010; Gamble *et al.* 2014). Others have worked on aspects of the evolution of the human brain in terms of the cognitive skills implied by the production and use of stone tools (*e.g.* Stout and Chaminade 2009; Haidle 2011; Stout 2011; Lombard and Haidle 2012). Such studies relate archaeological material to biological, cognitive and cultural evolution, and they should encourage us to develop their ideas into the more recent millennia.

Cultural Niche Construction Theory as a Useful Conceptual Framework

For many archaeologists, however, the idea of cultural evolution probably remains problematical: how can culture be fitted into an evolutionary theoretical framework? And the volume of scientific publication on evolutionary subjects has increased to a flood over recent years, mirrored by the frequency with which popular science books on aspects of evolutionary, especially human evolutionary, subjects have been published. It is not a simple task to identify the present status of evolutionary theory, and then to see how the archaeology of the Neolithic transformation may be explicated in its terms. If it is any comfort, evolutionary scientists and philosophers, too, have found the expansion and diversification of the subject difficult to deal with; a group of them recently collaborated in the writing of an attempt at a synthesis of recent extensions of evolutionary theory (Laland *et al.* 2015).

Prehistoric archaeologists may be described as cultural anthropologists of prehistory, and, as far as we are concerned, there is a particular area of development in evolutionary theory that is specially suitable to our needs: cultural niche construction theory is the application of niche construction theory in the context of human cultural behaviour and practice. Where evolutionary scientists and cultural theorists have taken the lead in developing the theory, we archaeologists, as specialists in material culture, have a unique expertise to contribute to the testing and application of these ideas.

"Niche construction is the process whereby organisms, through their activities and choices, modify their own and each other's niches. By transforming natural-selection pressures, niche construction generates feedback in evolution at various different levels" (Laland and O'Brien 2011: 191). Humans are the most conspicuous niche-constructors, forming their own environmental niche in many different cultural ways; that environmental niche becomes – indeed, is designed to be – the formative cultural environment within which the next generation is nurtured and helped to acquire their cultural inheritance (Laland *et al.* 1999; Odling-Smee *et al.* 2003). At one level, hominins constructed physical niches, such as the use of caves and rock-shelters for protection, fires for warmth, for cooking, and night-time security

from predators, and clothing for weather protection, and tools for hunting and generally exploiting their environments. At another level, hominins have constructed social niches with norms of behaviour and institutions that enable social group cooperation and cohesion. And at a third level, they have constructed social, cultural and cognitive niches that assure the maintenance of very large, complex, and diverse bodies of cultural knowledge and their transmission across generations by means of learning and tutoring environments for the young (Sterelny 2011). Perhaps the most important characteristic of cultural niche construction theory is that it conceives of the niche as a series of inter-linked components that interact with one another in feedback loops; thus, gene-culture co-evolution involves biological components evolving in interaction with cultural components (for the complex pathway that links yam cultivation in West Africa to the emergence of sickle cell anaemia, see, for example, Laland *et al.* 2010: Box 4).

Since evolutionary theory has been the concern of biological scientists, it is not surprising that much of the initial interest in cultural niche construction was concerned with the co-evolution of a cultural package (domestication and management of animals or plants) and biological phenomena (for example, lactase tolerance among populations that became dependent on milk consumption, or an enhanced facility to digest starches among cereal cultivators) (*e.g.* Smith 2007, 2011a, 2011b, 2016; O'Brien and Laland 2012; Zeder 2012, 2016; Laland *et al.* 2016). But human cultural niche construction goes further than that. The high-profile scientist Steven Pinker, for example, who combines linguistics, cognitive science, and evolutionary psychology, has written about the co-evolution of intelligence and sociality, within the "cognitive niche" of language (Pinker 2010); in a similar way, Robert Aunger has examined how human communication constitutes a cognitive niche (Aunger 2009). Laland and O'Brien remark that "Human niche construction, through modification of the environment, creates artifacts and other ecologically inherited resources that not only act as sources of biological selection on human genes . . . but also facilitate learning and mediate cultural traditions" (Laland and O'Brien 2011: 197).

The work of Kim Sterelny, a philosopher who works on evolutionary theory and human evolution, gives us a very helpful guide to the long-term evolution of the human cultural niche (Sterelny 2011). Sterelny shows how humans in their cultural niches have evolved uniquely powerful means of sustaining, accumulating and transmitting very large and very complex bodies of cultural knowledge. Niche construction can be described as ecological engineering that produces an ecological inheritance: Sterelny shows how human cognitive competence often depends on epistemic engineering that can generate the cultural inheritance. *Homo sapiens*, if not earlier human species, have devised ways of organizing our physical environment so as to enhance our information processing capacities.

Dunbar's social brain hypothesis (Dunbar 1997, 1998; Dunbar *et al.* 2010) argues that the direction of hominin evolution has been towards larger and more cohesive social groups. Over the long term of human evolution, human social units have grown in scale, while living in human social units has required resolving challenges for human cognitive faculties in order to cope with the exponential increase in the complexity of social relations. There is a growing body of evidence that larger social groups are better able both to sustain a complex cultural heritage and to innovate and incorporate innovations (*e.g.* Shennan 2001; Henrich 2004; Powell *et al.* 2009; Kline and Boyd 2010). Joseph Henrich, who works in anthropology, economics, and evolutionary psychology, has recently published a summation of two decades of research on the human facility for cumulative culture (Henrich 2015). The central thesis of his book is that "cultural evolution became the *primary driver of our species' genetic evolution*" (Henrich 2015: 57, his italics). Henrich argues from experimental evidence from the laboratory, and from analysis of ethnographic data that the key features of human cultural and social evolution have been to ensure that there are sufficient numbers in the population, with maximum interconnectedness: the larger and more complex the body of cultural knowledge, ideas, and behaviours, the greater the scale of population that is required to support it, and the greater the need for intensive sociality and social interaction within that population unit. The eminent developmental and comparative psychologist Michael Tomasello argues similarly for the uniqueness of the human evolved capacity for shared intentionality and cooperation (Tomasello 2009, 2014). He defines how these capacities have operated within a framework of cultural niche construction and gene-culture co-evolution that enables processes of cumulative culture in increasingly larger and more complex social groups.

Tomasello, Henrich and Sterelny provide a general cultural niche construction outline (although Henrich does not specifically describe it as such), and offer detailed support for their arguments that the scale of population units and the interconnectedness of their members are critically important features. They also describe ethnographic evidence for the kinds of behaviours, norms, and institutions found in communities that our Neolithic communities must at least in some regards resemble; thus, there are plenty of leads that archaeologists might attempt to follow in relating these descriptors to actual archaeological information.

In short, the cultural niche that modern (*i.e.* from at least 50,000 years ago) *Homo sapiens* has evolved is essentially different from that of earlier humans in terms of its social scale and cultural complexity. Larger populations whose individuals are socially highly interconnected with one another can sustain and develop a more complex and extensive cultural inheritance, at a cost of the greater investment in emotional, material and symbolic effort necessary to sustain the social and cultural bonds among greater numbers of people. Kim Sterelny and I have attempted to indicate how the cultural niche evolutionary narrative can be extended beyond the Pleistocene to explain the Neolithic of Southwest Asia (Sterelny and Watkins 2015; see also Watkins 2016). Modern *Homo sapiens* had evolved a highly sophisticated and effective socio-cultural niche at least 50,000 years ago. But the relatively small-scale societies of that time, networks of scattered, small, mobile forager bands, were hugely transformed in scale by the beginning of the Neolithic period, and thus were capable of sustaining and transmitting even larger and more complex cultural heritages by means of their increased scale and modes of intense interconnectedness. Populations of many thousands, living in permanent settlements of several hundred, needed the cultural means to share a collective identity and to express their corporate identity. This expansion in the scale of the cultural-cognitive niche came at a further cost; the demands of forming such extensive networks of large-scale, permanent communities were paid in terms of new and expensive modes of corporate identity formation. Hence, in the Neolithic, we find large, permanently co-resident communities participating in local, regional and supra-regional networks of sharing and exchange (Watkins 2008, in prep.). The new forms of expensive investment in material culture, including monumental architecture and highly symbolic sculptures, and no doubt in rituals, ceremonies, and feasting that brought people together in sharing experiences, I have argued, constituted the essential investment in representing and making actual their shared corporate identities as very large social groups.

Discussion

Since this chapter originated as one of the introductory papers at the original workshop, it serves only to introduce its theme; on those grounds, I excuse myself from the (book-length) task of working out the processes within the cultural niche framework that brought about the Neolithic transformation. Indeed, within Southwest Asia it is only in the Southern Levant that there is perhaps something approaching sufficient information on the Epipalaeolithic period to allow us to begin to discern the step-by-step changes in the cultural niche that would lead us into the Neolithic. Information for the Epipalaeolithic is heavily biased towards the Natufian in the last three millennia of that period. However, we are now beginning to learn more of the early Epipalaeolithic, and of the social and exchange dynamics of the period (Richter *et al.* 2011, 2013; Maher *et al.* 2012, 2014; Richter and Maher 2013). However, the site of Ohalo II, which dates to the Upper Palaeolithic-Epipalaeolithic boundary, shows us clearly that the social, cultural and economic transformation processes were already well under way; from the very beginning of the Epipalaeolithic, groups in the Southern Levant were evolving a form of cultural niche that was different from that of the classic Upper Palaeolithic mobile forager band societies.

Progress in the investigation and understanding of the Neolithic is made at different levels and in many different ways: some archaeologists are concerned with a particular site, while there may be a considerable range of different specialists each working in different ways on particular aspects of the assemblage from that site, or a group of sites. We also need syntheses at a variety of levels, syntheses that bring together all the work about a single site, syntheses that develop a higher level view of the chipped stone tool technologies across a region or a period, syntheses that outline the process of plant domestication, and so on. But we also need top-level syntheses that seek to develop a single narrative view of the Neolithic transformational process. My purpose has been to argue that such a high-level synthesis needs to see the Neolithic in the context of a wider chronological perspective; if the synthesis is to be more than a summary of what is known, placed in chronological order, it needs to explain the processes at work, and it needs some kind of evolutionary rationale. I believe that now we have an emerging view among evolutionary biologists, evolutionary psychologists, palaeo-anthropologists and Palaeolithic archaeologists that cultural niche construction theory provides an effective framework for unravelling the co-evolutionary feedback loops in human cultural evolution. Until now, progress in linking the long-term story of human cultural evolution beyond the Pleistocene and into the Holocene has been left to pioneers from the Palaeolithic, seeking to push the frontier of their evolutionary accounts forward beyond the later Middle Stone Age of Africa or the classic Upper Palaeolithic of Europe into the very different world of the Holocene (*e.g.* Coward and Dunbar 2014; Gamble *et al.* 2014). Key to understanding the nature of the Neolithic transformation is the recognition that the new, large, permanent communities of

the Holocene needed powerful new ways of constructing "corporate identity". They were creating for themselves communities that operated at different levels, on a larger scale and of more complex and challenging form than had ever existed before. The scale of population implied by the large, permanent Neolithic settlements would have required some forms of internal social structuring; and the intensity of the social and cultural networking among settled communities on a regional scale signifies the importance of building and sustaining "corporate identities" that held together many thousands, or tens of thousands of people spread over wide geographical areas.

If we believe that the Neolithic was a pivotal period (whether we continue to use the label "Neolithic Revolution", or avoid it), we need to be able to show how the mobile forager bands of the Palaeolithic transformed their cultural niche into the very different and unprecedented form that we recognize at the beginning of the Neolithic. I have suggested that cultural niche construction theory offers us a pathway for achieving that. But, as Neolithic specialists know very well, the evolutionary story does not conclude with the opening of the Holocene and the formal beginning of the Neolithic: Neolithic communities continued to transform themselves, their cultural niche, their subsistence strategies, and their modes of forming corporate identity throughout the several millennia of the Neolithic period, and beyond. The conceptual framework of cultural niche construction theory can enable us to work on a somewhat different timescale to define the complex co-evolutionary processes at work within the Neolithic period, processes that transformed the nature of the corporate identities of Neolithic communities. Even greater changes in the nature of the corporate identities of communities followed after the end of the Neolithic period, leading to the emergence of the first urban societies at the centres of quite different social and economic landscapes. Again, if we consider our Neolithic period to be pivotal in human history, we should be willing to explain how new levels of social and cultural complexity comprised a new, larger and more powerful form of cultural niche, and how the new social forms of the Neolithic, the novel, large permanent communities, with their new and powerful modes of creating corporate identities, laid the foundations on which later and larger societies, with quite different forms of corporate identity, were built.

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Human Palaeoecology in Southwest Asia During the Early Pre-Pottery Neolithic (*c.* 9700-8500 cal BC): the Plant Story

Eleni Asouti[1]

"According to the materialist conception of history, the ultimately determining element in history is the production and reproduction of real life ... We make our history ourselves, but, in the first place, under very definite assumptions and conditions. Among these the economic ones are ultimately decisive. But the political ones, etc., and indeed even the traditions which haunt human minds also play a part ... In the second place, however, history is made in such a way that the final result always arises from conflicts between many individual wills, of which each in turn has been made what it is by a host of particular conditions of life. Thus there are innumerable intersecting forces, an infinite series of parallelograms of forces, which give rise to one resultant - the historical event. This may again itself be viewed as the product of a power [that] works as a whole unconsciously and without volition. For what each individual wills is obstructed by everyone else, and what emerges is something that no one willed."

Letter of F. Engels to J. Bloch (London, September 21, 1890)

Abstract: This chapter tackles one of the most enduring questions posed by prehistoric archaeology worldwide attracting the interest of prehistorians, anthropologists, economists, geographers and natural scientists alike: how and why did late Palaeolithic societies abandon long-lived and highly successful foraging and hunting economies in order to adopt farming? The chapter provides a critical overview of how this transformation unfolded in Southwest Asia, the place of origin for some of the economically most important contemporary plant and animal food staples, at the very end of the Pleistocene and the beginning of the Holocene some 12,000 years ago. It focuses in particular on the nature of plant management practices during this period and how they were intertwined with changes in climate and vegetation, seasonality patterns, local micro-ecological variability, people's historical experiences and perceptions of the landscape, mobility strategies, community interactions, and associated symbolic and ritual behaviours. Some of the currently accepted notions about the nature, ecology and economic returns of predomestication cultivation, the causes and evolution of the morphological domestication syndrome in crop progenitor species, and the predicted impacts of climate and environmental change on economic decision-making are critically reviewed and revisited. The chapter concludes by discussing some of the implications of the Southwest Asian case study for understanding the nature and evolution of prehistoric human economic behaviours, and the central role that resource ecologies play in determining the directionality and pace of macroeconomic change.

Keywords: Southwest Asia, Neolithic, domestication, climate change, niche construction theory

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Introduction: Setting the Issues

This chapter provides a critical overview and reassessment of the nature and palaeoecology of the Pre-Pottery Neolithic (PPN) subsistence economies of Southwest Asia, one of the most intensively researched hotspots of the transition from foraging to farming worldwide (Barker 2006). It focuses on the earliest part of the Neolithic transformation, the first two millennia of the Holocene. This timespan between the end of the Younger Dryas at ~11,700 cal BP and 10,500 cal BP, broadly overlaps with the chrono-cultural horizon identified as the early PPN (Asouti and Fuller 2013; see also Table 1, Fig. 1). In palaeoeconomic terms, the early PPN witnessed the onset of various pre-agricultural plant and animal management practices collectively categorized as "low-level food production" (*cf.* Smith 2001; Asouti and Fuller 2013; Zeder 2015). "Pre-domestication cultivation" (PDC) conventionally defined as the planting and harvesting of morphologically wild crop progenitor species (Willcox 2013; Willcox *et al.* 2008) is considered a typical manifestation of this mode of production in Southwest Asia, and is believed to have developed independently across the different areas of the Fertile Crescent alongside a diverse array of foraging and hunting strategies. In sociocultural terms, the early PPN is marked by the florescence of symbolic and ritual behaviours associated with corporate social groups (*e.g.* lineages, sodalities, age groups, networks) which are believed to be reflected in the communal structures unearthed at several sites in both the southern and the northern Fertile Crescent including Göbekli Tepe, Gusir Höyük, Mureybet, Jerf el Ahmar, Tell 'Abr, Tell Qaramel, WF16, Tell es Sultan (Jericho) and elsewhere (*cf.* Kenyon 1981; Stordeur *et al.* 2000; Mazurowski and Yartah 2002; Yartah 2005; Schmidt 2007, 2010, 2012; Stordeur and Ibáñez 2008; Kuijt and Finlayson 2009; Finlayson *et al.* 2011; Karul 2011). Concentrations of material culture of a distinctive symbolic nature (*e.g.* animal, human and humanoid reliefs and sculptures, pillars, bucrania and other animal bone installations, skulls, engraved stones and other artefact caches, *etc.*) and burials are often found associated with such structures. For this reason, they have been interpreted by several scholars as foci of symbolically and/or ritually charged activities such as communal food storage and consumption, mortuary and feasting rites, and as aggregation sites (see chapters in this volume; also Watkins 2010; Finlayson *et al.* 2011; Dietrich *et al.* 2012; Asouti and Fuller 2013).

The ubiquity of communal buildings across the different regions of the Fertile Crescent alongside the material record of regionally distinctive symbolic and ritual behaviours, are treated by some scholars as indicators of increasing social complexity in the course of the early PPN (*cf.* Byrd 2005; Watkins 2010). Inasmuch as the ecological context of these socioeconomic developments and symbolic

Fig. 1   Map showing the location of key excavated early PPN sites in Southwest Asia.

florescence is taken into consideration it has also been hypothesized that they were facilitated by the rapid climatic improvement that marked the start of the Holocene (Byrd 2005). Early Holocene climatic amelioration is believed to have prompted the emergence of highly productive and stable resource environments. This facilitated the intensification of resource use by groups that lived permanently in favourable ecotones and controlled stable, well-defined territories (Zeder 2015). Overall, the current consensus in the literature is that this unprecedented mix of ecological, socioeconomic and cultural developments paved the way for the appearance at the end of the early PPN of plant and animal domestication, which was followed by the establishment and spread of agro-pastoral economies and "village" life during the late PPN (*i.e.*, from the second half of the 9th millennium cal BC onwards) (see overviews by Harris 2002; Byrd 2005; Zeder 2008, 2015; Asouti and Fuller 2012, 2013).

Much of the ecological argument invoked in support of early PPN resource intensification and its relation to increasing sedentism, symbolic behaviours and social complexity and the emergence of regionally distinctive corporate institutions and identities, has been based on the conceptualization of the first two millennia of the Holocene as a period of remarkable climatic and ecological stability, which radically transformed the nature and scale of the regional hunter-gatherer landscape practices. This is contradistinguished with the pattern of punctuated climatic instability that prevailed during the late Pleistocene, which is believed to have inhibited the macroevolutionary development of the ecological and socioeconomic processes associated with the transition to food production (Richerson *et al.* 2001). The notion of the importance of resource-rich environments in the formation of food producing economies is of course not new in the prehistoric archaeology of Southwest Asia. Similar ideas were tested for the first time in the 1940s and 1950s by Robert and Linda Braidwood of the Chicago Oriental Institute, in the context of their fieldwork expeditions in northern Iraq. The "Nuclear Zone Hypothesis" (NZH) (Braidwood and Howe 1960) postulated that post-Pleistocene hunter-gatherers gradually settled in resource-rich areas where they developed close, symbiotic relationships with preferred plant and animal resources alongside processing and storage technologies that eventually led to their domestication and the emergence of agriculture. The NZH represents in many ways the archaeological offshoot of the much earlier theory of the "centres of origin" formulated by the Russian plant geneticist Nikolai Vavilov, who proposed that present-day hotspots of genetic crop diversity overlap geographically with the ancient centres of origin of the domesticated crop species (Vavilov 1992). In Southwest Asia the "hilly flanks" (*i.e.*, the piedmont zone) of the Taurus-Zagros arc were subsequently identified by Harlan and Zohary (1966) as the primary habitats and centres of origin of the Near Eastern crop progenitor species, which overlapped with Braidwood and Howe's (1960) "nuclear zone" of initial domestication.

The NZH represents a classic example of a pull theory, based on the notion that resource abundance (the "pull" factor) is a key precondition of economic, technological, and sociocultural innovation and progress. As such, it stands in direct opposition to "push" theories positing that resource stress (instead of abundance) played a central role in prehistoric socioeconomic change. Resource-stress theories first became popular by Gordon Vere Childe. His "Oasis Hypothesis" (inspired by a similar theory proposed in 1908 by the American geologist Raphael Pumpelly) posited that climate desiccation at the end of the Pleistocene forced the crowding of humans, plants and animals around shrinking water bodies

Late Pleistocene-Early Holocene chrono-cultural horizons in Southwest Asia	Dates (calibrated years BC)
Late Epipalaeolithic	~12,000-10,000
Pre-Pottery Neolithic A (PPNA)	~ 10,000/9700-8700
Early PPNB (EPPNB)	~8700-8200
Middle PPNB (MPPNB)	~8200-7500
Late PPNB (LPPNB)	~7500-7000
Pottery Neolithic	~7000-6000
Chalcolithic	~6000-4000

Table 1   Summary of prehistoric chrono-cultural horizons and associated radiocarbon chronologies in Southwest Asia.

("oases") eventually leading to the development of symbiotic, domesticatory relationships (Childe 1928). Later examples of push theories focused primarily on demographics (in particular population pressure) as the cause of resource depletion and stress rather than negative climate change, including Lewis Binford's (1968) "Marginal Zone Hypothesis" and, in relation to it, Kent Flannery's (1969) "Broad Spectrum Revolution". Both pull and push models of the probable causes of the Neolithic transformation represent the intellectual backbone of several influential theories of global agricultural origins including David Rindos' Coevolution Theory (1984), hypotheses about the role of the Younger Dryas cold and arid spell in the onset of early cereal cultivation and domestication (Moore and Hillman 1992; Sherratt 1997; Hillman *et al.* 2001; Bar-Yosef and Belfer-Cohen 2002) and, more recently, Optimal Foraging Theory (OFT) (Kennett and Winterhalder 2006; Gremillion *et al.* 2014) and Niche Construction Theory (NCT) (Smith 2011, 2015; Zeder 2015). OFT and NCT are also based on the same fundamental opposition between conditions of resource stress (OFT) and resource abundance (NCT) as the prime enablers of prehistoric economic behaviours and decision-making.

The main theoretical position developed in this chapter is that both pull and push models provide binary and normative definitions and predictions of resource availability, properties and ecologies that are unrealistically removed from human experience. This is because they draw on abstract concepts of environmental stability and instability that are respectively equated with macro-climatic improvement and deterioration. They thus provide limited tools for understanding periods of human history during which dynamic, multi-scalar, complex processes of change were manifest in all domains of life, ecological and sociocultural, and in the environment. The early PPN of Southwest Asia represents a prime example of such a period, for which there are furthermore no viable ecological and socioeconomic analogues in the historical and the ethnographic present (Asouti 2013). As it will be demonstrated later in this chapter, despite the dramatic climatic improvement that marked the onset of the Holocene, its first two millennia were an era of profound short- to medium-term ecological instability that was particularly pronounced in the semi-arid, continental interiors of Southwest Asia, and impacted significantly the distribution and predictability of landscape resources. Therefore, a more realistic reconstruction of early PPN human palaeoecology requires a more dynamic standpoint, one that takes into account the regional bioclimatic and ecological diversity, and the complexity and dynamics of the interactions between climate, resources and economic behaviours. Moreover, in the diverse and rapidly changing environments of early PPN Southwest Asia economic behaviours did not depend solely or even primarily on expediency, but also on historical landscape experiences and memories of past events, which informed socialized forms of environmental knowledge transmission.

Based on these premises, this chapter proposes an explicitly historical-ecological approach focusing on understanding the ecological impacts of short- to medium scale climate oscillations (centennial, decadal), the seasonality of critical variables (precipitation, temperature), how they affected the balance of woodland and grassland vegetation, fire frequency and herbivory, and their cumulative impacts on resource distributions, ecology, physiology and phenotypes. Such a survey of the regional ecologies (rather than the traditional format of palaeoecological investigations in Southwest Asia concentrating on millennial-scale environmental change) reveals a picture of rich, yet fragmentary and seasonally unstable resource environments and highly fluctuating resource ceilings. It is argued that these ecological constraints severely limited the capacity of PDC to generate sufficient and predictable enough subsistence yields, and therefore the ability of early PPN hunter-gatherer societies to depend on it as the staple subsistence provider. Meso- to micro-ecological instability, experienced in the context of the resource-rich environments of the first two millennia of the Holocene, also provided early PPN societies with the impetus for developing locally distinctive resilience strategies. These included flexible economic behaviours alongside social practices that fostered inter- and intra-group cooperation through the acquisition, storage, and transmission of environmental and landscape knowledge, and the circulation of material culture and foodstuffs through community interaction networks. Furthermore, the material culture record provides evidence for the prominent role of historical experiences of environmental change in early PPN symbolic behaviours and cosmologies.

A cornerstone of the arguments presented in this chapter relates to the reconstructed impacts of short- to medium-term climatic instability on the ecology, productivity and predictability of crop progenitor species and associated economic behaviours. With notable exceptions (*e.g.* Hillman 1996) the landscape ecology of plant gathering and early cultivation is an issue that has been mostly overlooked by archaeobotanical studies of PDC and the regional evolution of the domestication syndrome. More often than not plant domestication in Southwest Asia is approached from a narrowly defined biological viewpoint, in isolation from its wider ecological and sociocultural contexts. However, these contexts provide an appropriately inclusive framework for understanding the nature and limitations of early PPN

plant management practices and, by extension, the underlying causes of the slow pace of morphological domestication observed during this period (see discussion in Asouti and Fuller 2013). This argument is developed further in this chapter, by drawing on previously overlooked aspects of the regional palaeoecological and archaeobotanical records. It is proposed that early Holocene climate change and associated vegetation ecologies (rather than the intensification of PDC by early PPN hunter-gatherer communities) played a significant role in the development of larger seed size in cereal crop progenitor species. The archaeobotanical and ecological indicators traditionally associated with the identification of PDC are also reviewed in detail, in order to provide a more realistic reconstruction of its nature and predicted ecological impacts and economic returns. Furthermore, drawing on recent genetic studies, it is argued that community interactions (rather than the polycentric development of PDC by insular sedentary communities) played a pivotal role in the regional spread of socially valued cultivars that gave rise to domesticated crop species during the late PPN.

The agronomic limitations of PDC were not overcome until the late PPN (*i.e.*, after the mid-9th millennium cal BC) in a process that overlapped temporally and spatially with the spread of domesticated caprine herding. It is proposed that the use of animal manure as fertiliser was the tipping point, by enabling the development of fixed-plot intensive horticulture and boosting the productivity of cereal and pulse cultivation while also buffering it against seasonal environmental risks. The herding of domesticated caprines altered irreversibly the ecological balance of Southwest Asia through the conversion of steppe grasslands into pastures. It is argued that it was these direction-changing developments in the nature, technology and organization of food production, rather than the putative impacts of PDC on the biology of managed plant species, that enabled the spread of domesticated crop mixtures and anthropogenic agroecologies and the establishment of long-lived, sedentary "village" communities dependent on mixed agropastoral production as the staple subsistence provider. The chapter concludes by outlining a historical-evolutionary model for the comparative study of global agricultural origins and, more generally, human economic behaviours during periods of major ecological and socioeconomic change. This emphasises the need to construct hypotheses that address the interconnectedness of geographically and historically contingent resource ecologies with the multi-layered ecological, economic and sociocultural factors that constitute human lifeways.

Climate Change and the Relationship of Resource Ecologies to Resource Choice in Late Pleistocene and Early Holocene Southwest Asia

Global palaeoclimatic archives derived from marine sediments and polar ice cores have established the existence of large-scale shifts in global climate (*e.g.* glacial-interglacial climate cycles) caused by the interaction of the Milankovitch cycles: periodic variations in the Earth's eccentricity, axial tilt and precession (lasting ~100 kya, 41 kya and 19 kya respectively) that impact the amount, seasonality and location of solar insolation around the planet at supra-millennial time scales (Hays *et al.* 1976; Wunsch 2004). The last Ice Age was paced by shorter-scale climate oscillations, known as the Dansgaard-Oeschger (DO) events, occurring in cycles of ~1500 years: in the northern hemisphere these took the form of decadal-scale warming episodes, followed by gradual cooling over a longer period of time that was then terminated by another decadal-scale cold and arid episode (Dansgaard *et al.* 1993; Bond *et al.* 1997; Alley 2000). Some of the DO cycles were preceded by rapid cold episodes known as the Heinrich (H) events that lasted ~1000 years and resulted from the release of ice raft debris in the North Atlantic (Bond *et al.* 1992; Bond and Loti 1995) (see also Fig. 2). Some researchers identify the Younger Dryas (dated in the ice core records at ~12,900-11,500 cal BP) as the last Heinrich event (H0) of the Pleistocene, while others attribute its rapid onset to the release of large amounts of glacial meltwater from North America (*cf.* Bond and Loti 1995; Broecker 1998). Typically, the end of the Younger Dryas is identified through abrupt increases in temperature and precipitation that marked the onset of the Holocene (Alley *et al.* 1993; Severinghaus *et al.* 1998). This improving trend was reversed at ~11,400 cal BP by a cold episode known as the Pre-Boreal Oscillation (PBO) that lasted ~200 years and was terminated by another decadal-scale warming at ~11,270 cal BP (Bjork *et al.* 1997; Kobashi *et al.* 2008). Reconstructions of surface temperatures have indicated that temperatures after the PBO were warmer than before it, which has led some authors to hypothesize that this phenomenon may be consistent with observations of a two-step warming at the onset of the Holocene (Seppä *et al.* 2002; Kobashi *et al.* 2008). After ~11,200 cal BP Holocene climate was characterized by remarkable, by comparison to earlier periods, stability; climatic conditions reached an optimum by ~9000 cal BP. During this period, the most notable change in northern hemisphere climate was in temperature seasonality. Annual mean changes in surface air temperature
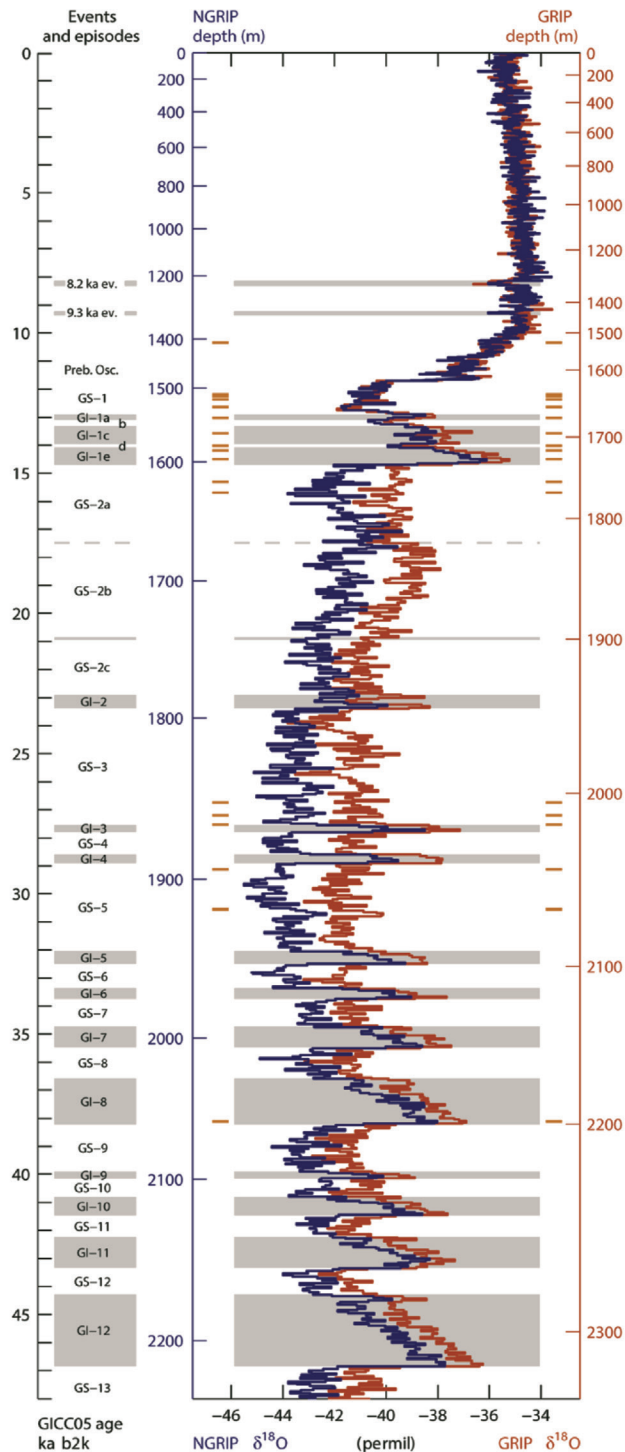
Fig. 2   INTIMATE Project stratigraphy of Greenland Stadial/ Interstadial (GS/GI) cycles for the last 48 kyr BP (before 2000 AD) based on the Greenland ice core records and GICC05 ice core chronology (modified after Blockley *et al.* 2012: Fig. 1).

were of lower amplitude than seasonal changes: between ~12,000-8000 cal BP winters were cooler and summers warmer than today, with the maximum winter-summer difference observed around 9000 cal BP (Brayshaw *et al.* 2011).

In Southwest Asia, the Younger Dryas has been identified as a period of intensely cold and arid conditions. Jones *et al.* (2007) have calculated from lake oxygen isotope records that precipitation and temperature were lower by comparison to the late Holocene (see also Bar-Matthews *et al.* 1997; Table 2). This general precipitation pattern appears to have been consistent between Anatolia and the Levant although, as expected, regional N-S and E-W gradients are also evidenced in the available records: the Soreq cave speleothems in the southern Levant record higher values than the Eski Acıgöl crater lake in central Anatolia, and the latter higher values than lake Van in eastern Anatolia. Terrestrial pollen records match closely these regional precipitation gradients: in the Hula basin catchment (situated in the Mediterranean Woodland Zone of the Levantine littoral) oak pollen values dropped from ~70% during the warm and wet Bølling-Allerød interstadial to ~30% during the Younger Dryas stadial, while at the same time grass pollen values *increased* to 30% (Baruch and Bottema 1999; Bottema 2002; Wright and Thorpe 2003) (Fig. 3). This pattern of vegetation response suggests that in the wetter (by comparison to inland Southwest Asia) Levantine littoral, grasses were able to compete more effectively with trees for finite ground moisture resources under the cold and arid conditions of the Younger Dryas. Further north, in the Syrian Ghab valley catchment its re-dated pollen sequence points to a more pronounced decline of oaks during this period, and the coeval expansion of *Artemisia*-Chenopodiaceae steppe instead of grasses (Niklewski and Van Zeist 1970; Wright and Thorpe 2003). Similarly, in the more continental inland regions of central and eastern Anatolia the Younger Dryas was marked by the retreat of grasslands and the expansion of *Artemisia*-Chenopodiaceae steppe (Roberts *et al.* 2001; Woldring and Bottema 2002/2003; Wick *et al.* 2003). The combined pollen and anthracological data also indicate that, in contrast to the western Levantine littoral, trees never formed a significant component of the vegetation of inner Anatolia during the warm and wet conditions of the Bølling-Allerød. Instead, grassland vegetation (including Cerealia) prevailed associated with a sparse, low-density tree cover (dominated by members of the Rosaceae family, *Pistacia*, with low representation of *Juniperus* and

Dates cal BP	Key climatostratigraphic subdivisions	INTIMATE Project nomenclature for Greenland Stadial – Interstadial cycles (GS/GI)	General climate trends in Southwest Asia
21,200-14,700	Last Glacial	GS-2	Cold, arid (low precipitation and evaporation)
14,700-12,650	Bølling-Allerød interstadial	GI-1	Warm and wet (increasing temperatures [14.5-18.0°C] and precipitation [~550-750 mm p.a.])
12,650-11,500	Younger Dryas stadial	GS-1	Cold, arid (low precipitation and temperature)
11,500-8,200	Early Holocene		Warm and wet (increasing temperatures ~14.5-19.0°C and precipitation ~675-950 mm p.a.); increased seasonality of climate with wet winters and dry summers.
8,200-present	Mid Holocene to present		Establishment of modern climatic regime (temperatures ~18.0-22.0°C; precipitation ~450-580 mm p.a.); increasing aridification impacts compounded by anthropogenic impacts on the environment

Table 2 Major climatic regimes in the Eastern Mediterranean from the Last Glacial Maximum to the Holocene (based on Bar-Matthews *et al.* 1997, 1999; Robinson *et al.* 2006; Orland *et al.* 2012; Dean 2014; see also Fig. 2).

deciduous *Quercus*) (Roberts *et al.* 2001; Woldring and Bottema 2001/2002; Litt *et al.* 2009; Asouti and Kabukcu 2014; Kabukcu in press) (see also Fig. 4). Further east, on the Zagros mountain range, sparsely wooded *Pistacia* grasslands were dominant during the Bølling-Allerød, which were replaced by *Artemisia*-grass steppe during the Younger Dryas (Van Zeist 2008). These important differences between the vegetation histories of the Mediterranean and the Irano-Anatolian bioclimatic regions are verified by the exceptionally long pollen sequences obtained from lakes Van, Urmia and Zeribar, which confirm that, unlike grasses, trees did not form a prominent element of the vegetation of continental inland Southwest Asia before mid- to late Holocene times[2] (Bottema 1986; Wick *et al.* 2003; Djamali *et al.* 2008; Van Zeist 2008; Litt *et al.* 2009).

      Previous models of the impacts of climate change on the availability of plant resources to late Pleistocene hunter-gatherers assumed the existence of a positive correlation between stable "climax" arboreal-grassland habitats (dominated by deciduous oaks and/or *Pistacia*) and periods of climate improvement, and of steppe habitats (dominated by shrubs and herbs) with periods of climate deterioration (*e.g.* Zohary 1989; Hillman 1996). However, as discussed above, the available data on the regional Late Glacial palaeoclimatic and vegetation histories reveal a much more complex picture of terrestrial biome responses to the Younger Dryas across the different bioclimatic regions of Southwest Asia. Recently obtained palaeoclimatic records from the Soreq cave in Israel have provided additional insights into aspects of climate that are critical for subsistence economies, particularly seasonality: while climate conditions in the southern Levant were overall arid and cold during the Younger Dryas, seasonal variations in precipitation appear to have been of lower amplitude by comparison to the Holocene and the Bølling-Allerød (Orland *et al.* 2012). In addition, due to lower temperatures and decreased evaporation rates, major water-bodies such as the Dead Sea appear to have been characterized by a more positive water balance, inferred by high lake levels (Litt *et al.* 2012). In turn, these inferences of decreased precipitation seasonality point to the possibility that in the southern Levant resource predictability (hence the ability of prehistoric groups to anticipate and cope with seasonal resource shortfalls) might have been somewhat higher during

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[2]   Djamali *et al.* (2008) have reported a pre-Holocene peak in oak pollen observed in the long sequence from lake Urmia during the last interglacial period. However, the presence in the same pollen zone of the mesic, thermophilous, Euxino–Hyrcanian element *Zelkova caprinifolia* (which is notably absent from Holocene pollen spectra) points to climate conditions (milder winters and more spring or summer rainfall) during the last interglacial that were much more favourable for the expansion and establishment of woodland vegetation by comparison to the Holocene.
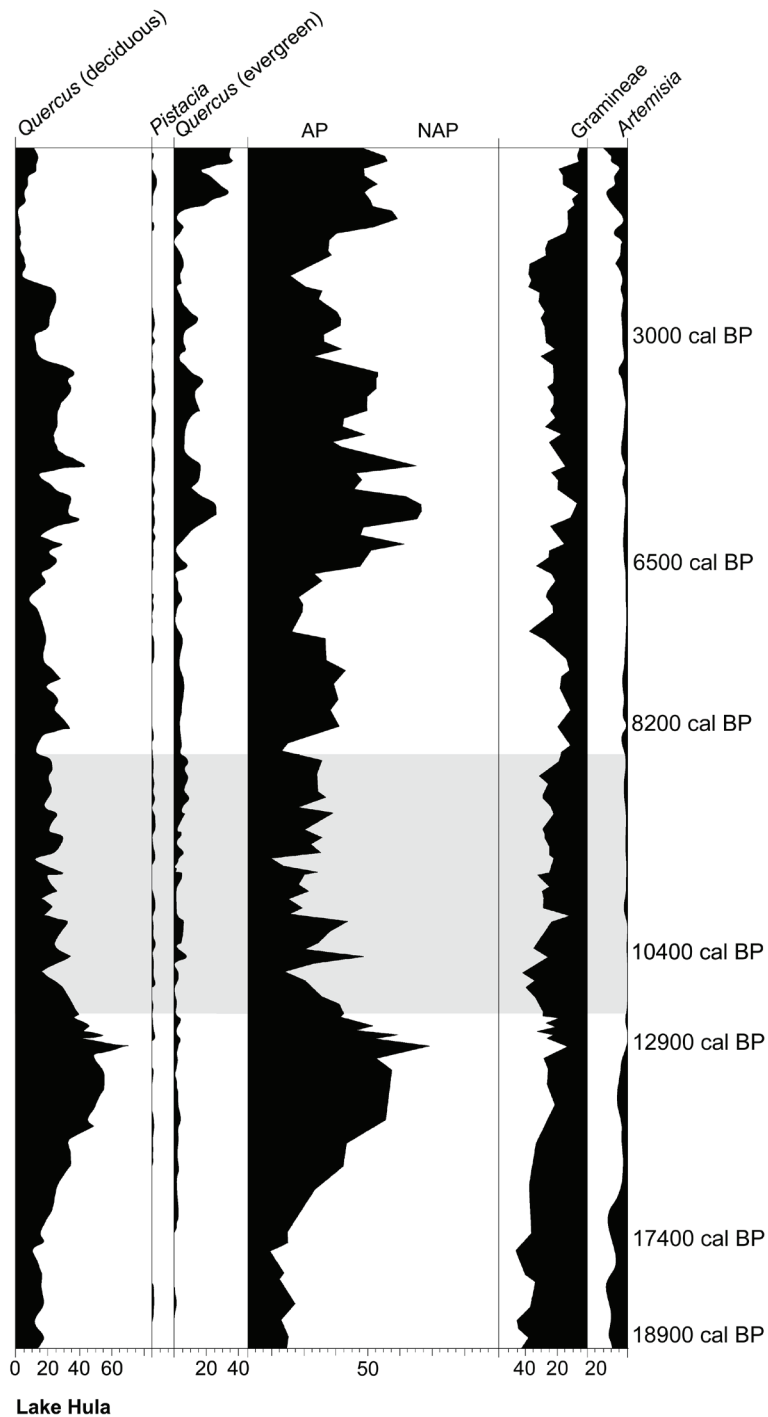
Lake Hula

Fig. 3 Select curves from the Lake Hula pollen diagram (shaded area indicates early Holocene) (dating follows Wright and Thorpe 2003).

the Younger Dryas *independently* of net resource ceilings. Palaeoecological records thus add an important new dimension to ongoing debates about the nature of the transition from the early to the late Natufian, and the evolution of the southern Levantine late Epipalaeolithic subsistence strategies (see discussion in Henry 2013). This inference of decreased climate seasonality during the Younger Dryas seems unlikely to have applied to other regions of Southwest Asia. High lake levels have not been deduced from palaeolimnological records in central Anatolia (Dean 2014) while, as discussed earlier, trees and grasslands appear to have been equally negatively impacted by the cold and arid conditions of the Younger Dryas. Evidence for habitation sites dating from this period is, tellingly, lacking from the central Anatolian plateau (Woldring and Bottema 2001/2002). In other parts of inland Southwest Asia, prehistoric groups adjusted their mobility and subsistence strategies to the marked shifts in the availability of woodlands and grassland biomes, by managing ecotonal catchments characterized by more diverse ecologies including alluvial-steppe and persistent arboreal habitats (*cf.* Savard *et al.* 2006; Asouti and Fuller 2012; Riehl *et al.* 2012; Willcox 2012a; Henry 2013 and references therein). Thus it appears that only in the harshest environments (*e.g.*, in central Anatolia) the Younger Dryas might have forced prehistoric communities to adopt highly mobile lifeways leaving few if any archaeological traces.

The hypothesis that cultivation and domestication first emerged in the Levant during the Younger Dryas as a response to the reduction of wild cereal stands due to adverse climatic conditions, saw its initial verification in Gordon Hillman's analysis of the archaeobotanical remains from Abu Hureyra in northern Syria (Hillman 2000). Hillman based his conclusions on the finds of larger "plump" rye seeds in late Epipalaeolithic layers and the coeval increase in small-seeded grasses and legumes, which he viewed respectively as evidence for selection for large seed size under cultivation and the local development of an arable "weed" flora (Hillman *et al.* 2001). While the finds of domesticated-type rye grain from the late Natufian levels of Abu Hureyra were soon afterwards dismissed as intrusive (Nesbitt 2002) the impression of the site as a Natufian example of PDC has persisted in the literature (*cf.* Willcox 2012a). However, in their recent comprehensive re-assessment of the Abu Hureyra archaeobotanical record Colledge and Conolly (2010) have cast serious doubt on the hypothesis of late Natufian PDC. They argue that the higher
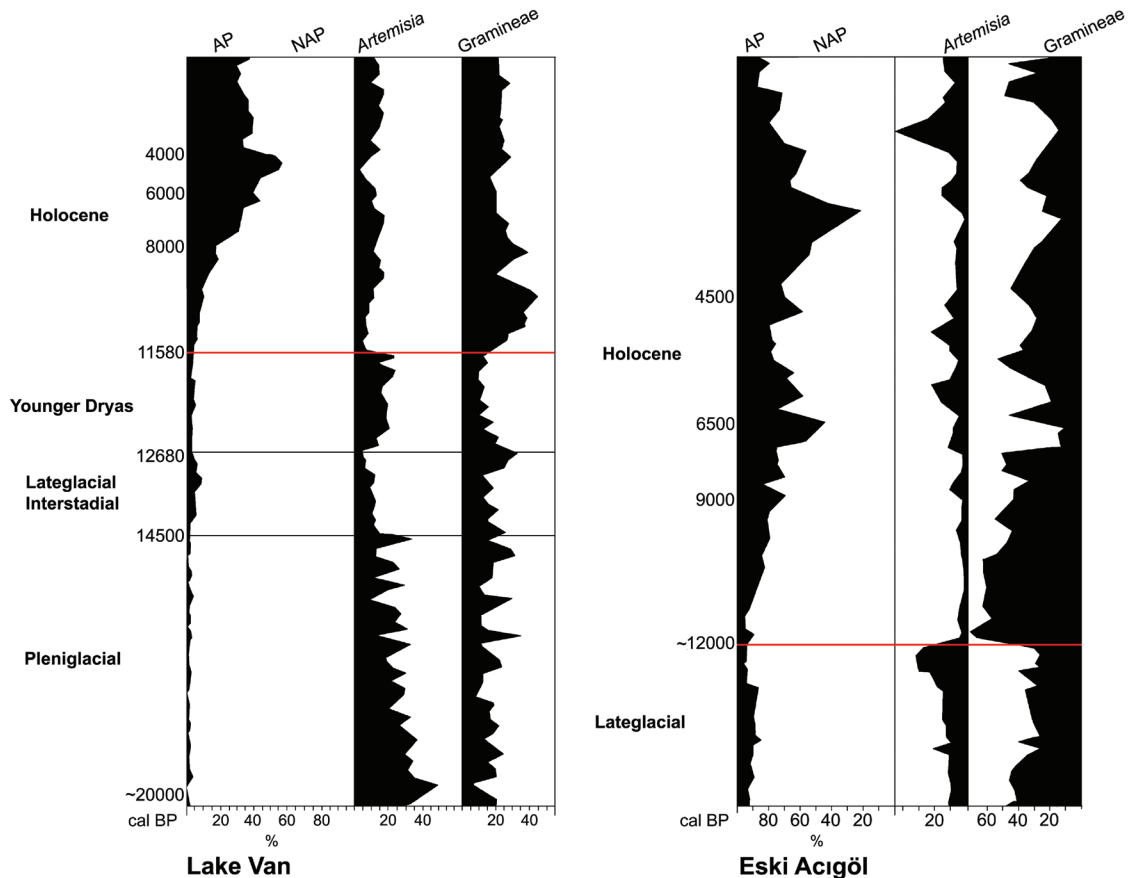
Fig. 4   Select curves from the Lake Van (Eastern Anatolia) and Eski Acıgöl (Central Anatolia) pollen diagrams (original data published by Wick *et al.* 2003; Litt *et al*. 2009, and Roberts *et al.* 2001; Woldring and Bottema 2001/2 respectively).

frequencies of small-seeded grasses and legumes in the late Natufian archaeobotanical samples can be more parsimoniously explained as plant foods gathered from the wild. Colledge and Conolly propose that the gradual reduction in the frequencies of large-seeded cereals and legumes, and the coeval increase of small-seeded grasses and legumes, are more likely to reflect the substitution of high-ranked, large-seeded plants as the preferred plant food subsistence source by a broad spectrum of low-ranked, small-seeded taxa. They thus interpret the changes observed in relative taxon frequencies as evidence of an increase in di-et-breadth through time, which was caused by negative climate impacts on the availability of high-ranked, large-seeded taxa in the environs of Abu Hureyra during the Younger Dryas (Colledge and Conolly 2010: 137 [thus largely following a similar line of argument to that previously proposed by Hillman *et al.* 1989]).

The Abu Hureyra case study represents a classic example of the conceptual divide between "environmental determinist" and "optimal foraging" models of prehistoric economic behaviours (*cf.* Bettinger 1991; Winterhalder 2001). While the former view prehistoric societies as passively responding to external impacts on the resource base (exemplified in the case of Abu Hureyra by Hillman's interpretation of the pivotal role played by the Younger Dryas in the adoption of cultivation), the latter view economic decision-making as underpinned by environmentally constrained resource selection. Resource selection refers to the ranking of resources according to their abundance and preference. In turn, preference is defined primarily by microeconomic criteria including caloric yields and acquisition (collection and processing) costs. The interpretation of the Abu Hureyra archaeobotanical sequence proposed by Colledge and Conolly represents an example of an optimal foraging model, with its emphasis on diet-breadth increase as a response to the reduced availability of high-ranked resources. However, modelling resource choice based on microeconomic benchmarks can be misleading on both ecological and economic grounds. For example, collecting and processing of low-ranked, small-seeded plants is typically predicted to be low-return in terms of harvested calories and more labour-intensive compared to high-ranked, large-seeded species (*e.g.* crop progenitor species). Yet, it has been observed that small-seeded grasses harvested from the wild tend to have lower seed-chaff ratios and a higher number of seeds per stalk compared to large-
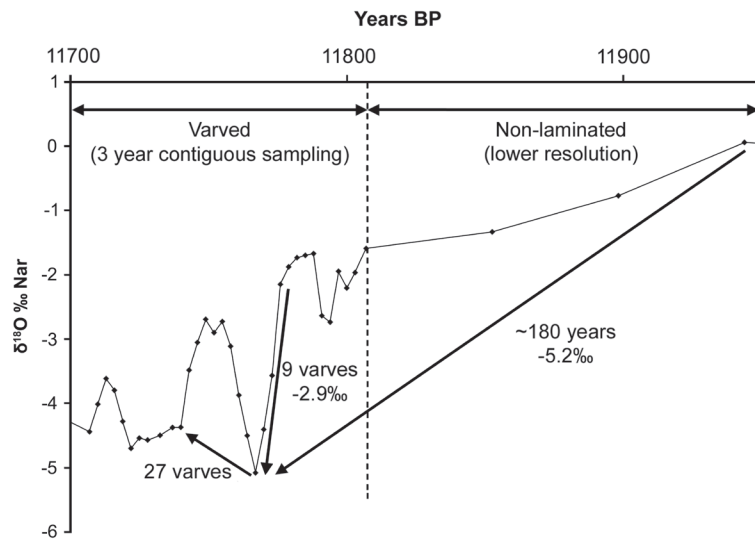
Fig. 5   The Younger Dryas termination as recorded in the Nar Gölü stable oxygen isotope sequence (modified after Dean 2014: Fig. 10.6).

seeded glume progenitor species such as wild-type einkorn, emmer and barley (Blumler 2002). More recent studies have found no significant differences in yields and seed-chaff ratios between progenitor and non-progenitor taxa (Preece *et al.* 2015). A different reading of the Abu Hureyra archaeobotanical data might thus emphasize the greater availability and abundance of small-seeded grasses and legumes in the site environs as the main determinant of resource selection by its inhabitants during the Younger Dryas, and the opportunities they afforded for routine subsistence scheduling. Due to their wider ecological preferences these taxa are also likely to have returned more predictable yields by comparison to large-seeded species irrespectively of (assumed) processing costs. Large-seeded species would actually have been more costly to pursue, because they would have had to be collected from increasingly scarce and diminishing natural stands or (following Hillman's interpretation) their seeds planted and tended for several months under a suboptimal climatic regime before they could actually return a yield.

The assumption of substantial reliance on the management of seed plants, including large-seeded cereal progenitor taxa, during the Natufian period in the Levant is widespread in the literature (Bar-Yosef 1998; Valla 2000; Byrd 2005). Direct archaeobotanical evidence is available from few sites, of which only two have provided indications for the significant presence of wild-type cereals: early Natufian Dederiyeh cave (Tanno *et al.* 2013) and late Natufian Abu Hureyra 1 (Hillman 2000) both predating the Younger Dryas. Other northern Levantine facies contemporary with the Younger Dryas include the later phases (2-3) of Abu Hureyra discussed above, Mureybet 1 (Van Zeist and Bakker-Heeres 1986) and the Baaz rock-shelter (Conard *et al.* 2013). These sites have provided very little or no evidence for reliance on crop progenitor species. In the southern Levant, phytolith analyses from early Natufian sites located in the Mediterranean Woodland Zone have indicated that plant-based subsistence derived mainly from tree nuts and fruits rather than large-seeded grasses; by contrast, phytolith finds from late Natufian sites point to an increased reliance on non-cereal grass taxa (Rosen 2010, 2013; see also overview by Asouti and Fuller 2012). However, at the same time (and in agreement with the off-site palynological archives discussed earlier) pollen data have revealed the co-existence of both cereal and tree pollen at several Natufian sites (see Henry 2013 and references therein). Overall, the combined macrobotanical, phytolith and pollen records point to significant variations (alongside some points of convergence) in Natufian plant-based subsistence strategies between the southern and the northern Levant, which cannot be easily reconciled with the expectations of classic "push" '(*i.e.*, resource-stress) models of prehistoric economic behaviours. Instead, they appear much more likely to reflect regional environmental gradients and diversity in the availability and local ecologies of plant resources across different landscape units (*e.g.*, upland and steppe areas, steppe-woodland ecotones and the Mediterranean Woodland Zone).

Across Southwest Asia the termination of the Younger Dryas ushered in a period of warm and wet conditions corresponding to the early Holocene (~11,700-6000 cal BP) (Robinson *et al.* 2006; Dean 2014). The Younger Dryas-early Holocene transition was markedly abrupt. Recent analyses of annually laminated lake sediments from Nar Gölü in Cappadocia (central Anatolia) have indicated that the tempo of the climatic transition was very punctuated, with over half of it occurring within a decade (Dean 2014). A similarly rapid event of ~12 years is registered in the Soreq cave speleothems (Orland *et al.* 2012) (Fig. 5). The Nar Gölü sequence indicates that this extremely rapid, decadal-scale event was followed by a brief very wet episode lasting for 26 varve years, which was terminated at ~11,400 cal BP by a bimodal cooling and arid event (corresponding to the PBO) that lasted for 126 varve years (Dean 2014) (Fig. 6). While the Soreq cave sequence is poorly resolved with regard to the start of the Holocene, the available data nevertheless suggest the prevalence during this period of high-amplitude climate shifts, which did not stabilise in

a Mediterranean-type climatic re-gime before ~10,500 cal BP (Or-land *et al.* 2012). Other regional palaeoclimatic records alongside climate modelling have also in-dicated that the early Holocene was characterized by heightened seasonality in surface air temper-ature, with markedly dry sum-mer conditions and high levels of winter precipitation (COHM-AP 1988; Robinson *et al.* 2006; Brayshaw *et al.* 2011) (Fig. 7). Thus, although early Holocene climate was on the whole wetter and interannual variability was also lower (Allcock 2013; Dean 2014) at the same time seasonal-ity was particularly pronounced with colder and wetter winters and hotter and more arid summers by comparison to later periods.

    The most noticeable ter-restrial response to the rapid cli-matic improvement at the start of the Holocene was the dramatic expansion of grasslands, includ-ing cereal progenitor taxa, which reached their greatest extent dur-

Fig. 6   Comparison of Nar Gölü and NGRIP Holocene stable oxygen isotope records (modified after Dean 2014: Fig. 10.11).

ing this period particularly in inland Southwest Asia. Grassland expansion in the first two millennia of the Holocene also coincided with a peak in wildfire signals, deduced from micro-charcoal records and charred plant macrofossil frequencies in lake sediments (Wick *et al.* 2003; Wasylikowa 2005; Langer and Wasy-likowa 2008; Turner *et al.* 2008, 2010). These studies found very little evidence to suggest that grassland fires were primarily of anthropogenic origin. Their higher frequency fits very well with the reconstructed seasonality patterns for this period, and most likely resulted from the increased availability of high grass fuel loads that were extremely susceptible to fire disturbance during the hot and dry summer seasons (Turn-er *et al.* 2010). Once more it is possible to trace divergent trajectories of regional fire histories between the west Levantine littoral and the semi-arid, continental interiors of Southwest Asia: micro-charcoal records from the Hula basin in Israel have indicated that woody plants made a greater contribution to micro-char-coal influx; by contrast, sites in continental inland regions such as Eski Acıgöl (central Anatolia), lake Van (eastern Anatolia) and lake Zeribar (Zagros) present the reverse pattern with the predominance of grass charcoals (Wasylikowa 2005; Turner *et al.* 2010: Fig. 7). Overall, this pattern matches very closely the available pollen and anthracological and seed archaeobotanical records, which point to significant regional variations in the composition, density and structure of early Holocene woodland vegetation: oak-grass vegetation was dominant in the Levantine littoral while sparsely wooded *Pistacia*-Rosaceae grasslands prevailed in semi-arid inland areas (*cf.* Roberts *et al.* 2001; Woldring and Bottema 2001/2002; Wick *et al.* 2003; Wright and Thorpe 2003; Van Zeist 2008; Litt *et al.* 2009; Asouti and Kabukcu 2014, Asouti *et al.* 2015; Riehl *et al.* 2015; Kabukcu in press). Some authors (Roberts 2002; Turner *et al.* 2010) have hy-pothesized that these regional differences in vegetation composition and ecology might reflect early PPN human impacts on woodlands, which delayed the spread of trees, especially deciduous oaks, across inland Southwest Asia. However, considering also the evidence (already discussed) for the sparseness and open structure of Late Glacial woodlands in the continental interiors of Southwest Asia, a more parsimonious explanation is that this time-lag reflects the more rapid response of grasslands to the abrupt increases in moisture and temperature at the start of the Holocene. Cyclic vegetation disturbances, including high-am-plitude seasonal differences in precipitation and temperature resulting in higher natural fire frequencies, would have provided grasses with an additional competitive advantage over trees. The prevalence of grass-lands over woodlands would have been especially pronounced in inland regions that were characterized by lower annual rainfall averages compared to those of the Mediterranean littoral (Asouti and Kabukcu 2014).
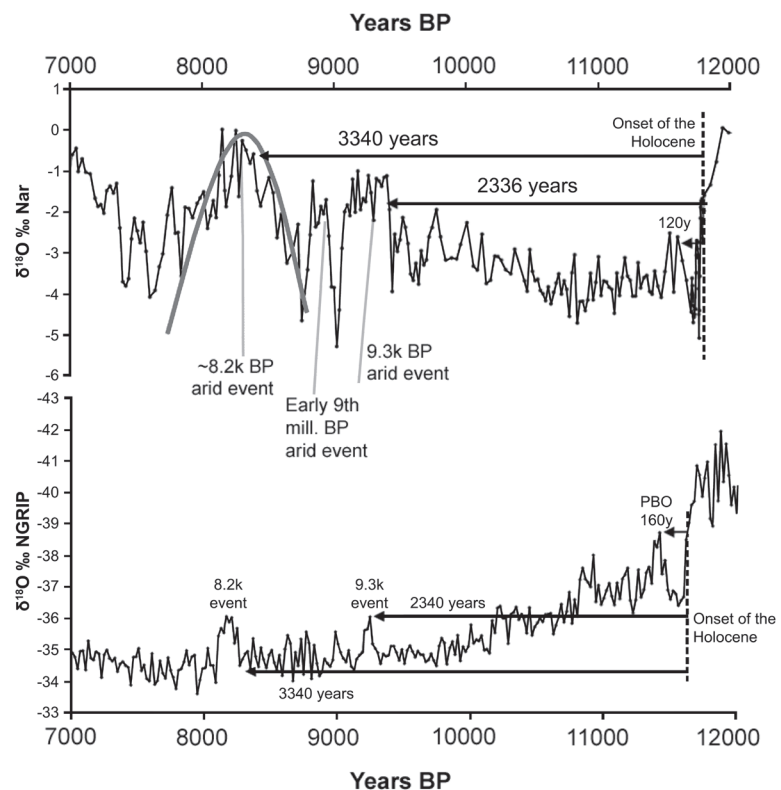
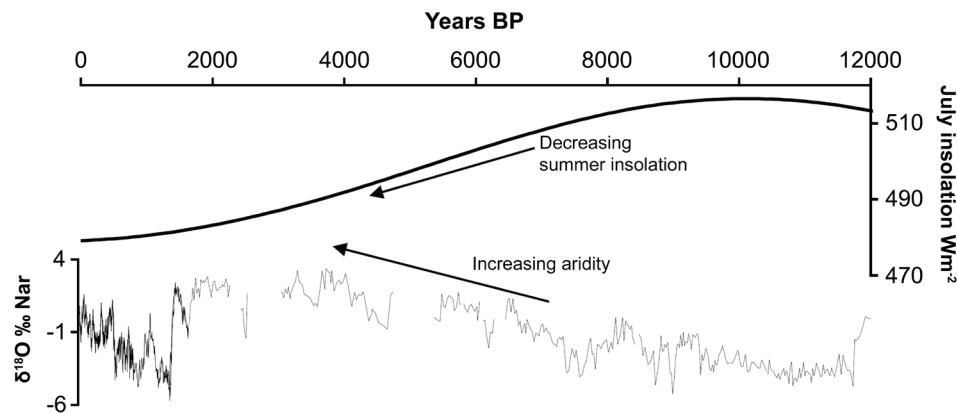|	Surface air temperature		Precipitation			
	Seasonal cycle		*Summer*	*Winter*		
	North Hemisphere continents	East Mediterranean coast	East Mediterranean	All Mediterranean	Anatolia	East Mediterranean coast
Early Holocene	+++	++	0	++	++	+
Late Holocene	++	+	0	+	+	–

Fig. 7   Modelled climate seasonality for the northern hemisphere continents and the Eastern Mediterranean regions (top) and comparison of insolation changes with aridity trends reconstructed from stable oxygen isotope records at Nar Gölü (+, -, 0 denote increase, decrease and no change relative to the pre-industrial present respectively) (modified after Brayshaw *et al*. 2011: Table 3.2 and Dean 2014: Fig. 10.10).

Early Holocene Resource-rich Environments and the Nature of Early PPN Low-level Food Production

In recent years, resource abundance models of past economic behaviours have provided useful insights into the structure and ecologies of early Holocene low-level food production. Most prominent has been Cultural Niche Construction Theory (CNC) (for detailed overviews see Smith 2011, 2015; Zeder 2015). The basic premise of the CNC is that, instead of passively adapting to environmental conditions, hunter-gatherer groups living on the eve of food production intentionally manipulated and modified their habitats in order to enhance resource productivity, stability and predictability. Smith (2011, 2015) has defined the main predictions of the CNC framework for the characterization of early Holocene low-level food production economies as follows:

(1) They occupied relatively small and few in number settlements located in resource-rich environments and controlled spatially limited, well-defined resource territories.

(2) Archaeobiological assemblages contain evidence for the harvesting of a broad and diverse spectrum of species from biotic communities with no evidence for resource depression.

(3) They established various forms of ownership of "wild" (*i.e.,* biologically non-domesticated) resources and resource-rich territories.

(4) They maintained and consistently updated a comprehensive knowledge of local ecosystems, landscape activities and environmental experience, which was encoded in stories, belief systems and cosmologies.

(5) They engineered ecosystems over multiple generations via sustained and repetitive resource management practices and traditional ecological knowledge transfer, resulting with time in major ecological and genetic transformations of the biotic components of ecosystems.

(6) They increased the relative abundance, predictability, and availability of targeted wild species within resource-catchment areas by enhancing their net primary productivity through niche construction, including modifying local environments through activities such as burning and clearance.

Several elements of the CNC framework provide an overall good fit with the early PPN archaeological and palaeoecological records of Southwest Asia. As discussed in the previous section, climatic

improvement was very rapid at the start of the Holocene resulting in the equally rapid, albeit regionally variable, expansion and abundance of grasslands, woodlands and water resources. Regional settlement patterns indicate that habitation sites were relatively small (0.5-1 hectares on average) and widely dispersed in the landscape. A degree of residential and/or logistical mobility is suggested by the occurrence of sites that functioned as transient hunting/foraging camps and activity areas, the relatively limited lifespan of several habitation sites (often not exceeding a few centuries), and the presence of stratigraphic and radiocarbon discontinuities even at sites with long habitation sequences, which indicate episodes of site abandonment and re-occupation (see also Asouti and Fuller 2013 and references therein). The archaeobiological record points to the increasing exploitation of diverse and regionally distinctive repertoires of plant and animal species. Significantly, there is very little evidence for even localised resource depletion during this period (*cf.* Starkovich and Stiner 2009; Zeder 2012). It is also interesting to note that (as least with regard to the available pollen, anthracological and archaeobotanical records) evidence for significant early PPN human impacts on the landscape has remained hitherto elusive (*cf.* Asouti and Kabukcu 2014; Asouti *et al.* 2015; Kabukcu in press). It seems doubtful therefore whether relatively long-lived residential bases managing tightly controlled and temporally stable resource territories were as common in the early PPN settlement patterns of Southwest Asia as is sometimes implied in the regional archaeological literature. The earliest detectable human landscape impacts in the regional pollen and anthracological records date from the late PPN (*i.e.*, from the late 9th millennium cal BC onwards). The available evidence points to the suppression of grasslands and the coeval expansion of semi-arid woodland pastures, due to the combined effects of domesticated caprine grazing and increasing woodland management practices that promoted the spread of preferred firewood species across the semi-arid regions of the southern Levant, inner Anatolia, and the Taurus-Zagros foothills and mid-altitude slopes (Asouti and Kabukcu 2014; Asouti *et al.* 2015; Kabukcu in press). Furthermore, the establishment and spread of regionally distinctive agroecologies also dates from the late PPN and the Pottery Neolithic periods (Colledge 2001; Colledge *et al.* 2004).

One of the most important contributions of CNC in agricultural origins research is its conceptualization of low-level food production as "multigenerational ecosystem engineering" targeted at generating sizeable and predictable resource yields (Smith 2011; Zeder 2015). In Southwest Asia, PDC forms one of the most plausible candidates of such a process. In the regional archaeobotanical literature PDC is widely viewed as representative of the intensification of crop progenitor cultivation by year-round settled communities, and as a direct precursor to crop domestication and the development of agriculture. Its archaeobotanical indicators have been attested at several early PPN sites across the Fertile Crescent (*cf.* Van Zeist and Bakker-Heeres 1986; Van Zeist and de Roller 1991/1992; Kislev 1997; Colledge 1998, 2001; Edwards *et al.* 2004; Tanno and Willcox 2006; Weiss *et al.* 2006; Feldman and Kislev 2007; Willcox *et al.* 2008, 2009; White and Makarewicz 2012; Riehl *et al.* 2012, 2013, 2015; Willcox 2012a). Typically, the presence of PDC is assessed through a combination of archaeobotanical and ecological criteria including: (a) an increase in grain size, (b) the decline in the presence and relative frequencies of non-progenitor seed taxa coevally with the increasing frequencies of crop progenitor species, (c) the identification of "weed" floras in higher proportions than their expected presence and abundance in natural grassland vegetation, and (d) the transference of crop progenitor species outside their predicted natural habitats and geographical distributions (*cf.* Colledge 1998, 2001; Willcox *et al.* 2008; Willcox 2012b).

These criteria provide a useful yardstick with which to assess empirically the ecology of PDC, and the agronomic stability and predictability of its economic returns in early Holocene Southwest Asia. Beginning with seed size, the predominant view in the regional archaeobotanical literature is that it increased primarily as a response to the favourable conditions generated by cultivation: soil disturbance via clearance and tillage, and deep seed burial through planting (Fuller 2007; Willcox *et al.* 2008). However, it is also the case that large-seeded progenitor species growing naturally on heavy and deep terra rossa and alluvial soils will display the same plastic response (Blumler 2002). Seed size is furthermore strongly affected by density stand, inter-specific competition and rapid climate change, all of which impose selection on plant populations (Neytcheva and Aarssen 2008; Nicotra *et al.* 2010; Cunniff *et al.* 2014). The heightened seasonality of the first two millennia of the Holocene (characterized by wet winters and pronounced summer aridity) would also have favoured the development of large-seeded varieties (Blumler 1992). Systematic archaeobotanical evaluations of the regional rates and pace of seed size increase have indicated that it was a step-like process, with most of it occurring during the early Neolithic (Willcox 2004). However, at the same time, seed size increase does not appear to have been associated with other archaeobotanically more reliable phenotypic indicators of domestication, such as the occurrence in significant proportions of non-shattering rachises, which are not reported from any of the sampled early PPN sites. According to Willcox (2004) the absence of evidence for other phenotypic

changes reduces the likelihood that seed size increase in cereal cultivars resulted from selection pressures imposed by long-lived cultivation practices. Systematic comparisons of cereal seed sizes recorded from the later phases of early PPN sites such as Jerf el Ahmar and Dja'dé with those from the Chalcolithic site of Kosak Shamali (all in northern Syria), have also indicated that there was no significant grain size increase *after* the initial leap manifested during the early PPN (Willcox 2004; see also Fig. 8). In the absence of other indicators of phenotypic change Willcox (2004) concluded that early PPN seed size increase might reflect the introduction of exotic "plump-grain" varieties into northern Syria from moister habitats further north in Anatolia, where wild cereals probably grew under more favourable conditions. An alternative explanation for this step-like increase in grain size, which furthermore accounts for its coeval occurrence in areas outside the northern Euphrates basin, relates to early Holocene fluctuations in atmospheric CO_2 concentrations and their potential impacts on plant productivity. CO_2 values derived from leaf stomatal index data in northwest Europe have indicated a rapid increase from 210-215 ppmv at the beginning of the Younger Dryas to 270-290 ppmv at the start of the Holocene; after a drop to 240-250 ppmv during the PBO (~11,400-11,270 cal yr BP) CO_2 levels rose again to 270-290 ppmv until ~10,800 cal BP (Rundgren and Björck 2003; Fig. 9). In turn, the chronology of these fluctuations correlates very well with the beginning of the later early PPN phase at Jerf el Ahmar (11,200 cal BP) while it also overlaps with the greater part of the habitation at Dja'dé (~11,000-10,300 cal BP). Regardless of the ultimate causes of early PPN seed size increase, the inescapable conclusion seems to be that the potential role of early Holocene climate change in this process has been seriously underestimated; it appears unlikely that repeatedly practiced, multigenerational, stable cultivation activities and their assumed ecological and phenotypic impacts were the major contributing factors.

With regard to seed assemblage composition, the available archaeobotanical datasets reveal considerable diversity and variation between sites and across the different regions of Southwest Asia. This is expected if one considers the diversity of the regional climate gradients and associated vegetation ecologies (see previous section; also overviews of the composition of early PPN archaeobotanical assemblages in Asouti and Fuller 2012, 2013; Riehl *et al.* 2013, 2015). Again, the potential role of climate change and regional ecological variation resulting from natural vegetation disturbance is not sufficiently emphasized in the literature. Inter-regional variation in the presence and relative abundance of cereal crop progenitor species likely relates to climate factors, especially the length of the rainy season (Blumler 1996, 2002). Grasses (including cereal progenitor taxa) are present in a majority of early PPN sites. The predominant presence of barley in Levantine sites as opposed to einkorn in the northern Fertile Crescent may reflect the alignment of plant-derived subsistence averages with the general regional gradients in temperature and the length of the rainy season. By contrast, the differences observed in assemblage composition between sites located in the same bioclimatic region may reflect local micro-ecological diversity alongside cultural preferences. Several sites in eastern Anatolia and northwest Zagros (*e.g.* Hallan Çemi, Demirköy, Qermez Dere, M'lefaat) and in the southern Levant (*e.g.*, 'Iraq ed-Dubb, Netiv Hagdud) contained large quantities of non-cereal taxa and nuts suggesting their preferential management as subsistence mainstays (*cf.* Colledge 2001; Savard *et al.* 2006; Willcox and Savard 2011; Willcox 2012a). At other eastern Anatolian sites such as Körtik Tepe large-seeded grasses were abundant, although on the whole progenitor taxa formed a very small component of the archaeobotanical assemblage (Riehl *et al.* 2012). Annual legumes had a significant presence at several sites in Anatolia and the Zagros (*e.g.*, early PPN phases at Çayönü and Nevalı Çori, Hallan Çemi, Qermez Dere, M'lefaat; references above, also Van Zeist 1988; Pasternak 1998). Fire disturbance favours the spread of annual legumes by breaking their seed dormancy and the removal of competing herbaceous growth (Merou and Papanastasis 2009). In addition, legumes are effective colonisers of heavily disturbed, nitrogen-deficient locales due to their capacity to fix nitrogen in the soil (Lajeunesse *et al.* 2006). Assuming (as proposed already) that the higher incidence of early Holocene natural vegetation fires impacted the dense grasslands of inner Anatolia and the Zagros, recurrent episodes of fire disturbance might explain the increased presence of legumes at sites in these areas. In the ecological literature, it is often assumed that fire disturbances always favour the regeneration and spread of cereal progenitor species, due to the relative protection afforded to grains by their spikelets (that facilitate post-fire soil crack penetration) and the removal of competing perennial grass growth (*e.g.* Naveh 1974; Noy-Meir 2001). However, burning of grasslands early in the summer season might have also led to crop progenitor stand collapse due to high rates of seed mortality especially for barley but also for rye, emmer and einkorn. A partial exception would have been stands growing near rocky outcrops or on deep alluvial and terra rossa cracked soils that could have allowed rapid seed burial (Blumler 1992; Hillman 1996: 191). It is thus plausible that crop progenitor populations were seasonally impacted, on occasion even decimated, by natural fires. Being closely linked to the pronounced seasonal variations in temperature and rainfall, cyclic pulses of fire-induced stand collapse likely exerted significant (if localised) impacts on

A. Barley grain measurements

B. Emmer wheat grain measurements
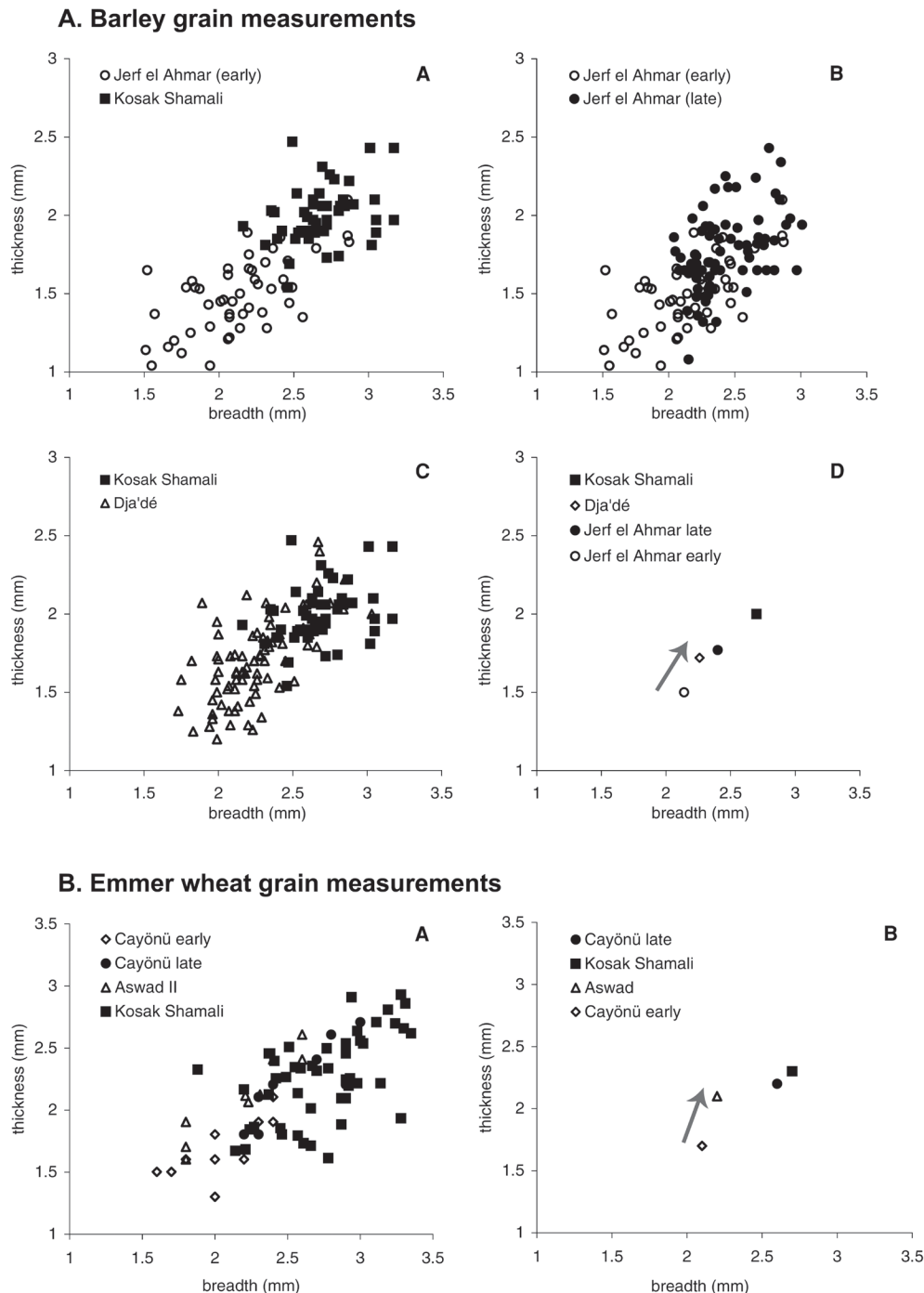
Fig. 8   Scatterplots comparing seed size measurements of (A) Barley grain from Jerf el Ahmar (JEA), Dja'dé and Chalcolithic Kosak Shamali (KS); (B) Emmer wheat grain from Çayönü, Aswad II and KS.
Plot A.A shows a clear separation between smaller and larger barley grain sizes from JEA (early) and KS; Plot A.B shows an increase in grain size between JEA (early) and JEA (late); Plot A.C shows larger on average yet more dispersed values from Dja'dé, which indicate a greater overlap with JEA (late) and KS. Plot A.D shows the step-like increase (arrow) in average barley grain size between JEA (early) and JEA (late)/Dja'dé/KS (the further increase indicated by the KS mean barley grain size measurements is not significant as it most likely reflects differences in crop processing methods between early PPN PDC sites and late prehistoric farming sites: in the latter larger seed sizes appear dominant because crop processing is more systematic (including large-scale threshing) while coarse sieving (which removes most of the smaller seeds of cereal ears) also takes place off-site. Plots B.A-B show a similar step-like increase (arrow) from early to late sites. In plot B.A, the greater dispersal of emmer grain measurements (compared to barley measurements) can be again explained by the preference of later farming sites for the storage of glume wheats as whole ears (thus resulting in a greater range of preserved seed sizes). The additional increase in ventral breadth at later sites indicated in plot B.B is likely to reflect the impact of other parameters unrelated to cultivation practices *per se* (*e.g.*, cultivation of different wheat varieties) (modified after Willcox 2004: Figs. 3-4).

Fig. 9 CO_2 values reconstructed from leaf stomatal index data (SW Sweden) showing rapid increase from 210-215 ppmv at the beginning of the Younger Dryas to 270-290 ppmv at the sta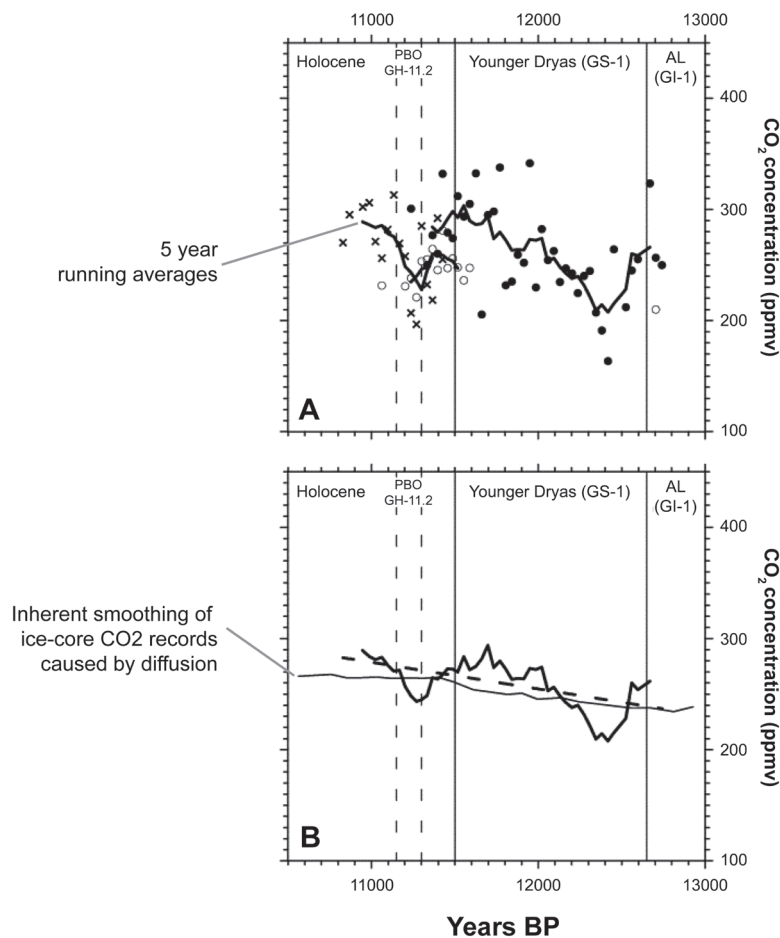rt of the Holocene, and the sharp drop to 240-250 ppmv during the Pre-Boreal Oscillation (PBO; ~11,400-11,270 cal BP) (plot A) and how they compare to the CO_2 values obtained from Antarctica ice-core records (plot B) (modified after Rundgren and Björck 2003: Fig. 5).

resource availability and predictability, by altering the composition and density of grassland patches and the distribution of preferred grass species near habitation sites, as well as affecting herbivore behaviour. It would appear therefore that for large parts of inland Southwest Asia the assumption of the existence of ecologically stable, resource-rich terrestrial environments that could have supported year-round exploitation of spatially delimited territories is unlikely to hold.

The identification of predomestication cultivation "weed" floras presents its own range of analytical and interpretative challenges. Willcox (2012b) has argued in favour of a taxonomic approach, identifying as suitable candidates for inclusion in "weed" assemblages taxa which: (a) have no historically or ethnographically known uses for their seeds, (b) co-occur in archaeobotanical assemblages with phenotypically wild progenitor species, and (c) belong to the same genus as verified obligatory weeds of cultivation known from later agricultural assemblages. Based on these criteria, he has proposed a list of 19 taxa as the most likely candidates for arable "weed" status (Willcox 2012b: Table 2). An important limitation of the taxonomic approach is that, more often than not, accurate species-level identifications of the carbonized seed remains of wild/"weed" taxa are not feasible. Furthermore, several species belonging to these genera are known to occur naturally in grass steppe and woodland vegetation habitats across Southwest Asia, although Willcox *et al.* (2008: 322) have argued that outside arable habitats such taxa normally occur in low frequencies. However, this argument has been contradicted by Gordon Hillman who noted that, in the absence of very heavy grazing by sheep and goats, several species can also be found in uncultivated steppe "at densities comparable to those of weed-infested arable fields" especially after particularly wet winter seasons (Hillman *et al.* 1989: 253-254). It is therefore possible that (under the higher winter precipitation regime that characterized the first two millennia of the Holocene) wild/"weed" taxa had far wider distributions and ecologies, and occurred in much higher densities in natural grassland vegetation compared to later periods or present-day conditions. One very important implication of this observation is that the proportions of non-progenitor taxa in archaeobotanical assemblages derived from short-lived habitation phases and/or sites are unlikely to represent reliable vegetation fingerprints of PDC. As Willcox (2012a) has observed, assigning "weed" status to non-progenitor taxa should be dependent on the specific characteristics of each archaeobotanical assemblage in its entirety (including close monitoring of shifts in their relative proportions through time). For

this reason, it is probably best applied only to those sites that preserve long habitation sequences that have been systematically and comprehensively sampled for archaeobotanical remains.

An explicitly ecological approach has been proposed by Colledge (1998, 2001) classifying wild/"weed" taxa according to modern ecological groupings and monitoring their presence in archaeobotanical assemblages via multivariate statistical techniques. The key assumption is that in archaeobotanical assemblages which are dominated by crop progenitor species the primary pathway for the inclusion of wild/"weed" taxa would have been as "contaminants" of cereal harvests. Their ecological groupings are thus likely to reflect the vegetation composition of the habitats in which cereals were growing. Depending on the nature of these vegetation fingerprints, it might be possible to reconstruct the specific activities that were associated with PDC (*e.g.,* the regular occurrence of soil disturbance indicators would point to tillage, *etc*.) This approach has allowed Colledge (2001) to infer the practice of PDC on naturally fertile alluvial soils. This proposition has found additional empirical support in recent studies of wild cereal progenitor functional ecology, which have indicated that wild cereals may effectively exploit sites characterized by high levels of fertility *and* disturbance (Cunniff *et al.* 2014). An obvious limitation of this approach is that its applicability is limited to archaeobotanical assemblages that are dominated by crop progenitor species: as discussed already this is a condition that is not universally applicable in early PPN Southwest Asia.

The last criterion, the displacement of crop progenitor species from their natural habitats and distributions, is probably the most difficult to evaluate with any degree of certainty based on modern and historical observations and ecological analogues. Modern climate-vegetation associations are of little utility for reconstructing prehistoric plant habitats other than assessing the general relationship between present-day temperature and precipitation gradients and species distributions. This is due to the enormous differences observed between present-day and early Holocene climate conditions in all bioclimatic regions of Southwest Asia. Based on modern observations of floristic associations Zohary (1969) had previously suggested that deciduous oak parklands represent a key primary habitat for cereal and legume crop progenitor species. In recent years, however, integrated archaeobotanical and anthracological studies have demonstrated that the early PPN ranges of progenitor and non-progenitor taxa extended well beyond those reconstructed for deciduous oak woodlands into the sparsely wooded *Pistacia*-Rosaceae semi-arid steppe grasslands that occupied the inland plains and low- to mid-altitude slopes of the Levant, Anatolia and the Zagros foothills (Asouti and Kabukcu 2014; Asouti *et al.* 2015; Riehl *et al.* 2015). Asouti and Kabukcu (2014) have argued that (outside the Mediterranean Woodland Zone and Euro-Siberian montane refugia) relic associations of deciduous oak woodlands with grasses on high-altitude slopes and rocky outcrops represent a mid- to late Holocene phenomenon caused by the retreat of annual grasses from lowland plains, moist steppe habitats and mid- to low-altitude slopes due to millennia of overgrazing and settlement expansion.

Modern and historical associations of progenitor taxa with specific soil types and edaphic conditions are no less problematic. Wild cereals are reported to thrive on terra rossa, hard limestone and basaltic soils, as well as rocky outcrops (Harlan and Zohary 1966; Willcox 2005). However, other studies report much wider edaphic tolerances (including more alkaline soils) for several progenitor taxa both in Anatolia (Karagöz *et al.* 2009) and in the Levant (Nevo *et al.* 1992). At present, such associations persist in areas that are less accessible to livestock; they are thus likely to represent the aggregated result of the retreat of wild cereals from other habitat types due to persistent overgrazing (Zohary and Brick 1961; Noy-Meir *et al.* 1989; Noy-Meir 1990; Valkoun *et al.* 1998; Waines 1998; Karagöz *et al.* 2009). Historically heavily impacted habitats otherwise capable of sustaining dense concentrations of cereal progenitor species include alluvial plains and moist steppe biomes (Harlan and Zohary 1966; Kimber and Feldman 1987). Both habitat types have been used as arable and pasture for thousands of years across all regions of Southwest Asia. The most favourable habitats for wild cereal growth are characterized by the co-occurrence of several ecological factors besides soil types or slope aspect, including highest available soil moisture both at the beginning and at the end of the growth season, least competition for light, highest available soil nitrogen content, and lowest grazing pressures (Noy-Meir *et al.* 1991a,b).

How "Intensive" or "Reliable" was PDC as a Staple Subsistence Provider?

As noted in the previous section, an empirical assessment of PDC based on the first three criteria (*i.e.*, excluding modern ecological preferences and distributions) is feasible only for sites that preserve long habitation sequences and have been thoroughly sampled for archaeobotanical remains including multiple lines of evidence. One such site is Jerf el Ahmar where larger seed size emerged in its later phases alongside a reduction in the frequencies of small-seeded taxa (Willcox *et al.* 2008). However, it remains unclear whether this represents the intensification of crop progenitor cultivation, since a coeval reduc-

tion in the frequencies of some progenitor species (einkorn and rye) is also evidenced in the published dataset. As discussed already, the 1-step increase in seed size observed between the early and the late phases of Jerf el Ahmar correlates well with the PBO. Its co-occurrence with the shifts in botanical assemblage composition may thus not necessarily reflect the gradual intensification of crop production by a year-round settled community of cultivators-foragers. Alternatively, it might signify the reorganization of plant food procurement and production involving several complementary strategies such as the broadcast re-seeding of locally available wild barley stands, or the transplantation of both barley and locally scarce einkorn and rye into shifting alluvial plots of cleared riparian woodland vegetation during the PBO.

Another site that has preserved a much longer habitation sequence is Chogha Golan, on the Iranian southern Zagros foothills, dating from the end of the Younger Dryas to the 8th millennium cal BC (Riehl *et al.* 2012, 2013, 2015). To date, the published evidence does not indicate clear directional temporal trends in botanical assemblage composition, grain size or the development of wild/"weed" floras. All three key variables (proportions of dominant taxa, barley grain size and the presence and relative frequencies of wild/"weed" taxa) fluctuate widely through time, while there appears to be no consistent pattern of co-variation between them (*cf.* Riehl *et al.* 2015: Figs. 5-7). Despite the evidence for the persistent management of wild-type barley since the earliest phases of the site, the first definitive evidence for the presence of domesticated-type barley rachises dates from the MPPNB, thereafter to disappear, while domesticated-type emmer emerges suddenly in the LPPNB (Riehl *et al.* 2015; see also Fig. 10). In the view of the present author, this diversity of archaeobotanical signatures at Chogha Golan is suggestive of diverse and of highly variable intensity plant management strategies through time. Such flexibility might have developed in response to pronounced micro-ecological variation (*e.g.*, acute spatial and temporal fluctuations in the availability and distribution of alluvial habitats alongside recurrent episodes of seasonal vegetation fires and disturbance) that likely affected the availability and productivity of crop progenitor stands.

Despite their long habitation sequences neither Jerf el Ahmar nor Chogha Golan (or for that matter any other early PPN site or regional sites cluster in Southwest Asia) has produced convincing evidence for the local independent development of phenotypically domesticated crop taxa. This archaeologically verified fact places PDC at odds with CNC's prediction that "multigenerational ecosystem engineering" practised by permanently settled groups managing small, resource-rich and ecologically stable territories would have provided a sufficient condition for the emergence of initial plant domestication. To date, attempts by archaeobotanists to explain the apparent longevity of PDC have focused mostly on a nar-
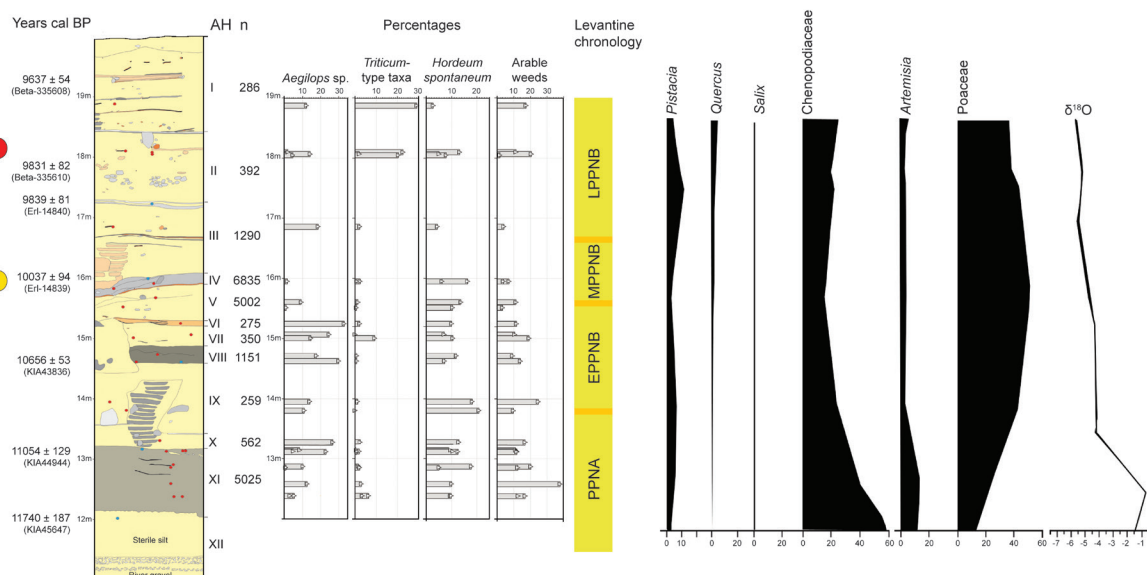
Fig. 10   Stratigraphic profile from Chogha Golan (left) alongside AMS dates (cal BP) (loci of dated samples in the profile indicated by blue circles) and archaeological horizons (AH) in Roman numbers. % frequencies of relevant taxa and groups of taxa (*Aegilops* sp., *Triticum*-type taxa, *Hordeum spontaneum* and "arable weeds") were calculated from the total number of identifications from each AH (loci of samples in the profile indicated by small red dots). n=no. of seed and chaff records from each horizon. Large yellow dot to the left marks the sole occurrence of domesticated-type barley chaff (which disappears in later AHs). Large red dot marks the first appearance of domesticated emmer wheat. To the right are shown select curves from the pollen sequence and the oxygen stable isotope record of Lake Zeribar (modified after Riehl *et al.* 2015: Fig. 10).

row range of biological and cultural selection pressures (*e.g.*, introgression from wild populations and harvesting at the dough stage or by beating cereal ears into baskets) (*cf.* Fuller and Allaby 2009; Fuller *et al.* 2011 and references therein). Few have questioned the dominant perception of PDC, at least in the regional archaeobotanical literature, as a mode of production that was practiced by permanently settled "village"-like communities in a manner and at a scale that were conceptually similar (if not functionally identical) to those of later full-time farming societies (see discussion in Asouti and Fuller 2013). The main criticism of the currently dominant PDC concept is this: if crop progenitor cultivars (cereals in particular) were intensively managed through annual planting in plots distributed near permanent habitation sites in order to secure and maximise the year-round provision of staple plant foods, then the pace of the development of the domestication syndrome would have been much faster. That this was not the case suggests at the very least the existence of diverse, low-intensity plant management practices that alleviated, and on occasion even reversed, any latent domesticatory pressures (Asouti and Fuller 2013). Here this argument is developed further by proposing that PDC practices were attuned to the short- to medium-term ecological instability that characterized much of the terrestrial environments of Southwest Asia during the early Holocene. Ecological instability arose from the marked seasonality of the early Holocene climate, its decadal-centennial scale oscillations and the resulting fragility of the regional grassland biomes. These phenomena were particularly pronounced in the semi-arid continental regions of inland Southwest Asia. Steppe grasslands, although extensive and also characterized by high species diversity due to the rapid climatic improvement that marked the start of the Holocene, were susceptible to climate-paced cyclic fire disturbances which led to periodic stand collapse and short-term depletion pulses, caused by heightened climate seasonality.

Early PPN communities responded to short- to medium term ecological instability by engaging in flexible economic strategies that precluded substantial reliance on delayed-return practices such as seed crop cultivation. Their landscape practices likely included the residential and/or logistical mobility of different community segments, the management of spatially extensive and ecologically diverse territories, and sustained social and material investment in the maintenance of long-range community interaction networks (Asouti 2013; Asouti and Fuller 2013; see also next section). Far from being black-boxed by archaeobotanists as an evolutionary precursor of fixed-plot intensive horticulture, PDC can be perhaps more accurately conceptualized as a constellation of diverse plant management practices including the harvesting at varying seasonal intensities of wild plant stands that were dispersed across wide territories, the opportunistic cultivation of plots that were scattered between the most fertile localities (*e.g.* in riparian habitats), transient habitat modifications (*e.g.*, shifting plots alongside opportunistic small-scale clearance and tillage), communal grain storage, and translocational seeding (*i.e.*, the exchange and/ or transference of seed corn over long distances). The common denominator of such practices is that they are all likely to have generated low-intensity ecological and biological (phenotypic) footprints. More generally, it appears reasonable to infer that in early Holocene Southwest Asia PDC represented a somewhat different mode and scale of low-level food production and hunter-gatherer niche construction from those predicted by CNC models that were originally developed in the context of the Eastern North America and Neotropical ecoregions of the New World (*cf.* Smith 2006, 2012, 2015).

Resilience, Environmental Knowledge Transmission and Community Interactions

As noted in the introduction, the early PPN witnessed a florescence of symbolic/ritual behaviours across Southwest Asia. While a detailed discussion of the contextual attributes and potential meanings of early PPN symbolism goes well beyond the scope of this chapter, it is noteworthy that much of its material manifestations encountered in some of the most celebrated case studies (*e.g.* at Göbekli Tepe) have distinctive, if less commented upon, landscape connotations. One characteristic example is "Enclosure" D at Göbekli Tepe, one of the earliest excavated structures at the site, currently dated between the mid-10th and the early 9th millennia cal BC (Dietrich *et al.* 2013). The T-shaped pillars of "Enclosure" D bear the highest proportion of sculpted snake depictions and the highest diversity of animal representations from any other excavated structure at Göbekli (Peters and Schmidt 2004: Table 2). Venomous creatures (scorpions and snakes, the latter strongly reminiscent in shape of the native to the region *Vipera lebetina*) are depicted as moving away from wetland birds (pillar 33), while attacking mammals (pillars 20, 33) or in association with death-related themes (pillar 43) (Fig. 11). Representations on pillar 43 comprise a narrative of potential cosmological significance organized in three distinct horizontally arranged panels: the top panel contains what appear to be habitation structures in a wetland setting, suggested by the presence of reed-like patterns, a wetland bird and a boar. In the panel below two birds of prey are depicted

alongside a sun-like disk and other symbols with less obvious connotations. The panel at the bottom end of the pillar is dominated by a massive scorpion, which is depicted in fine morphological detail alongside a snake, possibly a scavenging animal, and a headless male human body that appears to be led away by another bird of prey.

According to recently published radiocarbon determinations (Dietrich *et al.* 2013) the beginning of "Enclosure" D is dated to ~9700 cal BC, at the very end of the Younger Dryas and the start of the Holocene as indicated by the more precisely dated Nar Gölü palaeoclimatic sequence (Dean 2014). The palaeoecological evidence for the magnitude and rapidity of the transition (completed in the space of a single decade) suggests that its environmental impacts were experienced within individual human lifetimes. Memories of the hyper-arid environments of the Younger Dryas (possibly encoded in death-related themes and stories about swarms of venomous snakes attacking humans and mammals at a time of increased aridity) that had hitherto shaped people's landscape experiences likely formed the core of cosmologies and inter-generational knowledge transmission about past times of adverse conditions and resource stress. Comparative studies of ethnographic accounts of hunter-gatherer societies living in marginal (arctic, subarctic, arid and semi-arid) environments have indicated that oral traditions of high-impact, low-frequency episodes of environmental change have an average lifespan of ~90 years (Smith 1988). After a century has elapsed, such stories become encoded in cosmological narratives that are passed down the generations through their incorporation into highly stressful, even traumatic, once-in-a-lifetime ritual events (*e.g.* male initiation rites) experienced collectively by their participants in large aggregation sites. According to Smith (1988) such events function as vehicles for the storage and inter-generational transmission of collective passive memory (as opposed to active memory deployed in expedient, daily life tasks) and for establishing and re-affirming lifelong alliances and bonds between participant individuals and social groups.

Snakes, centipedes and birds of prey are depicted on portable objects found in several early PPN sites of the northern Fertile Crescent (Figs. 12 a, b). At Jerf el Ahmar they occur as engravings on shaft

P33   P33   P20   P43
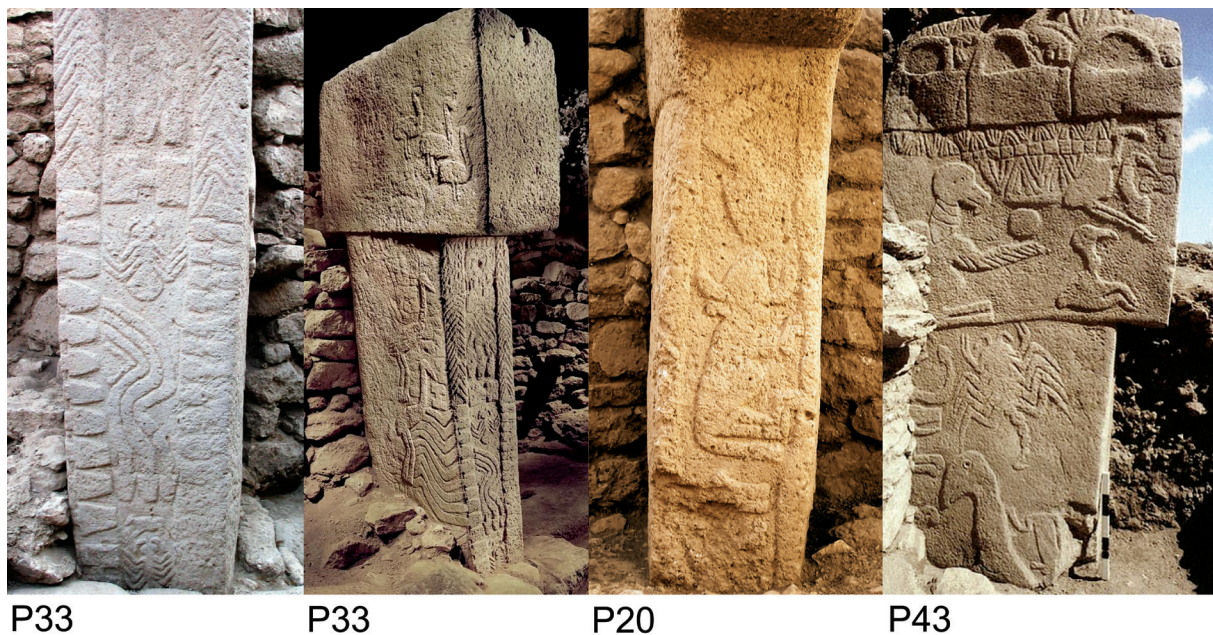
Fig. 11   T-shaped pillars from "Enclosure" D at Göbekli Tepe (images courtesy of the late Klaus Schmidt).

straighteners (a category of ground stone artefacts traditionally associated with hunting activities) or otherwise unmodified ground stone objects (Stordeur and Abbès 2002). At other sites, such as Körtik Tepe, representations of snakes and centipedes also appear on stone vessels that might have been used in communal food consumption events (Özkaya and San 2007). Snakes, giant centipedes, scorpions, lizards and spiders are common in the faunas of semi-arid steppe grasslands and were abundant in the region before the decimation of their natural habitats by overgrazing, settlement expansion and modern agriculture (*cf.* Joger 1984; Crucitti and Cicuzza 2001; Kaltsas *et al.* 2008; Simaiakis and Mylonas 2008 and references
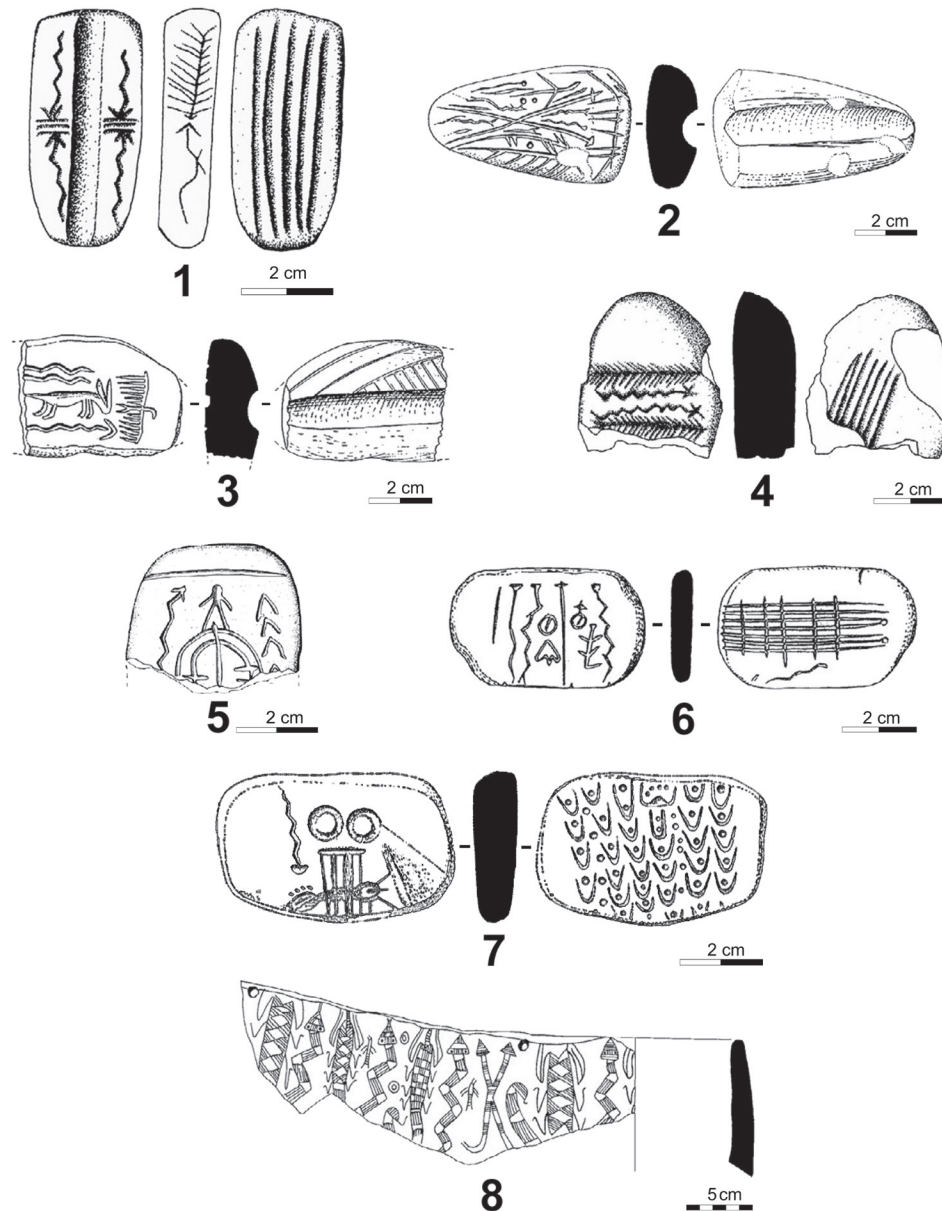
Fig. 12a Engraved stone objects: Tell Qaramel shaft-straighteners (1, 4; Mazurowski and Yartah 2002: Fig. 10); Jerf el Ahmar shaft-straighteners (2, 3, 6, 7; Stordeur and Abbès 2002: Fig. 16); Tell 'Abr 3 stone plaquette (5; Yartah 2005: Fig. 7); Körtik Tepe stone vessel (8; Özkaya and San 2007: Fig. 18).

therein).[3] Their ubiquity on early PPN portable material culture (especially objects associated with hunter-gatherer mobility and social interactions) might signify the mapping of paths of movement across the liminal space of the steppe and/or stories of the various dangerous encounters associated with such trips. The engravings on some ground stone objects are also suggestive of their potential function as mapping/orientation devices: they often combine snakes, birds of prey and hunted mammals (possible allegories for the steppe, its dangers and its resources) with fixed landmarks such as the round shapes and features

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[3]   A particularly poignant description of the experience of travelling across the steppe grasslands of northern Syria by foot can be found in the novel "Ariagni" by the Egyptian-Greek author Stratis Tsirkas, where he describes the forced march from Aleppo to Ar-Raqqah of two battalions of the 2nd Brigade of the Greek Armed Forces in the Middle East in June 1943, following the mutiny of their republican officers in April 1943: *"Raqqa; the steppe was like a grey yellow sea; full of wild grasses as tall as reeds, two meters; full of lizards like little crocodiles, poisonous snakes, giant centipedes, scorpions as big as little mice, hairy spiders; the pain is intolerable and their wounds stink."* (Tsirkas 1983 [1962]: 336-337)
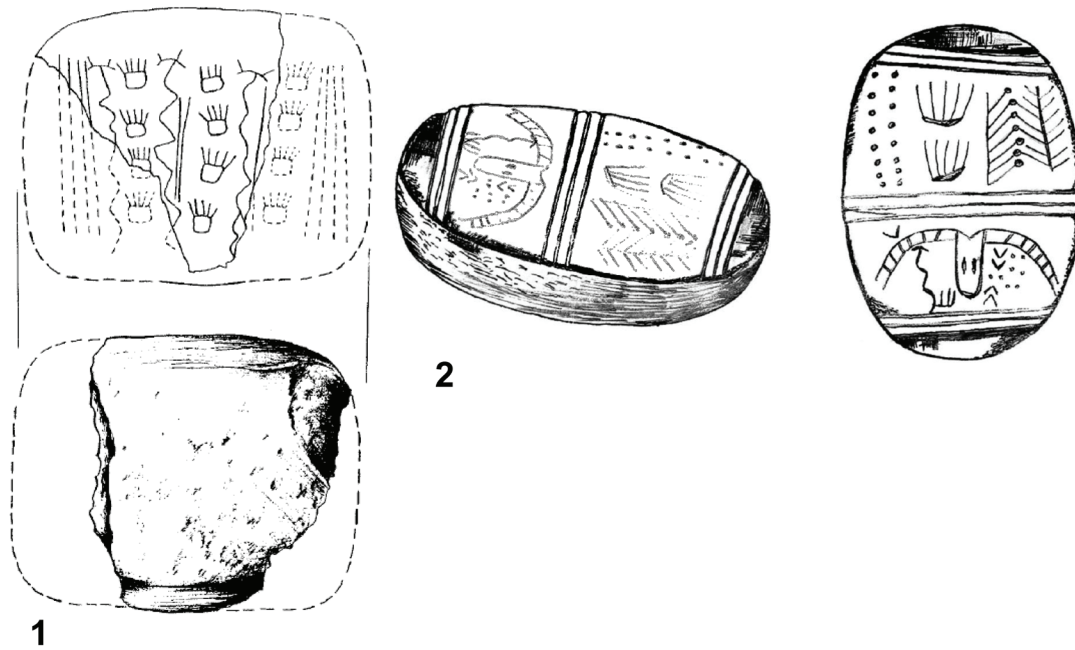
Fig. 12b Engraved stone objects: Tell Qaramel (1; Mazurowski and Yartah 2002: Fig. 11); Tell 'Abr 3 (2; Yartah 2013: Fig. 151).

resembling standing posts reminiscent of the communal buildings at Jerf el Ahmar, potential representations of wild plant stands and more abstract motifs (*e.g.* arrow-like shapes) that might signify orientation markers (see Fig. 12a: 3, 5-7, Fig. 12b).

By placing these examples of early PPN symbolism and ritual behaviours in their broader ecological and socioeconomic context, it is possible to begin putting together a larger picture. Hunter-gatherer mobility, material culture symbolism deployed in active and passive landscape memory storage and knowledge transmission, and community interaction networks sustained by ritually invested communal food consumption events, stood at the core of regional resilience strategies aimed at mitigating early Holocene ecological instability and associated resource risks. Recently published plant genetic research has brought out even more poignantly the critical contribution of hunter-gatherer mobility and community interactions to the macro-evolutionary development of the domestication syndrome in Southwest Asian early cereal cultivars. Genetic studies suggest that domesticated emmer wheat has a reticulate rather than a phylogenetic evolutionary relationship with its wild progenitors (Civáň *et al.* 2013). Civáň *et al.* (2013) have proposed that this resulted from hybridization between different lineages effected via the utilisation and cross-pollination of wild grain derived from diverse sources over long periods of time. This process was ultimately responsible for the development of predomesticated cultivars that shared phylogenetic signals with emmer populations derived from all parts of the wild emmer geographical range. Thus, according to the reticulated origins scenario, wild-type emmer cultivars spread during the early PPN from the southern Levant into northern Syria, southeast Anatolia and northern Iraq, where their reproductive isolation from parent wild emmer populations resulted in their morphological domestication. This scenario would explain the phylogenetic proximity to the domesticated gene pool evidenced by the wild emmer populations presently found in Karacadağ (southeast Anatolia) and Sulaymaniyah (northern Iraq), which appear to represent "the remnants of the cultivated populations from which the first domesticates evolved" (Civáň *et al.* 2013: 9). If verified through further research, these observations may signal the replacement of both monophyletic and polycentric theories of agricultural origins with a new dynamic reticulate model: Epipalaeolithic and early PPN hunter-gatherer mobility was the primary determinant of the geographic distribution and genetic makeup of the wild cereal progenitor species *before* their initial domestication. A model of reticulate (*vs.* polycentric *and* monophyletic) origins of initial crop domestication also points to the existence of much more dynamic and multifaceted modes of early PPN niche construction across Southwest Asia (predicated on regional interaction networks and paths of movement) compared to CNC theory predicting the existence of spatially limited, closely controlled and temporally stable resource territories.

Pathways to Agriculture: the Switch from PDC to Agro-pastoral Food Production and its Socioeconomic and Ecological Impacts

For a delayed-return subsistence strategy such as seed crop cultivation to become established in the acutely seasonal climatic regimes and unstable vegetation ecologies of early Holocene Southwest Asia, and supersede long-lived resource management strategies firmly imbedded in social memory, identities and community interactions, a major innovation in its technology was necessary; one that would render it viable as a staple subsistence provider. Ethnoarchaeological research on traditional farming practices in the Eastern Mediterranean has demonstrated that a key condition for the sustainability of crop production is the capacity of cultivation systems to absorb and buffer recurrent seasonal and interannual environmental risks of crop failure. This is achieved primarily through the intensification of production geared at generating a *normal surplus* to use in times of need as well as underwriting social obligations (see discussion in Halstead 1989, 2014). In the context of Southwest Asia, Abbo *et al.* (2010) have proposed that a key strategy for mitigating environmental risks was the cultivation of crop packages (mixtures of cereals and pulses exhibiting variable levels of tolerance to local micro-ecologies) which would have conferred agronomic stability to early cultivation systems. The regional archaeobotanical record indicates that the formation of regionally distinctive crop packages comprising domesticated cultivars was a protracted process that was not complete until the late PPN (Asouti and Fuller 2012). Moreover, the geographical and chronological pattern of the adoption and spread of domesticated crop packages follows closely that of the spread of domesticated caprine herding (Colledge *et al.* 2004; Peters *et al.* 2005; Zeder 2008; Asouti and Fuller 2012; Arbuckle and Atici 2013; Martin and Edwards 2013). This correlation indicates that it was the integration of plant cultivation with the herding of domesticated animals that likely played a pivotal role in the establishment and spread of farming economies across Southwest Asia (Harris 2002).

A key pathway for this development was the use of animal dung as manure that might have initially occurred as the unintentional consequence of caprine herds grazing on steppe and alluvial grasslands following plant harvests. Manuring increased the ecological resilience of crop cultivation by mitigating some of the risks imposed by early Holocene climate seasonality. The use of dung as fertiliser provided a major boost to the productivity and reliability of cultivated harvests thus enabling the intensive annual cropping of fixed-boundaries plots in direct proximity to habitation sites (*cf.* Harris 2002; Bogaard 2005; Araus *et al.* 2014). The widespread adoption of small-scale horticulture integrated with domesticated caprine herding also had lasting effects on the vegetation environments of Southwest Asia through the development of regionally distinct agroecologies and other types of anthropogenic niches (Asouti and Kabukcu 2014; Asouti *et al.* 2015). Examples of the latter include the gradual reduction of grasslands and the coeval expansion of semi-arid managed woodlands and woodland pastures. Such landscape-scale vegetation changes have been detected in both central Anatolia and the arid zone of the southern Levant, and resulted from the combined impacts of domesticated caprine grazing and woodland management activities alongside increasing climatic aridity, especially from the mid-late 8th millennium cal BC (Asouti and Kabukcu 2014; Asouti *et al.* 2015).

The societal impacts of the adoption and spread of integrated agropastoral production during the late PPN were equally far reaching. Communities became perceptibly more settled, occupying larger habitation sites on a permanent basis and over successive generations (Kuijt 2000; Asouti 2006a). Residential architecture was transformed with the standardization and increasing compartmentalisation of building layouts, in order to accommodate a range of functions including storage and cooking, and heating and food preparation installations (Kuijt 2012; Goring-Morris and Belfer-Cohen 2013). Overall, it is possible to observe a shift away from group-focused social structures and corporate identities towards the household, which emerges as the principal unit of socioeconomic organization in the course of the later PPN (Kroot 2014). Evidence for the prevalence of an "egalitarian" social ethos that might have functioned as a levelling mechanism for emergent social inequalities is ubiquitous in the late PPN, being principally manifested in the lack of differentiation in residential architecture and in burial customs (*cf.* Kuijt and Goring-Morris 2002; Asouti 2006b; Kuijt 2008; Kuijt *et al.* 2011). At the same time, however, the use of communal structures for storage and other social purposes waned, whereas after the late 9th millennium cal BC most indicators of collective ritual behaviours and communal food consumption largely disappear from the regional archaeological record. Across Southwest Asia late PPN societies were characterized by settlement patterns, mobility strategies, economic practices, and ritual and symbolic behaviours that overall had little in common with their early PPN antecedents.

Conclusion

Climate change at the end of the Pleistocene and the beginning of the Holocene played a pivotal role in the radical reconfiguration of the "ecological theatre" in which the "evolutionary play"[4] of global agricultural origins unfolded in the course of the last 12,000 years. The combined archaeological and palaeoecological records of late Pleistocene and early Holocene Southwest Asia appear to corroborate the hypothesis that direction-changing, transformative economic shifts and associated technological and societal innovations are not engendered by conditions of stress (resource, climatic, demographic, or otherwise). Instead, they seem to uphold the theoretical principle that human societies are primarily risk-averse, especially when faced with stochastic and/or regime-switching environments (Zhang *et al.* 2014). When their economic base is challenged by external or internal pressures humans will opt for behaviours that are focused on security rather than optimization. At the other end of the spectrum, however, resource abundance per se also does not seem to provide a sufficient condition for direction-changing socioeconomic change. The reason for this is that change is predicated on complex historical circumstances and contingencies arising from the interplay of varied multi-scalar ecological, social and historical contexts. In early Holocene Southwest Asia the macroevolution of the regional agricultural economies ultimately depended on radical innovations in the ecology and technology of early food production, such as the integration of cultivation with domesticated caprine herding, that emerged quite separately (more like historical accidents than intended outcomes) from any supposed incremental shifts in the management, genetic makeup and phenotypes of early PPN cultivars.

The symbolic and ritual florescence that has come to define the early PPN of Southwest Asia has been widely portrayed in the literature as intimately linked to the cognitive and sociocultural shifts deduced for this period (*e.g.,* Cauvin 2000; Verhoeven 2004; Watkins 2006; Hodder and Meskell 2011; Atakuman 2014). By contrast, the potential contributions of climate change and the environment at large are often downplayed, or sometimes altogether omitted, from a debate that remains squarely focused on architecture and material culture. Environmental change is viewed as providing little more than the ecological background to the main story of sociocultural change and innovation. Contrasting with such approaches, this chapter argues that the resource-rich, yet ecologically unstable, landscapes of the first two millennia of the Holocene likely contributed to the emergence of complex symbolic and ritual behaviours in Southwest Asia, which were imbedded in regionally distinctive social identities and corporate institutions. Such behaviours were deployed in mapping the availability and locations of preferred resources, and for the storage, exchange and inter-generational transmission of landscape knowledge and historical experiences of environmental change. Raised resource ceilings in the context of early Holocene ecological instability also expedited the development of lasting mechanisms of social cooperation, which fostered the intensification of community interaction networks and the region-wide circulation of socially prized foodstuffs, including early cultivars. Increasing degrees of social cooperation are reflected in the ubiquity of ritually invested communal institutions and in behaviours such as communal food consumption that enabled alliance building, the development of shared ideologies and cosmologies, the diffusion of symbolic vocabularies, and the emergence of regionally distinctive group identities.

Cooperation is a major driver of human evolution (Nowak 2006). The critical role of environmental instability is also widely recognized in evolutionary biology. Building on the dichotomy between variability-selection versus habitat-specific hypotheses (Potts 1998, 2002) the general theoretical principle is proposed that specialized economic behaviours (such as "agriculture" or "foraging") are facilitated by environmental change in a constant direction (whether negative or positive) that renders such behaviours adaptive and sustainable in the long-term (*e.g.*, during the Younger Dryas or the Holocene Climatic Optimum). Conversely, in environments characterized by high degrees of medium- to short-term ecological instability (*e.g.*, the Younger Dryas termination and the onset of the Holocene) which impacts directly human perceptions of the environment and its resources, flexible economic practices and cooperative social behaviours provide distinct advantages. What differentiates this proposition from other ecologically oriented theories of prehistoric economic behaviours (*cf*. Binford 2001) is its decoupling of resource abundance and resource stress from idealized notions of environmental stability and instability respectively. Instead, the emphasis is placed on *resource ecologies*. For the comparative cross-cultural study of agricultural origins such a theoretical framework provides an appropriate heuristic environment for formulating and testing region- and context-specific, historical explanations of the enormous

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[4]   Slightly paraphrasing the title of Evelyn Hutchinson's famous collection of essays *"The Ecological Theatre and the Evolutionary Play"* first published in 1965 by Yale University Press.

differences observed in the nature, duration, pace and directionality of socioeconomic change among early Holocene low-level food producers worldwide (*cf.* Smith 2001; Barker 2006). This is achieved by focusing on the distinctive resource ecologies characterizing each world region, in the context of global climate change, rather than the broad structural similarities of prehistoric economic behaviours.

Acknowledgements

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Society
and
Economy

Neolithic Corporate Identities in the Near East[1]

Hans Georg K. Gebel[2]

Abstract: In the trajectory of human evolution from the Near East's Epipalaeolithic to the end of the
Neolithic, pivotal processes from generalised to confined territoriality, commodification and ideolog-
ical/habitus regimes, and identity formation became more and more a matter of socially coping and
managing the increasing diversification and specialisation in all spheres of social, economic, ritual and
cognitive productivity. Self-optimising and autocatalytic developments caused acceleration and aggre-
gation processes, supported by confined Neolithic corporate behaviour and its relational self, and struc-
tures in the various tangible and intangible milieus of life. Failures, devolutions, or fundamental adap-
tations in socio-economic and cultural devolopments are observable when socio-cognitive dispositions
weren't able to react in time to constraints in this overall successful polycentric evolution of productive
structures, or the Near Eastern Neolithisation (11th- 6th mill. BCE). Gradually, the emerging confined
Neolithic corporate identities, or "contained" identities, had become the rather sustainable cognitive
environments that established productive lifeways.

Keywords: Near Eastern Neolithic, generalised foragers' corporate identities, confined Neolithic corpo-
rate identities, confined relational self; confined territoriality, commodification, and ideological (habitus
and ideocracy) regimes

The Topic's Terminology, Selected Aspects

Identity* research is a key to understand developments in human history, and such research is especially
imperative for the historically pivotal steps taken by humans during the Near Eastern Late Epipalae-
olithic – Neolithic periods. Confined*[3] corporate* identities of groups and the relational self* started
to alter the cognitive environments through which present history still happens and advances, through
which periods were and are commodifying their pasts, and through which futures were and are con-
structed in mankind's generations. With the Neolithic, the cognitive environments and their interde-
pendent formation of identities diversified and segregated to a degree that dramatically went beyond
the generalised identities (Frame 1) of the preceding hunter-gatherer societies. Increasingly diversified
cognitive domains created splitting confined – and occasionally/often contained[4] – social, economic and

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[1] This contribution benefits from research that took place for the author's contribution *The Way to Us. The Establishment of
Productive Lifeways in the Near East's Neolithic. On Neolithic Territoriality, Commodification, Ideocracy and Habitus Ag-
gregates*, submitted for publication in Trevor Watkins (ed., n.d.), *The Long Revolution. Becoming Neolithic in Southwest Asia.*
This contribution focuses more on the socioeconomic frameworks behind Neolithic identities formation, since the evolutionary
and the symbolic frameworks of Neolithic corporate identity are basically treated by this volume's contributions of Trevor
Watkins and Marion Benz. Our contribution drafts preliminary statements, definitions and theses on the Neolithic identity topic
from the perspectives of previous meta-theoretical works on the Near Eastern Neolithisation: This theses-type presentation
does not specifically reference theses and terms (except for the terms in Frame 1) already discussed and defined in various other
publications (Gebel 2010a,b; 2013a,b; 2014). Essential new terms are defined in Frame 1, and marked with an asterix when
first mentioned in the text.

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[3] For the author's distinction between generalised and confined corporate/corporateness in Neolithic times *cf.* Frame 1.

[4] In some contexts, the term "contained" instead of "confined" appears more appropriate when understood *sensu* "container

ideological milieus: The foragers' generalised corporate identities became confined Neolithic corporate identities; the foragers' generalised relational self became the confined Neolithic relational self. However, favoured Epipalaeolithic areas may have started to develop (*cf.* below) sorts of confined/confining Neolithic corporate identities, too, wherever food-rich environments triggered the control of nature by productive means (confined commodification and territorialities, *i.e.,* sorts of extended seasonal or even sedentary occupations; *cf.* the examples addressed below). Our focus on the corporate in the study of Neolithic identities demands caution: Productive socio-economies might have existed for longer without developing confined and/or corporate identities, *e.g.* if extensive physical environments still permitted unbounded/unlimited/open access to territories. Corporate and confined identities have to be expected to develop and become supportive only in productive environments when risk buffering and vulnerability is anticipated and starts to be experienced (author's hypothesis).

Identity-related confined reciprocities as well as identity-related disorder started to manipulate growth and decline in Neolithic times to an extent not known from foraging communities, separating their causes from nature and climate developments. Identity formation was a crucial presupposition of aggregation and acceleration processes, as identity problems also must have become responsible for their failures, among other reasons.

We expect that from the Late Neolithic onwards, human identity formation reduces its relational complexities and shares and promotes/prepares more and more structural and doctrinal complexities and hierarchies beginning to rule the inherent persisting relational systems. This becomes characteristic for the succeeding Fertile Crescent's Chalcolithic cultural centres of the 6th and 5th millennia BCE and all following periods (author's hypothesis). When it comes to the Neolithic relational self, or the Neolithic dividual[5]: Do we probably deal with strictly confined relational self, "owned" by their peers? This type of identity is supposedly especially characteristic of Neolithic societies based on extended households resulting from the need for mutual efforts to survive in competitive and narrowing resource situations. However, it remains unclear whether Neolithic systems developed conditions that caused onsets for "cephalic" political structures: chiefs, other elite persons and individuals with special competency, including healers, ritual personnel, congregations of community chiefs, and other groups. Independent from these, flat work hierarchies must have emerged from occupational (*sensu* vocational) competence in segregating craft systems, such as certain crafts that develop specialization/labour division/surplus production in household production, and supra-household specialised workshops.

Research indicates that certain – partly overlapping – arenas and contexts "behaved" more formatively and/or influentially in Neolithic identity formation than others. These were – sorted according to our view's relevance – the following:
- physical territories and their provisions (lands with their resources and habitats, domestic space, ritual space).
- commodification regimes (value creating territories, both for material and immaterial value systems), most productive in such social environments as intangible productive milieus of the socio-political and socio-religious kind (habitus* and ideocracy*, ritual and symbolic apparatuses/aggregates), tangible productive settings including the occupational technological/innovative aspects; corporate identities themselves are subject of commodification (Graph 1).
- the relational self.
- households (including their kinship/lineage/ancestors contexts).
- the communal and the supra-communal.

In terms of the most relevant productive features occurring with the Near Eastern Neolithisation, the following have to be mentioned:
- confined territorialities of tangible and intangible things (resources, spaces, materials, ideological and cognitive fields).

(r)evolution" (Olivier Nieuwenhuijse) or *sensu* the "container principle" (Klose 2015).

5   For the discussion and the definition of the Neolithic dividual, *cf.* Gebel n.d.; in short, a Neolithic dividual results from strictly confined reciprocal milieus not allowing, sanctioning or highly controlling individuation. In this context, and especially for the discussion of Neolithic identity formation, we stress that neither the Neolithic dividual nor the Neolithic individual must be understood apart from the habitus and ideocratic relations they are a part of; more basically, both social phenotypes, or variants of Neolithic personhood, were subject to the neurobiological and evolutionary frameworks active in the Neolithic.

- confined value systems (Neolithic commodification) of tangible and intangible values.
- confined storage[6].
- control of nature (making nature a matter of productivity).
- security by social reproduction, surplus production, planned supplies, exchange networks, and cohesive belief/habitus systems and related confined reciprocities (including security by confined reciprocities, including the otherworldly).
- introduction of confined concepts of inheritance/heritage, legacy, and legitimation.
- incipient inequality among social bodies, settlements, lifeways, possibly also incipient formation of the individual (*sensu* individuation) on account of the relational self.
- establishment of markets and a sense for corporate ("mortmain"-type?) property and wealth, incipient individual property, and wealth beyond the personal ornaments, tools, and other such factors?
- technological innovation by knowledge adaptation and transfer, "improvisation", recycling, cultural memory.

Other important identity formation spheres certainly existed, but they are more difficult to trace in the archaeological record. Among these are gender, food and network/exchange identities. Gender identities especially must have received major alterations during the development of the confined physical and intangible territories.

One issue of confusion needs to be addressed in this introduction: There had been arguments before and at the beginning of the workshop[7] that corporate identity is a modern concept and term developed by cooperative and public businesses and by branding practices such as university T-shirts, fast food signs, and industrial logos, and that thus it is highly problematic to apply the term to prehistory. While acknowledging that we use a modern term, it does not mean that the feature – the human attitude for corporate identity formation – is modern. Instead, isn't stressing of the *corporate* and of *identity*, or "being a member of", a most basic part of human behavioural systems, or of human ethos*, always serving to structure and organise the social, ritual and cognitive life? This behaviour can be traced throughout (pre-) history, primarily observable in empirical contexts like the ornament/dress, sepulchral, and habitation codes of cultures. The novelty with Neolithic identities was that they started to sustain productive behaviour and milieus by promoting incipient hierarchical structures through segregation and diversification, for which corporate identities were essential. The use of modern terms for the explanation of historic phenomena is not *per se* a mistake, and even helps to understand history, as long as 1) the meaning of these terms is defined and specifically "translated" for the investigated period; 2) these definitions respect the ontologies identified for the periods; and 3) – most important – the epistemic position of the researcher is made transparent.

A basic difference – in our view – between the confined Neolithic corporate identities and later or modern ones is that the former appear to have been "reactively" developed in accordance with the lifeways' changing conditions, while the latter are actively designed to create corporate structures and messages (especially since writing came up). Again, this illustrates the basic difference of Neolithic and later periods to modern societies: Neolithic societies behaved in a deeply relational way, as do many traditional societies up to today, while early history to modern industrial societies greatly developed along standards, principles and structures (author's hypothesis). However, such dichotomies are problematic in humanities and life sciences, and we cannot be certain that the Göbekli sphere, for example, does not represent an onset for a confined corporate identity in the modern sense while still embedding the relational of the confined Neolithic corporate identities.

The notion of Neolithic corporate identity does not immediately emerge as an important Neolithic topic since we do not see anything special in the identities represented in the archaeological record. In addition, we are used to the existing confined and corporate identities from our own experience in this world. Only when we see the confined, the corporate, and identity from deep prehistory we realize the

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[6]   The general storage aspect is inherent in all sectors mentioned here, and thus contributes to the broadness and complexity of Neolithic productive milieus and their storage aspects: Whether being tangible (land property, food, flocks, tool blanks, magic depots, pictorial media, ancestor burials, *etc.)* or intangible (technological knowledge, commodification strategies, cognitive and ideological substrata of all sorts, identity sources, *etc.*) supplies, all "stored" things backed the self-optimizing productive milieus. Even disturbances and collapses in storage systems could transform into innovative and new production milieus and corporate identities: The best example is *e.g.* the mobile pastoralism establishing from the late 8th millennium BCE in the Fertile Crescent's arid fringes, testifying new socioecomic lifeways and identities.

[7]   Workshop on *The Construction of Neolithic Corporate Identities*, organised by Trevor Watkins, Hans Georg K. Gebel and Marion Benz, taking place within the framework of the 9th International Congress on the Archaeology of the Ancient Near East at Basel, between the 9th and 10th, July 2014; a workshop report was published by Benz *et al.* 2014.

Fig. 1   Göbekli Tepe, from an Early PPNB context but probably of earlier origin (second half of the 8th mill. BCE or earlier): Complex pole sculpture (limestone: height 1,92 m), composed of elements from a predator (top), human or animal arms/ legs and hands, representing an unknown characteristic of the belief system. (courtesy of the Göbekli Tepe Project; published by Schmidt 2012 as Fig. 113)

Fig. 2   Jerf el Ahmar, phase récente (end of 10th mill. BCE): Subterranean community building (ellipse of *c*. 7,8/6,8 m) of probably polyvalent and mortmain nature with a radial organisation of space. (courtesy of the Jerf el Ahmar Project)

dramatic changes in identity regimes through Neolithic lifeways. And identity research is the right tool for a better understanding of Neolithic ontologies and ethos.

All these arguments should not obscure that the confined Neolithic corporate identities will remain constructs and just academic concepts, even if Neolithic corporate identities will eventually be better grounded empirically and become an epistemic framework operable for the relational character of Neolithic identity.

The Neolithic[8]

The enormous amount of empirical data from the last few decades of Near Eastern Neolithic fieldwork enabled Neolithic research to also approach basic questions in the supra-empirical fields of Neolithic ontologies, or Neolithic ethos (*e.g.* Watkins 2008, 2016; Benz 2010; Hodder 2012; Benz and Bauer 2013a, 2013b, 2016; Sterelny and Watkins 2015; Fagan 2017). Research in these fields, of course, works with constructs while trying to generate general historical understanding and knowledge beyond the empirical data.

However, Neolithic research remained vague in explaining the Neolithic corporate development and how it differs from the preceding foragers' corporate condition. In this contribution it is argued that in the Upper and Epipalaeolithic periods, generalised forms of corporate behaviour ruled societies, while during the transitional Epipalaeolithic (Natufian) these corporate behaviours became more and more socially confined by the new productive settings and specialising peer groups and their diversifying ideologies. The main reason why generalised reciprocities could not continue to dominate reciprocity regimes in the Neolithic times is seen in the developing conditions that 1) group sizes, structures, tasks and thus relational regimes grew, diversified, and became so complex that chances for direct and general interaction and negotiation within and between groups were drastically reduced[9], and that 2), this created the forcing needs for confinement in all tangible and intangible fields of the new emerging lifeways, including identities.

In our understanding, Neolithic identity research demands a holistic and transdisciplinary approach and should apply the basic concepts of commodification (Gebel 2010a), territoriality (Gebel 2014), and habitus/ideocratic aggregates (Gebel n.d.). The developments in the rapidly diversifying (Late) Epipalaeolithic – Late Neolithic trajectories, including their mindsets and cognitive dispositions, were a consequence of an increasingly productive behaviour. (Incipient) productive behaviour in confining territories, or the late foraging control of abundant and reliable natural resources[10], did not merely diversify and enrich the material worlds, it also raised productivity in the spheres of the interrelated symbolic, ritual/religious, political, and other cognitive frameworks that more and more became characterised by specialisation, capacity building, adaptiveness, and innovation. It does not mean that this was a continuous and ever-successful Neolithic road: Onsets of Neolithic lifeways may have collapsed in the Epipalaeolithic, late foragers may have populated the extensive eastern semi-arid ungulate hunting grounds beside the Neolithic farmers occupying the Levantine corridor. The various early general Neolithic motions culminated in a continuing and substantial regionalisation of productive – especially subsistence – lifeways during the 9th through 7th millennia BCE, finally representing a self-optimising, autocatalytic and successful polycentrism of Neolithisation[11] in most of the naturally favoured regions. In the late 8th millennium and during the 7th millennium, in various "motor regions" (*i.e.,* the Southern Levant and Central Anatolia) decline and collapse events in existing networks and structures occurred as a consequence of different complex acceleration and aggregation processes, such as the termination of the Transjordanian *Mega-Site Phenomenon* by 7000 BCE or the end of the large settlement of Çatalhöyük

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[8]   In this part, the author's explanatory framework for the Neolithic is shortly summarised, for the sake to introduce into backgrounds of the following parts on Neolithic corporate identity.

[9]   As expressed, in other words, by Trevor Watkins in his lecture to Ian Hodder's 2017 conference on Consciousness and Creativity at the Dawn of Settled Life (Watkins, in lecture 2017), or earlier by many contributions in the volume on *sharing* edited by Marion Benz (2010).

[10]   As in the case of the Early and Middle Epipalaeolithic Ohalo II (Nadel 2006) and Kharaneh IV (Maher *et al.* 2012) and the PPNA Upper Mesopotamian PPNA Göbekli Tepe/Jerf el Ahmar cultures.

[11]   In this respect, Trevor Watkins pointed out in his workshop introduction that humans always actively engaged with nature and formed their cultural niches in the gradual development from mobile foraging to sedentary farming to urban life, and that this does not mean that this evolution "was linear, substitutive or absolute; rather it was gradual and additive. Although triggered by conscious decisions, many consequences of human behaviour and decisions were unforeseeable." (Benz *et al.* 2014)

at around 6000 BCE. The introduction of new agricultural and pastoral standards (smaller farming set-tlements, irrigation, mobile pastoralism in the semi-arid fringes) with more adaptive socio-economic structures absorbed the consequences of these failure events. Failure and devolution processes were inherent to Neolithisation, but – at the end – they appear to have been essential for the overall successful establishment of productive lifeways in the Near East (Gebel 2002, 2004a, b, 2010a, b, 2014).

As the contribution of Nigel Goring-Morris and Anna Belfer-Cohen to this volume shows, and as also emphasised by Tobias Richter from the Kharaneh IV perspective during the workshop discus-sions, several of the characteristics commonly understood as typically Neolithic were already present in Epipalaeolithic communities: forms of sedentism, interrelated land and group identities, increasing amounts and variety of material culture with increased exchange between community networks, *etc*. The Epipalaeolithic was thus said to be transitional between Palaeolithic and fully-fledged agricultural Ne-olithic lifeways. Tobias Richter criticised the consideration that the Neolithic corporate was something fundamentally novel, and argued that the corporate nature of the (Epi-) Palaeolithic societies was never really discussed in separated Neolithic and Upper/Epipalaeolithic research. In our view, the latter is correct, and might be the source of the misunderstanding. Neolithic research never clearly defined what *corporate* means as related to the previous periods while – we think – it does not deny that higher levels of corporate behaviour were a key evolutionary characteristic of (Epi-) Palaeolithic societies. For the Neolithic we need to start speaking about the *confined corporate* (*cf*. Frame 1) and its confined reciproci-ties, contrasting it from the generalised Palaeolithic corporate condition and its generalised reciprocities/ sharing. This also should now apply to the use of the term *corporate identities,* which further should be qualified by either calling them *generalised* or *confined corporate identities*.

Before we list the most relevant features of Near Eastern Neolithisation related to our topic, we have to raise four additional and rather new issues, explaining more of the diversifying complexity we are dealing with:

1. Identities and property/ownership: Did the early productive milieus really develop property concepts close to the modern sense? At this stage of insights, it appears that only speculations about the sorts of property are possible. Individual property in the shape of accessories or attributes like ornaments, dag-gers (*e.g*. Fig. 7), domestic tools, *etc*. appears possible. In terms of land and house property, we do not expect that they were other than corporate property: The control/distribution of land use probably was subject of mutual agreement and corporate defence; its transfer into permanent household ownership would have required mutual acceptance and/or sorts of forced acquiescence. Mutually sustained (*e.g*. buildings like Fig. 2) types of mortmain property[12] may have existed aside household property. For ex-ample, the mutually sustained and confined territories of the mortuary and congregation locations for which the Upper Mesopotamian PPNA stands, may have been mortmain arenas in which several cogni-tive dispositions were served. Ancestral veneration, initiation, other elements of shared symbolism and belief, producing the confined reciprocal worldly and otherworldly legitimisation and habitus regimes constantly imposing the ruling value systems, and others, would be early examples.

2. Identities and conflict: Coalitional aggression often is expected to be the important result of Neolithic confined territories. While there is no clear evidence for heightened aggression/aggression levels among communities in the Neolithic, the many incidents documented by physical anthropology rather refer to increased interpersonal and innergroup rivalries in the crowded Neolithic villages and mega-sites. Instead, the often observed trends from small to large households during the PPNB (*e.g*. Fig. 9) and Pottery Neolithic helped to establish extended confined corporate reciprocities rather than reflect aims to minimise conflict potentials by raising the corporate input (Benz and Bauer 2013; see also Gebel 2010c, and other contributions in the special issue of Neo-Lithics 1/10 on *Conflict and Warfare in the Near Eastern Neolithic*). An investigation in mobile forager ethnography (Fry and Söderberg 2013) revealed that interpersonal aggression was the common cause for homicide; could it be that coalitional aggression still was not well developed in the flat Neolithic hierarchies, that their aggression patterns still related to the preceding hunter/gatherer societies?

3. Identities and time: Only recently has the issue of Neolithic time become a matter of discussion (Benz *et al*. in press, Benz in lecture). Time must have been a crucial matter of promoting complexities and thus identities. In general, one should expect that sedentary lifeways, mostly resulting in food, ter-ritorial, and other securities, as well as related increased human reproduction, provided new capacities of man power and thus time to all fields of production (material, cultural, ideological/cognitive). More

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[12] Mortmain ownership: inalienable, perpetual, not transferable

Fig. 3   Şanlıurfa, old part of city (10th – 8th mill. BCE): Well-preserved life-size sculpture (limestone) of a man with sexual gesture. (courtesy of the Göbekli Tepe Project; published by Schmidt 2012 as Fig. 93)

Fig. 4   Basta, LPPNB (second half of 7th mill. BCE): top right: Representation of a human face in the shape of an "amulet" (green marble; height: 48 mm), with sexual implication when turned/ if worn with string through the hole. (courtesy of the Basta J.A.P.; photo: G. Sperling); bottom right: Finished (?) representation of a human head, belonging either to a small figurine or an amulet (exotic ochre-greenish shist-like steatite [?]; broken at neck; preserved height: 43 mm). (courtesy of the Basta J.A.P.; photo: Q. Tweissi)

time for investments developed more natural and cultural resources and assets. Different understandings of time (cyclical and episodic time concepts, linear time concepts, for example; Benz in lecture) including its past and future aspects became a matter of successful production and investment, including the planning of food security by supply economies. Time itself became a matter of commodification that had to be structured and confined, and it accelerated goods and intangibles production when invested by growing populations. Even the past time was commodified when Neolithic traditions used ancestral values to claim territories or to establish relations with the otherworldly.

4. Identities and habitus/ideocracy apparatuses: Our recent research, initiated through a contribution (Gebel n.d.) to a volume assembled by Trevor Watkins (n.d.), identifies causes and potential explanations for the differences seen between the more imagined (ideocratic) and the more habitus-related communities in the northern and southern regions of the western Fertile Crescent[13]. Most likely these reflect two different and historically highly relevant Neolithic "mindset spheres" that may become essential for the explanation of Neolithisation and subsequent history. Life in boundaries, *i.e.* in the Neolithic confined/contained territories, needed and promoted new beliefs, rules and materials to help structure the interacting and shifting social, economic, ideological and cognitive settings. It appears that the structuring agencies were either predominantly habitus and ideocratic fuelled apparatuses/aggregates, helped the needed productively oriented adaptations in the spheres of landscape management, including abiotic resources, settlements, households, technologies, goods, labour, ritual and symbolism, the otherworldly, the corporate and identity, and *vice versa.* In our view, Neolithic, or confined, habitus and ideocracy regimes determined the ruling dispositions of corporate social and ritual behaviour, influencing all their cognitive dynamics. Both principles constituted an apparatus/aggregate, or regimes, at different shares, and apparatuses/aggregates differed regionally. While habitus-dominated communities requested more the dividual and the relational community, the ideocracy-dominated communities rather requested the individual and the imagined community. Ideocracy regimes are externally active, mostly medially supported by formal doctrinal ritual/religious or other ideological systems that generate power and legitimation; habitus regimes are instead internally active, hardly medially supported and less formal (or informal) ritual/religious or other ideological systems that generate power and legitimacy. PPNA Göbekli would be a typical ideocracy community, LPPNB Basta-Ba'ja would be a typical habitus community; for further definitions see Frame 1.

The Neolithic Identity[14]

Current identity research is mostly the subject of psychology and psychiatry, sociology and cultural anthropology, gender studies, education sciences, and other life sciences; (pre-) historic research barely considers identity a general topic; it instead isolates identity as being a matter of certain fields, such as defining sepulchral identities or technological identities. Sometimes, the term identity appears in the context of discussion of Neolithic traditions.

Identity research as it is pursued today (for example, as written in *Handbook of Identity Theory and Research* [Schwartz *et al.* 2011] or in *Identity: An International Journal of Theory and Research)* hardly can contribute directly to the study of Neolithic identity. The concepts, approaches and paradigms of involved sciences (psychologies, social sciences/anthropology, philosophy) focus almost exclusively on the western individual and its ethical, social and ideological dispositions, and do not refer to ancient societies or relational ontologies[15]. Identity formation here generally is seen as individuation, understanding identity as resulting from (the development of) a distinct and free will-driven individual that defines her/his identity by material and immaterial affiliations and the impacts and achievements on the ego received by them. Contemporary corporate identity research focuses on business and ideologically

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[13]   Cultural differences between the Southern and Northern Levant/Anatolia have been identified and discussed by several authors, especially Marion Benz (2012; Benz and Bauer n.d.; Benz *et al.* in press). However, here we try to identify the ideological background for these differences.

[14]   The following section is not the result of – or influenced by – literature work; instead it represents identity-related conclusions from year-long own research on Southern Levantine Neolithic features, mostly presented by the author in his various publications, and referenced there if based on other works (Gebel 2010a, b, 2013a, b, 2014). Acknowledgement is given at the end of the contribution to the colleagues with whom elements of this contribution's identity concept were discussed.

[15]   This, for instance, is the core of the problem why these disciplines (and with them the western institutions) are currently unable to assist the challenges coming up with southwest Asian refugees in western Europe. The western human image, especially self-perception, fails in front of the relational southwest self who arrive from their – often deeply rooted – corporate systems.

connected groups. Since the early seminal and fundamental Erikson/Marcian perspectives[16] on identity formation, research elaborated and still elaborates (*e.g.* Blumer 2013; Bauer 2016) on no other than western identity formation.

Therefore, Neolithic identity research needs to reflect cautiously on the results of current identity research on modern humans; it indirectly helps to identify Neolithic identity parameters and directly would create a more conscious use of arguments, provided that the fallacies and pitfalls are recognised. It would be quite interesting to translate the socio-cognitive model of Berzonyky (2011) on identity formation to the Neolithic; although targeting the modern individual, its translation might help to identify the "identity-processing styles" involved in Neolithic identity formation, and the "social-cognitive strategies used to construct, maintain, and/or reconstruct" identity. As for the Neolithic relational self, it might be better understood and preliminarily defined when contrasted with the characteristics of a modern western-type relational self (*cf.* the discussion and model presented by Chen *et al.* 2011). The modern "significant others" and hardly/less confined relational self, influenced by modern self-conceptions, self-knowledge and other self-aspects and strategies, might mirror arguments for what must have been different in the Neolithic. Another work appears useful: Spears (2011), reference to social identity theory and self-categorization theory, explains fundamental elements of group identities from a social identity as well as a social psychology perspective.

As for ethological/ethnographic research, identity is a rather rare topic; it is our impression that it only receives some attention in linguistic, ethnicity, and political ethnology.

As Neolithic identities are not an empirical matter, their definitions can hardly be based empirically, but only empirically "illustrated". In the following, we try to sort out elements for a preliminary definition of Neolithic identity. On the one hand, this definition omits elements that are difficult to trace in the Neolithic record or that do not yet appear to have had an essential influence in Neolithic identity formation; on the other hand, it considers identity features that may have escaped modern identity concepts. In order to receive an operable definition that is able to cope at once with the "fluidity" and potentials of the various Neolithic identity types, or the dynamics of Neolithic identities, we artificially separate between 1) the properties of the Neolithic self, 2) Neolithic identity aggregates/ apparatuses/ milieus, and 3) on scholars' approaches and perspectives on Neolithic identity. Needless to say, all these categories and understandings are far from Neolithic realities, but as a start they may serve our "Cartesian" thinking to approach this new topic of research.[17] To finally provide insights and interpretations compatible to the meronomic[18] Neolithic systems and lifeways, is a major challenge and demand of future Neolithic research (Gebel n.d.).

Neolithic identity formation operated at the cultural and cognitive intersection from general to confined identities when it became imperative to socially cope and manage the increasing diversification and specialisation in all spheres of social, economic, ritual, and cognitive productivity.

The Neolithic Relational Self, Properties (Hypotheses)

The properties of the Neolithic relational self include:
- Neolithic group self: Neolithic group "selves" are themselves confined relational "selves" that "own" their confined dividual relational self/members by using habitus-ideocracy regimes to reproduce group identities (*e.g.* Hodder's "aggressively egalitarian" Çatalhöyük society with evidence of sanctions targeting cases of social deviance).
- Neolithic confined relational self: a person's self defined by and from the group, in and by which it exists on account of personal/individual desires and needs and to which all its well-being is related. The

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[16]   Erik Erikson emphasises that identity results from the personal psychosocial development, which is much influenced by experienced crises and conflicts (*e.g.* Erikson 1968). James Marcia in his more structural approach defined four identity statuses (diffusion = similar to Erikson's role confusion; foreclosure; moratorium; and achievement), mainly referring to adolescent development (*e.g.* Marcia 1966).

[17]   The artificial separation of identities and identity elements, especially that of cognitive identities from identity classes, is a typical outcome of this thinking: Already these classes go astray and do not respect the relational character Neolithic identities had.

[18]   Neolithic meronomical thinking: a knowledge management and cognition using merons expressing "part–whole relationships", as opposed to taxons in modern thinking expressing discrete hierarchies/ categories ("part-of relationships"). Meronomy/ mereology allows interpretations to come closer to Neolithic conceptualization, construction, composition, and thus ontology. (*cf.* Gebel n.d.)

Neolithic relational self was probably greatly strengthened by an "aggressively" (following the wording by Ian Hodder) forced acceptance of the group's ethos, including ancestral/parentage ethos; high identification of the personal/personhood with the peer; characterized by highly limited negotiation of personal identity through social taboos; a tendency for high risk of social exclusion and sanctioning for deviant or dissident behaviour or acts.

- Neolithic self-identities (*sensu* self-concept): a group or a group member's understanding of its self; steered mainly by the ruling ideological (habitus and ideocratic) apparatuses and sustained by productive and autocatalytic material milieus; the dividual's self-conception and expression develops only in/with the general group's self-concept (including its gender perceptions), and which must have also provided the limiting frameworks of special self-identities (chiefs and other elite persons, individuals with special competencies *etc*.); self-identities may modify from superordinated group-identities, or have stronger shares of one or other identity aggregates, apparatuses or milieus, such as group members specialised in stone masonry, tatooing, healing, mobile herding, gathering minerals; identification with a certain social responsibility, image, craft *etc*. may create special identity attributes and establish small-scale intragroup hierarchy, but only in the limits of the ruling framework of self-identity.

Potentially relevant other aspects of the Neolithic self involve self-discovery (such as shamanistic or other outstanding capabilities); self-esteem (political, occupational or other competencies); "self of the other" (identities of outstanding others – mostly individuals – living and acting outside the commonly accepted social norms while respected for their special [dis-]abilities, attributed power or agency, and the like).

The Neolithic Identity Domains

All identity formation in the following domains (aggregates, apparatuses, and milieus, all representing different levels on contexts) is steered by the inherent ruling cognitive identities, their development and resulting dispositions, as well as by the related value creating (commodification) systems. Affiliations to various Neolithic identity domains have to be expected as common and firm for the relational dividual and relational group self while a greater participation in many and overlapping identities domains may have been reduced in Neolithic times as compared with later periods.

- Territorial identities were created and influenced by the emerging Neolithic behaviour to use confined/contained/separated permanent (resident) physical or intangible spaces/territories. Such spaces/territories cannot easily be given up because physical residencies and metaphysical/ideological occupancies and related dispositions have no immediate spatial or territorial alternative and/or are inescapable. These occupancies become ideologically and cognitively supported and defended by confined territorial identities. Confined Neolithic identities may directly develop from "built" land and its resources, boundaries and routes; built spaces including graves; metaphysical/ ideological/cognitive territories and interacting ideological/belief, habitus, magic, symbolic, and other systems associated with comfort and safety; the generalised territorial identities of hunter-gatherers result from none or less resident occupancies and were mostly escapable.

- Socioeconomic identities combine family/clan/community identities that "employ" household, ancestral, and adoptive identities; gender identities; symbolic/ritual/habitus and ideocratic/belief identities; and occupational and other task identities. Among the social identities, household identities possibly had a leading and most sustainable role in identity formation.

- Cultural identities are formed by the participation in cultural practices and processes that help to feel/are intersubjectively rewarded by belonging to this confined socio-cultural entity. They depend on commonly sustained and defended behavioural, ritualistic and ideological substrata and traditions, especially ancestral domains. Neolithic aggregates, apparatuses and milieus of cultural identities specifically were the various commodification regimes generating material- (*sensu* production and consumption) and immaterial-related (*sensu* ideological and cognitive) identities that support the symbolic systems, including songs and narratives (*e.g.* "narrative identities"), dances, and the like.

- Spiritual and moral value identities involve Neolithic aggregates, apparatuses, and milieus specifically supported by visual means (imagined, doctrinal *sensu* ideocracy), ritual practices (imagined and habitus, doctrinal *sensu* ideocratic and habitus), and social control. Various types of commodification generate the material and immaterial equipment of the spiritual and moral identities. Political identities resulting from social organisation and responsibilities need to be separated from the spiritual and moral value identities once Neolithic research is able to discriminate the relational of these.

Potential relevant other Neolithic identity aggregates, apparatuses and milieus:

1. Ethnic and linguistic identities, although it is unclear to what extend ethnicity and language were

crucial in Neolithic identity formation. Instead we deal with ancestral identities, with rivalries, and aggression potentially resulting from these. However, ethnogenesis and/or tribalism (the development of ethnic and/or tribal identities) could well have arisen with the end of the PPNB when mobile pastoralism, central settlements, and a firm diversity in subsistence modes was established.

2. Gender identity, yet again it is not clear if a gender binarism occurred in the Early Neolithic. From the hunter-gatherer social identities there was/is a kind of gender binarism certainly related to tasks in the working and migration spheres, but it is well imaginable that the confined territoriality of sedentary domestic life fostered an advanced gender binarism until the end of the Neolithic. Material culture provides increased evidence of gender roles (*e.g.* Morsch, this volume).

The Scholars' Approaches/Perspectives to Neolithic Identity

At this stage of research little comment can be made on needed epistemic standards, especially those related to a transdisciplinary practice (*cf.* the General Conclusion below). Before negotiating these, we have to elaborate the arguments about why corporate identity is an important and useful concept in Neolithic research. This contribution aims to contribute first definitions and thoughts for this negotiation. Only as a next step should the epistemology and transdisciplinarity of the concept be defined, which needs to be covered at least by the social-cognitive and behavioural sciences, palaeopsychology and social anthropology, aside from prehistory.

But already at this stage we have to train our awareness for the personal and topical ingredients that may enter our Neolithic identity research. Today, *identity* has become again a politically dangerous concept and aggregate in many national and international contexts, mostly aiming to identify, discriminate and exclude "the other". These identity constructs may become active in hidden ways in our research and ideologise our Neolithic perspective on identity (and in some way on the confined corporate). The key orientation in constructing the Neolithic corporate and Neolithic identity has to be the use of empiric data that reduces potential fallacies. Other important problems of Neolithic identity research are, of course, 1) a needed awareness of the sometimes idiosyncratic attitudes of involved disciplines; 2) the general danger of missing argumentative and transparency of term definitions in a transdisciplinary research; and 3) one's very own preconceptions and even idea of man.

However, the most fundamental problem of Neolithic identity research is the "prison" of our taxonomical thinking by which we want to describe and analyse a past relational feature which is the product of meronomical thinking. How, at the end, can we finally understand the ontology of Neolithic identity if we are caught in structural epistemic frameworks?

The Expiry of Confined Corporate Identities?

It is supposed here that the Neolithic enabled a new quality of the general and basic ethological disposition of humans to recognize others or "the other" as something distinct, especially when stress demands the strengthening of one's own identity in increasingly complex social environments. On the other hand, it is suggested here, too, that the dividual confined relational self is less affected by such distinction and stress as long as personhoods remain strengthened by the association with her/his own group. Once the pressure of Neolithic productive environments led to the categorisation and stratification of roles and positions, processes and mechanisms, means and norms to secure achievements characterised by acceleration and aggregation (the example of Basta and Çatalhöyük: Figs. 9-10), as well as progressive population dynamics, the interrelated organisation, structures, and trajectories started to move towards standards that can work without confined relational identities: New territories of consciousness and creativity in the Levantine and Anatolian cultures between the 8th and 7th millennia BCE are expected to have promoted cohesive frameworks of innovation and capacity building/adaptivity/creativity in which skills, knowledge, and cognitive investment were transmitted on supra-personal and supra-communal levels, reducing the relational confinement of production and developments as well as minimizing risks (Gebel in lecture). A good example is the decline in household production as the dominating and sustainable socioeconomic fabric in Northern Mesopotamian Post-Neolithic times (Bernbeck 1994).

One remark should be devoted to our notion of identity stress. In productive settings that needed ongoing commodification of identities to flourish, disturbance in any identity system may have lead to collapses of other identity systems, provided that identity shifts could not take place in time. Good Neo-

Fig. 5   'Ain Ghazal, MPPNB (first half of 8th mill. BCE): Representation of three human plaster faces (front views) modeled on crania and found in burial pit cut into a culturally sterile layer. (courtesy of the 'Ain Ghazal Research Project and the Arthur M. Sackler Gallery of Art, Smithsonian Institution; published by Grissom and Griffin 2013 as Fig. 6.1.1)

Fig. 6   Basta, LPPNB (second half of 8th mill. BCE): Fragments of (painted) marl and sandstone rings (diameters *c.* 60-80 mm), probably serving as coupons of confined reciprocity ("commodities of metamorphosis"). (courtesy of the Basta J.A.P.; photo by M. Nissen)

lithic examples for such events are environmental deprivation, demographic impacts, social disturbances/scalar stress, village fissioning (*e.g.* Bandy 2004) caused by unmanageable acceleration and aggregation processes, prompting people to give up lifeways and follow new or other subsistence and supply modes.

Confined corporate identities are, in our view, timeless phenomena once they are related to productive traditional milieus. The study of sub-recent and recent confined corporate identities like present-day Bedouin still living in the desert may provide aspects for the Neolithic identity discussion.

The Neolithic Corporate

In the following, we describe and define the Neolithic corporate (*cf.* also Frame 1)[19], in particular the confined Neolithic corporateness. While this contribution considers Neolithic identity mainly as a re-search-constructed feature of the social, the corporate is considered as mainly referring to behaviour in the social and cognitive spheres.

Neolithic research has revealed that corporate behaviour developed new characteristics and properties through Neolithisation. The nature of corporate behaviour transgressed from generalised to confined behaviour and qualities, meaning that by the Neolithic establishment of diversified and specialised social entities the reciprocal systems became confined to these entities. Different from the socially more open or "permeable" hunter/gatherer groups, the increasingly spatially bound or spatially abutting Neolithic groups had to restructure their relational apparatuses and aggregates. The hitherto generalised reciprocities had to become confined to the own group, now occupying new types of confined tangible and intangible spaces. These new physical, socio-economic, ideological and cognitive territories also demanded the new confined and corporate relational self, "aggressively" devoted to and possessed by its confined group. The incorporated Neolithic relational self, or the relational dividuals, were forming previously unknown group sizes and communities, using new modes in socio-economic and strategic alliancing. Intergroup exchange in favoured regions may have established supra- and super-levels of socio-political and ideological organisation. The small hunter-gatherer bands and their generally less devoted alliances may have long existed beside the confined corporate lifeways of the favoured regions. But if pressure for mitigation was triggered, even late hunter-gatherers had to develop confined reciprocities and corporateness. An example are the grasslands of Northern Mesopotamia which became crowded during the Early Holocene through their abundant wild cereals; here, competition over resources must have been balanced in congregation centres by using a corporately followed ideocracy and mind to serve a coherent whole, *e.g.* in what appear to be the PPNA Göbekli – Jerf el Ahmar cultures. From the beginning of the Neolithic, corporate signs creating corporate visual identities and symbolism, as well as corporately active habitus and ideocratic apparatuses, helped to form supra-regionally unified social bodies with unified value systems and cognitive milieus, or Neolithic cultures. Confined corporateness among same-identity groups but unfamiliar with each other, especially the non-verbal visual messaging, must have received importance in the human behavioural systems.

The corporate environmental, social, economic, ideological and ethical behaviour, by which the confined relational groups consisting of relational self formed, shared and maintained their tangible and intangible properties (from material spaces via skills and signs to beliefs), aimed to secure shared lifeways and related structures (*cf.* Gebel 2014: "Conservation Thesis"). The corporate behaviour is characterised by shared commodification standards supported by confined reciprocity acts and events (*e.g.* joint production, feasts, rituals) which promoted/increased mutual dependence and mitigated potential conflicts. Corporate behaviour is confined to one's own group; assumes personal risks for the peer group; is conditioned by joint interests in shared habitus and ideology; and possibly values the direct corporate above the imagined communal. Corporate activities may not necessarily take place for an immediate and specific – or for any rational tangible or intangible – benefit, and may just have functioned to strengthen the various self and group self.

The Neolithic Corporate Identity

From their social phenomenology, Neolithic corporate identities belong to the collective identities. Different from later societies, corporate identities dominated Neolithic societies and co-existed with only a few other identities types, such as gender identities or the special self identities of outstanding individuals like shamans, healers, chiefs, "occupational self". Otherwise, as pointed out by Marion Benz (this volume), corporate identities could be highly situational, meaning that it depends on contexts which parts of a corporate identity gained relevance in certain situations for the group; corporate identities could become multiple when identity aspects of these identities were contradicting or mutually reinforcing. Whatever "sub-identities" situationally composed, or especially outstanding self-identities became

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[19]   The term "collective" has been avoided for its very general connotations: "corporate" underlines the forcing nature inherent in the social and behavioural features of the Neolithic.

Fig. 7   Ba'ja, LPPNB (second half of 8th mill. BCE): Flint dagger (length: 183 mm) of an elite burial, probably representing a personal status item. (courtesy of the Ba'ja N.P.; photo: H.G.K. Gebel)

Fig. 8   Basta, LPPNB/ PPNC (second half of 8th and/or early 7th mill BCE): "Figurine hoard" left at the bottom of a stone robbing pit as an act of confined reciprocity. Top left to right: resting bear (sandstone; height: 44 mm), seated gazelle (limestone; preserved length: 72 mm), ram "amulet" (bituminous limestone; height: 78 mm) with a male – female symbolism. Bottom: bucranium "amulet" (burnt clay: height: 45 mm). (courtesy of the Basta J.A.P.; photo: H.G.K. Gebel)

active, at the end they had to be devoted and subordinated to the rule of the peer group's general identity regime. A de-construction of the general corporate identity regime must have started with "sub- or part-identities" becoming "non-corporate".

Confined and corporate relational self formed the group's relational self. The individual member was embedded in the advantages of the peer group's risk-buffering while the peer group could rely and demand the relational self's confinement. The overall rule of the confined corporate must have functioned as a system of permanent intragroup reproduction of dependencies while the extragroup relational must have followed similar principles; the latter topic will be an essential challenge for Neolithic identity research.

However, there is a basic distinction to be made between the Neolithic corporate identities and historic-modern corporate identities when they relate to predominantly habitus apparatuses: The former basically represent intrinsic identity systems while historic-modern corporate identity formations rather emerge from imagined corporate identities, or the performance of identity generating processes. An early and historically possibly outstanding onset for imagined corporate identities are sites like Göbekli, reproducing the relational and intragroup cohesion and stability mainly by a visually propagated and doctrinally shared symbolism. But even this appears debatable: Aren't imagined identities also behind the Palaeolithic iconographic cave programmes and were a substratum of Göbekli-type of identity formation? Is the formation of the imagined corporate really a historic-modern attitude, or isn't it a rather "ahistoric" principle in any human corporate identity formation?

For the initial discussion of the confined Neolithic corporate identity we see four topics as relevant:

Corporate Identity Formation

The processes of Neolithic corporate identity formation, as well as processes of their de-construction, were basically the result of permanent social interaction and negotiation. Neolithic identities and their parts are highly reactive, adaptive, and situational. They are constantly negotiated in Neolithic societies while able to provide long-term stability through these characteristics, as also Trevor Watkins pointed out in his workshop introduction.

The cohesive image of the relational group self and the dividual relational self is designed by shared perceptions of reality and the otherworldly; by the understanding of equality; how things have to be handled, connected, and distributed; and how this image can cooperate with the identities of the relevant/related others outside one's own group.

Gary Rollefson's "I am We" concept (this volume) elaborates a most important goal of Neolithic corporate identity formation: He stresses that beyond the integrative function, corporate behaviour allows an increased exclusion and segregation which came up with the larger communities transgressing from generalised to confined identities during their way to sedentism and farming. Social segregation flourished, sharing behaviour became confined, new discriminators (*e.g.* inalienable possessions such as special places, ceremonies, ancestors, plastered skulls, trash burials) were used, and sodalities or even larger communities established. For the exclusion and segregation arguments we refer to Rollefson's work in this volume since this contribution not really can make them a topic.

Amy Bogaard's seminal archaeobotanical approach (this volume) is a guiding example for the research on Neolithic corporate identity formation. Her question whether supra-household "cooperatives" operated crop production, storage and food use in Çatalhöyük's subsistence at first glance challenges our notion that the confined Neolithic corporate identities are "used" by smaller groups, and that corporate supra-group may have existed without confinement. In our view, the Çatalhöyük evidence illustrates that formation of corporate identities must be expected for all levels of a social organisation, respectively that supra-levels in social organisation may have triggered more complex bodies participating in a corporate identity. However, Çatalhöyük's "cooperative farming" needs to be seen in the site's other identity contexts which indicate – in our view – more such supra-structures.

Another outcome of the Basel workshop discussions is the notion that the formation of corporate identities just relates to specific socio-economic structures, and "in the end perhaps discerns an evolution of corporate identities on the long run, as requested by Trevor Watkins" (Benz *et al.* 2014). This understanding (related to specific socio-economic structures) in our view is most appropriate. Only we see that 1) most socio-economic structures of the Early and Late Neolithic were needed for corporate identities (*cf.* our previous remark on Neolithic socio-economies not developing corporate identities), and that 2) the partial replacement of the corporate relational identities by structural identities (that is, through the progressive social stratification in the Near East's Chalcolithic and Bronze Ages) becomes a need for the social organisation of towns, cities and early states, while 3) confined corporate identities continued to flourish in the remote – especially arid and semi-arid – and traditional mobile and sedentary societies in the Near East.

Ideocracy and Habitat Apparatuses in Corporate Identity Formation

Corporate identities result from shared ideological and cognitive substrata that seem to have developed during the Neolithic between two poles: habitus and ideocratic aggregates. For decades Neolithic research has discussed differences between the Northern and the Southern Levant, has presented empirical evidence for these, but has rarely reached conclusions on the different mindsets created by and creating this evidence. A first access to this has been made (Gebel n.d.).

It is especially from the Göbekli findings that it became unavoidable to discuss the different and image-related medial behaviour and other backgrounds of the Northern Neolithic (from Göbekli to Çatalhöyük) when contrasted with the iconographically poor Southern Levant. There, such messages were missing, while plastered skulls and other features of the relational demanded explanation (*e.g.* Benz 2012). The discussions of the 2012 Templeton Conference in Şanliurfa on Göbekli Tepe, and here especially the ones referring to the doctrinal power of the Göbekli images, encouraged the author to coin his definition of an Early Neolithic *ideocracy*; the impetus for this – in direct and indirect ways – were the statements made there by Trevor Watkins, Klaus Schmidt, Mehmet Özdoğan, Kim Sterelny, Joachim Bauer, and others. Since there was little reaction to this seemingly strange term, further understanding

Fig. 9   Basta, LPPNB (second half of 8th mill. BCE): Pre-planned lower storey groundplan (15,4 x 10,7 m) of an extended family's/ group house, effectively, the architectural manifestation of the smallest corporate household unit at aggregated Basta. (courtesy of the Basta J.A.P.; photo: Y. Zu'bi)

was elaborated in Gebel 2013a. Only research for Gebel n.d. generated the basic issues of the ideocracy-habitus concept, explaining that the south relied more on habitus-generated identities while the north followed more the imagined ideocracy-supported identities, while both are always part of one identity at regionally different shares.

Habitus and ideocracy are two ruling dispositions in corporate social and ritual behaviour, influencing and dominating cognitive dynamics and the learning by participation[20]. While *habitus* more generally demands a dividual relational self, *ideocracy* more normally creates an individual relational self. Both dispositions helped to establish relational groups and communities and did not permit other behaviours beyond one's own groups' and communities' confined spheres (which would be severely sanctionised, possibly leading to exclusion?). Stable habitus and ideocracy regimes can be called *apparatuses,* when modified by forceful needs for adaptation, habitus and ideocracy regimes can be called *aggregates* of identity formation.

The following characteristics appear to have been relevant in Neolithic corporate identity formation (thesis): Habitus apparatuses are internally active – scarcely medially supported – and less formal (or informal) doctrinal ritual/religious or other ideological systems that generate the power and legitimacy to create and maintain hierarchies, symbols and (other) value systems, and their structural means (and *vice versa*, of course). Transfer and control of ruling social idioms/prosocial behaviour is through internal modes characterised by a high degree of social control/care, often supported by informal esoteric competency. They operate more with "merons" (*cf.* Gebel n.d.) and inherited codes. Ideocracy apparatuses, at the other pole, are externally active – mostly medially supported – and formal doctrinal ritual/religious or other ideological systems that generate the power and legitimacy to create and maintain hierarchies, symbols and (other) value systems and their structural means (works *vice versa*, too). Transfer and control of ruling social idioms/prosocial behaviour is through external modes, often supported by formal esoteric competency; it operates more with "taxons" and formal codes (Gebel n.d.).

Symbolism and Identity Markers in Corporate Identity Formation[21]

Göbekli's strong message to Neolithic symbolism research dramatically alters understanding and concepts, to an extent that should make us afraid of an "Göbeklisation" of Neolithic research: The infor-

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[20]   In terms of learning theory, learning by participation in habitus and ideocratic social environments is, of course, different: While the former goes with observation and imitation by direct contact with the peer, the latter is more associated with apersonal and doctrinal supra-peer messages.

[21]   For symbolism and identity formation, we refer to the contributions in the third part of this volume. The topic is raised here for its importance in the socioeconomic lifeways.

Fig. 10 Çatalhöyük East, middle phases (first half of the 7th mill. BCE). Artistic reconstruction of the aggregated settlement layout, illustrating the "aggressively" aggregated and confined nature of corporate life at the site. (courtesy of the Çatalhöyük Research Project; artist: J. Swogger)

mality and otherwise poor visibility of habitus symbolism is archaeologically less forceful in conveying its message to Neolithic research; it therefore became urgent to discuss the "opposed" habitus concept.

Among others, Marion Benz stressed in her workshop contributions that there are decisive differences visible among early Holocene groups regarding their symbolic behaviour, that there were communities in higher need to demonstrate their group identities by strongly standardised symbolic systems. But how did these needs come up? Did they exist in pre-Neolithic times? What were their fates in the later Neolithic phases? Benz and Bauer approached these questions of symbolic identities earlier (2013) and in a rather fundamental way.

In our terms, standardised symbolic systems and imagined confining corporate visual identity develop interdependingly when the necessary organisational structures have to integrate larger groups on their way to form *super-communities* (Trevor Watkins's term), especially because they operate on relational social levels and have to reach parts of their society that they do not know by contact. The symbolism of the imagined corporate visual identity provides the means to express, promote and remind values and demands of the "anonymously" shared lifeways (Benz and Bauer 2013b). The PPNA Northern Mesopotamian "crowded grasslands" would have created the typical conditions and needs for an imagined corporate visual identity. The main characteristics of this type of productive symbolism appear to be: visibility in prominent and special places and by daily presence/use in the culture; recognisability by standardised visual messages; harmonising identification of the corporate relational self with the symbolism, promoted on all levels by these symbolism-based mutuality systems; and alignment of belief, self-esteem and reputation by constant repetition and congregation.

In the following we can only hint at some aspects of the evidence for the symbolism and identity markers in corporate identity formation. For the mediality topic (use, processes, contexts, emotional and social impacts by a medium/media including all forms of related identity markers) we refer to Benz this volume.

Individual identity markers to our knowledge do appear in the Near Eastern early Neolithic only in the shape of group or personhood markers (*e.g.* all the "accessory" categories) and not for individualistic expression. However, personal styles are "felt" in one or the other context, inventory or technique, especially in burials and crafts, representing there another type of identity marking. Marks in the shape of stone-cut symbols and signs, as known from the supposed PPNA Göbekli/Jerf el Ahmar cultural entity, certainly also stand for corporate identities and the generating of mainstream identification.

The complex interrelation of symbolic, marking, social function, and tangible value represented in one item is best illustrated with the stone rings of many Near Eastern PPNB sites (*e.g.* Fig. 6). If the interpretation is correct, that they are coupons of symbolic exchange to maintain symmetrical reciprocity (Gebel 2010a), they would have acted as a "social currency" to balance the relational by "artificial"/ symbolic means of mutual obligation. Another example for such complex interrelation is represented in *do et des* acts, or practices, like the one reported from Basta (Hermansen 1997) (Fig. 8). However, we have to expect that even the exchange of "normal" assets having no such visibility or recognisability carried symbolic meaning, communicated shared identity, and had a unifying message.

Nice examples of identity markers are presented by Michael Morsch in this volume. He traces similar traditions of hairstyles and clothing from the T-shaped pillars and human figurines of Göbekli

Tepe and Nevalı Çori to the wall paintings at Çatalhöyük[22]. Confined ideas existed about dress codes and how men and women should be represented. The persistent nature of these standardisations and imagination across cultures and regions indicates a deeply rooted identity marking, related symbols, and messaging practices.

To what extend architectural traditions, or other traditions, are to be understood as identity marking has to be subject of future research.

Social Hierarchies and Corporate Identity Formation

How did corporate identity formations influence social hierarchies and hierarchisation trajectories? Among all the fundamental identity-related questions, this topic is the most difficult since it works with two constructs of which none touches directly any empirical grounds as the previous three do. Basic further research has to be invested in the social hierarchies – corporate identity formation topic; here, only some basic considerations, or questions, can be presented:

Confined corporate identities do not seem to demand much stratification in social hierarchies, or even oppose them other than flat-topped hierarchies. Moreover, the corporate itself must be imagined as the instrument to keep communities symmetrical and balanced, which otherwise would be disturbed by sorts of conical social stratification. Well then, what sorts of hierarchies did the confined Neolithic corporate identities need to function?

Again, the Göbekli evidence, especially its interpretation by Lee Clare (pers. comm.) may provide a starting point, together with the habitus and ideocracy apparatuses – concept. Provided that we deal in the supposed PPNA Göbekli – Jerf el Ahmar Cultures with super-communities *sensu* Trevor Watkins, meaning supra-regionally distributed groups sharing the same identity but not knowing each other: How can social, ritual and cognitive alignment work without some forms of hierarchies among communities that are not in contact with each other?

We have already elaborated that ideocracy apparatuses can create and align imagined and confined identities. But who is using this instrument? Unlike the habitus communities, in which the generally active social forces headed by possibly chief-like institutions control identities and identity formation, ideocratic systems are not self-ruling and need a control by representatives of the ideocratic system. At this stage of speculative interpretation, the concept of Lee Clare's "corporate male elite groups" comes in, taken up from notions of Mehmet Özdoğan (2014). In a statement once drafted for this volume's topic, Lee Clare emphasized that the PPN corporate male elite groups, representing the "key players" of what were likely "patriarchal gerontocratic" societies, balanced and guided their societies by using the media and symbols they represent. "The apparent absence of intergroup violence in the archaeological record of this time" supports this. He sees "the decline of the PPN systems, marked by settlement abandonment and the disappearance of monumental ritual architecture and statuary", connected with a "dissolution of the previously prevailing dominant male corporate elite groups, probably linked to the commodification of coalitional aggression" coming up with the new societal elements in the Late Neolithic. This notion and trajectory (towards habitus communities and new agro-standards from around 6000 BCE in Central Anatolia and Upper Mesopotamia) would fit well with archaeological records, indicating that ideocratic systems were also operating with flat hierarchies using elites equipped with ideological competence and guidance. This example, however, is presented here also to indicate that corporate identity formations in ideocratic regimes may have also promoted the individual and may not necessarily have needed stratified social hierarchies while most likely preparing the foundation for them.

The Neolithic Identity Aggregate (Graph 1)

We imagine that the confined Neolithic corporate identities were more or less regionally contained parts of social aggregates in which the cogwheels of confined territoriality regimes, confined commodification regimes, and confined ideocracy and habitus apparatuses operated together with the confined Neo-

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[22] Neolithic human representations (*e.g.* Figs. 3, 4a-b, 5) at first seem to carry symbolic meaning before they may serve messages of group identities or portrait. Complex representations combining elements of human and other creatures (*e.g.* Fig. 1) or of the male – female (Figs. 4a, 8 "ram") seem to carry only symbolic meaning. The general scarcity and cultural diversity of Neolithic human representations make it very difficult to use these classes of artefacts as sources for identifying developments in identity formation.
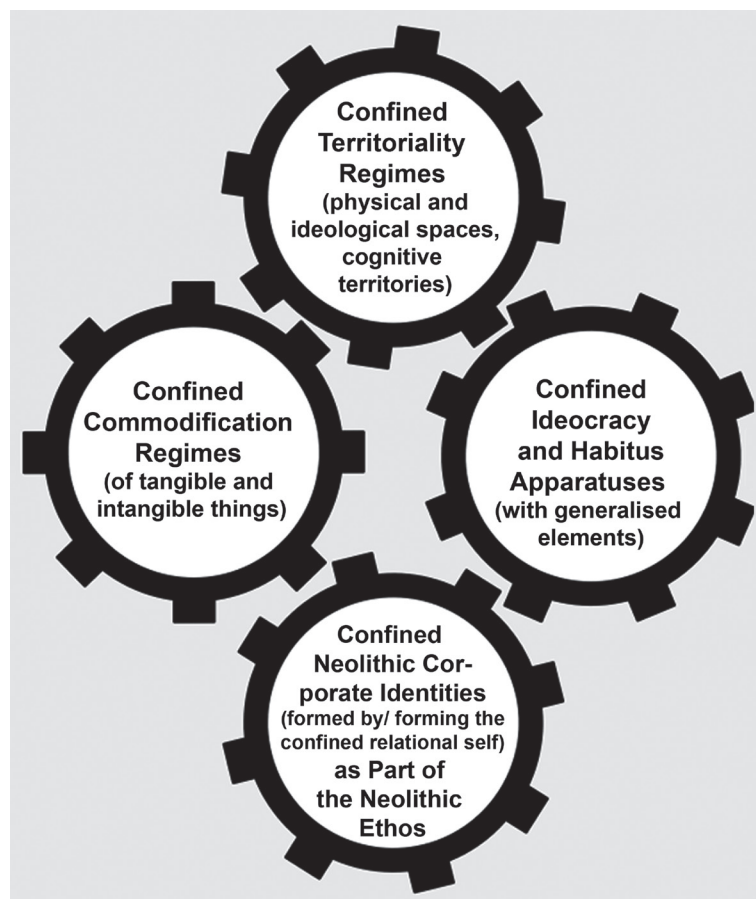
lithic corporate identities forma-
tion. While the image shows that
identities are moved, essentially
are commodified, by the three
other regimes, it also explains that
no wheel can turn independently
from the others' speed. It ex-
plains that identity formation and
de-construction gains its momen-
tum from events and develop-
ments in the other three regimes,
and that any rattling by one wheel
would affect the momentum of all
the others. The *Neolithic Identity
Aggregate* in Graph 1 is simpli-
fied and so far ignores relations
such regional aggregates had with
neighbouring Neolithic corporate
identity aggregates or neighbour-
ing (Neolithic) identity aggre-
gates that were not corporate and
confined in the Neolithic sense
(societies still practicing general
reciprocities with or without pro-
ductive lifeways).[23]

Graph 1   The Neolithic Corporate Identity Aggregate: Confined
productive regimes commodify corporate identities (simplified and
seen regionally: interaction/influence with/of co-existing societies with
generalised reciprocities outside the aggregate are not considered).

The General Conclusion

Neolithic corporate identities were
governed by three interdependent
and interacting regimes: ethologi-
cal and evolutionary dispositions,
socio-economic substrata, and ideological/cognitive systems. In the Neolithic they constantly dealt with
accelerating productive milieus through which they modified and changed the Neolithic ethos. These
were the common grounds for identity formation with relational self. All identity shifts were controlled
by the need to sustain and promote the tangible and intangible territories of the productive milieus,
by constantly creating and modifying values (commodification) in shifting polycentral and polycausal
webs. From the Neolithic onwards, productive commodification regimes began also to rule identities in
the evolutionary and ideological developments, more and more using ideocracies, ethical dispositions,
and complex tangible and intangible properties to promote/advance/support social, ritual and political
stratification.

  Neolithic corporate identities cannot be discussed without understanding the general trajectory
of permanently diversified and segregated identities. The more acceleration and aggregation took place
in the productive systems, the more transformation and collapse events were triggered by such "hyper-
trophic" Neolithic events, paving the way for historically new types of identity regimes (expressed also
by T. Watkins in terms of evolutionary development in his introduction to the ICAANE Workshop Sec-
tion 1, and this volume). However, in general, one may conclude that the confined Neolithic corporate
identity concepts were of principal influence for longer periods in most Near Eastern Neolithic regions
until the start of the proto-historic developments.

  The Neolithic corporate identity concept, or construct, and approach is at its very beginning and
offers the chance to – idealistically seen – restructure Neolithic research, if this beginning is used to en-

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[23]   For its extended contexts, the identity cogwheel of Graph 1 should better be labelled *ethos*, since identities themselves
are only part of the Neolithic ethos (Gebel 2014, n.d.); for the sake of simplicity, this has not been considered further in this
contribution.

ter transdisciplinarity[24] modes into Neolithisation research. The latter becomes more and more needed since the multidisciplinary contexts of Neolithic results (including constructs like identity) become more and more complex through progressing research intensities. In addition, the identity topic itself requires involvement of socio-cognitive, behavioural sciences, palaeopsychological, social anthropology, and other approaches; their cooperation urgently needs epistemic grounds. Since Neolithic identity is central for the historic understanding of Neolithisation and is at its beginning, transdisciplinary research on it can bear fruit and start to re-structure other Neolithic research fields.

The other great challenge of the topic, or of all other Neolithic topics working with constructs, is connectivity to the material base. When constructs do not operate with testable theses and term definitions, and do not have transparent empiric substrata, they remain to be interesting ideas.

Acknowledgements

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[24]   In short, transdisciplinarity means the capacity of involved disciplines/researchers to develop research questions and agendas only jointly with their partners; to constantly update the joint crossdisciplinary discourse; to examine and discuss the contradicting results of the other disciplines until sound disciplinary conclusions can be drawn and results can jointly be formulated and presented. Transdisciplinarity is idealistic, time-consuming, and painful, but the only way to progress in the complexity of the evolutionary and historic meaning of Neolithisation; it avoids isolated perspectives, reaches epistemic transparency, and is an act of historic responsibility.

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Frame 1 Key terms used in this article for describing Neolithic lifeways (definitions not yet published by author).

confined	when related to human cognition, disposition, behaviour, devotion, reciprocity, productivity *etc.*: bound, restricted or strictly related to the one's own group and its relational self, otherworldly spheres, habitus, ideologies, values, *etc.* when related to tangible and intangible things: all territoriality and commodification care for things/ properties that are limited, designed, suitable, or useable only for specific groups and their relational self. confined corporate/corporateness: not a tautology but a distinction from generalised corporate behaviour/corporateness allowing to identify casual alliances, participation, benefits, or exchange with the milieus and domains of "the other" which are unsanctioned or have no consequences for the own group's corporateness; generalised Neolithic corporate behaviour, specifically tolerated or demanded "excursions" and transgressions into the others' milieus and domains, are expected to have casually occurred with and in the otherwise confined corporate systems.
corporate (confined corporate/ corporateness)	a general term for confined behaviours in Neolithic socioeconomic and ideological milieus by which social entities (confined relational groups/bodies consisting of confined relational self) develop and share coherent tangible and intangible properties (*e.g.* material spaces, goods and food, skills, policies, beliefs, minds, ethos) and related identities with and for their group to secure the own lifeways and their structures. Shared standards in territoriality, commodification, ideological regimes supported by visual, symbolic, non-verbal *etc.* traits) apparatuses are supported by acts of confined reciprocity (*e.g.* joint ventures, feasts, rituals) which maintain/increase mutual dependence and decrease potential conflicts. Corporate behaviour is confined to one's own group and its assets, or, when extended outside one's own group, conditioned by group interests; it generates corporate cultures and sub-cultures that may develop exclusive or other confined sectors (especially in the socio-political and socio-spiritual spheres). Those who leave a confined corporate system may be socially ostracised. Corporate refers to behaviour, communal to (Neolithic) organisation/structure. Corporate activities may not necessarily take place/be guided for an immediate or for any rational tangible or intangible benefit. Generalised corporate behaviour, or unbounded corporateness, may appear in regimes of confined reciprocity, too (*cf.* the definition of "confined"; it is otherwise characteristic for foraging societies).
ethos	the fundamental character and resulting behaviour of group members, groups, communities, and societies sharing cultural, ideological and cognitive dispositions, and the underlying sentiments for mutual values, ideas, symbols and practices. The Neolithic ethos is characterised by generalised and confined reciprocities and productive behaviour.
habitus apparatuses/ aggregates (from Gebel n.d.)	the systems in which the dominance of habitus is the ruling disposition in corporate social and ritual behaviour, influencing/dominating here the cognitive dynamics and learning by participation: requiring rather the confined relational dividual and relational community; demanding certain social and ritual confinement while scarcely allowing other social and ritual behaviour (which would be severely sanctioned, possibly leading to exclusion): habitus apparatuses/ aggregates are internally active – barely medially supported – and less formal (or informal) than doctrinal ritual/religious or other ideological systems which generate the power and legitimation to create and maintain hierarchies, symbols and (other) value systems and their structural means (works *vice versa*, of course). Transfer and control of ruling social idioms/ prosocial behaviour by internal modes (high degree of social control/care), often supported by informal esoteric competency; operates habitually with "merons" and inherited codes. The term habitus aggregate should be used when a rather stable habitus apparatus develops dynamics in socioeconomic and ideological/cognitive milieus. To be distinguished from its "opposed pole", ideocracy: Neolithic societies always have different components of both ideocratic and habitus principles/dispositions. Example for habitus apparatus: the Basta/Ba'ja intramural burial practices.
habitus (from Gebel n.d.)	is the sum of all – predominantly mental and social – dispositions forcing and sustaining a commonly accepted, self-evident, and unquestioned social, economic and ritual behaviour to control all sorts of (especially cognitive) productivity and corporate, or cooperate-related decision making; characterised by dividual behaviour and group devotion as the main social value; is characterised by a higher degree of social control and risk of expulsion for dividuals/small social units; Neolithic habitus is steered by the changing basic human ethological dispositions coming up with confined territoriality and reciprocity, commodification and other cognitive environments. In order to avoid confusion: The main difference between Elias'/ Bourdieu's habitus and the Neolithic habitus is that the latter's subject are groups and not the individual.

Frame 1 continued

identity, identities (the Neolithic identities)	a general term for an identity/identities, always built or formed by components from the main Neolithic identity domains and their cognitive dispositions: 1) the confined and separated (contained) permanent (resident) physical or intangible spaces/territories; 2) the confined social domains of the self/ family/clan/community which "employ" ingredients of household, occupational and technological, sepulchral, ancestral and adoptive, gender, symbolic/ritual/habitus and ideocratic/belief *etc*. identities; 3) the cultural domains resulting and using the various commodification regimes producing/generating material and immaterial artefacts for providing identity/identities (supported by the related symbolic systems); 4) the spiritual and moral value domains influenced by the confined habitus and ideocracy apparatuses and aggregates, supported by visual means (imagined, doctrinal *sensu* ideocracy), ritual practices and social control; certain types of commodification generate the material and immaterial equipment of the spiritual and moral identities; 5) political domains if different from point 4. "Co- or sub-identities" may become part of identity/identities. The bases of Neolithic identity formation are confined relational dividual or group self. Neolithic identity formation operates at the cultural and cognitive intersection from general to confined identities and reciprocities, and it aims to identify, define, and discriminate from "the other" to an extend not developed by hunter-gatherers. Confined identities are considered to result from productive milieus while the more flexible identity formation of foraging milieus is expected to have formed generalised identities, mirroring/following the confined respectively generalised reciprocities in the same milieus. A deconstruction of identity/identities results from failures to socially cope with increasing diversification and specialisation in land, social, economic, ritual, and cognitive productivity; "deconstruction of identity/identities" means a major replacement of an identity/identities, and not that groups/ societies continued without identity/identities (*e.g.* the mobile pastoralists' identities emerging from the sedentary farming identities at the end of the LPPNB in the Southern Levant, or the mega-site identities "disolving" in small village identities during the 7th millennium BCE in some regions of the Near East. Challenges of Neolithic identity research are: 1) the need of an epistemology and transdisciplinarity for the cooperation between prehistory, social-cognitive and behavioural sciences, the anthropologies, palaeopsychology, and others; 2) awareness of personal and topical ingredients by the scholars' own identity behaviour; 3) the "prison" of taxonomical standards by which present-day scholars want to describe a product of meronomical thinking, *i.e.* the relational Neolithic identity. *Neolithic identity is an empirically "illustrated" construct of Neolithic research.*
ideocracy apparatuses/ aggregates (from Gebel n.d.)	systems in which ideocracies are the ruling disposition of corporate social and ritual behaviour, influencing/dominating the cognitive dynamics and "doctrinal" learning requiring the confined corporate dividual and the imagined corporate community while creating needs for individual personhood of elite persons; requesting certain social and ritual confinement while rarely allowing other social and ritual behaviour (would be severely sanctioned, potentially leading to exclusion): ideocracy is an externally active – mostly medially supported – and formal doctrinal ritual/religious or other ideological system which generates the power and legitimacy to create and maintain hierarchies, symbols and (other) value systems and their structural means (and *vice versa*, of course). Transfer and control of ruling social idioms/prosocial behaviour mostly by external modes, often supported by formal esoteric competency; operates more with "taxons" and formal codes. To be distinguished from its opposed "pole", habitus apparatus/aggregate. Neolithic societies always have different components of both habitus and ideocratic dispositions/principles. Example for ideocracy: the Göbekli doctrinal imagery
self (the confined relational self)	for the definition of the Neolithic relational dividual and group self *cf*. this contribution's section *Neolithic Relational Self, Properties*.

"Moving Around" and the Evolution of Corporate Identities in the Late Epipalaeolithic Natufian of the Levant

Anna Belfer-Cohen and Nigel Goring-Morris[1]

Abstract: With the advance of sedentism during the late Epipalaeolithic Natufian the sense of territoriality was amplified. Archaeological evidence testifies to an increase in group identity and processes of intensifying self-identity can be observed at the community level. Still, groups were bound to share a viable gene pool through different social mechanisms, in accordance with the changes in subsistence modes. Through time there was both an increase in human populations, yet also an increase in the variety and quantities of material culture. This necessitated repeated and steady intercourse with neighboring groups and communities. The processes reflecting these phenomena, observed from the Epipalaeolithic to the Neolithic, portray an intermediate scenario that cannot be explained either through reconstructed Palaeolithic modes or through the established rules of the later, fully fledged late Neolithic agricultural societies of the Near East.

Keywords: Epipalaeolithic, Natufian, Neolithic, social mechanisms, self identity

Introduction

Recent research (based on <u>archaeological</u> criteria) in the Near East clearly indicates that the processes that are considered as indicators of the novel Neolithic lifeways have their origins in the local <u>early</u> Epipalaeolithic (*e.g.* Grosman 2005; Goring-Morris *et al.* 2009; Belfer-Cohen and Goring-Morris 2011; Goring-Morris and Belfer-Cohen 2011a). Still we would like to concentrate on the millennia and the culture that directly precedes the Neolithic. Since its discovery and definition almost a century ago by Garrod (1932) and Neuville (1934) the Natufian cultural complex of the Levant has come to be recognized as a unique, "transitional" entity in the story of human evolution. For the Natufian represents the beginning of the transformation from mobile foraging band societies to settled agricultural communities. Advances in the calibration of ^{14}C dating demonstrate its longevity, from *c.* 15,000-11,600 calBP. Research in recent decades has revealed that not only can it be divided into chronological <u>phases,</u> but also it is possible to identify local regional <u>facies</u> in the material culture record. Together, these portray a rich and varied mosaic tapestry of developments, by no means linear in nature.

The primary novelty of the Late Epipalaeolithic Natufian in the Levant, *i.e.* <u>sedentism</u> (without going into a detailed discussion as to its extent or intensity – see recent summary of research in Yeshurun *et al.* 2014), brought about new social and spatial alignments (and see papers in Bar-Yosef and Valla 2013). This is reflected especially in the apparent change in the size of the basic social units comprising the Natufian complex. Individual community sizes increased, while the groups inhabiting such new "hamlets" became much more distinctive and differed from one another, more obviously than observed

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previously among earlier Epipalaeolithic bands (Belfer-Cohen and Goring-Morris 2013; Goring-Morris and Belfer-Cohen 2013a). This relates to the development of social relations within kin and non-kin based communities leading to the solidification of corporate identities.

Since we are dealing with "recent" modern humans, we do not expect to observe (even if it was possible) neural adjustments to the new social circumstances (and see the pioneering discussions back in the 1980's concerning the validity of evolutionary psychology – *e.g.* Cosmides *et al.* 2010). Indeed, it is challenging to uncover material culture evidence of these processes in the variety and abundance of archaeological remains designated (amongst others) to define and segregate groups, as well as to mark the different status of individuals and groups and the interrelations amongst them.

It is our aim to draw attention to these issues through the evidence provided by the archaeological record as a series of non-exhaustive examples from the Natufian material culture repertoire. We shall then evaluate the impact of these processes on the later emergence of the new and unique Neolithic existence, the precursor of modern life-ways worldwide.

Variable Scales of Similarity and Difference

The Natufian entity is defined through certain commonalities in the material culture, notably those pertaining to techno-typological affinities of the lithic industry (*e.g.* Henry 1973; Bar-Yosef 1983; Olszewski 1986; Goring-Morris 1987; Belfer-Cohen 1988; Byrd 1989; Ashkenasi 2013). Yet, it is clear that the "similar" in the Natufian is observed in both the mundane and the symbolic/artistic domains.

Other, common, temporally and geographically transgressive elements, besides those observed in the chipped stone assemblages, include particular choices of shell species for decoration, with a clear emphasis upon dentalia shells (Bar-Yosef Mayer 2005). Specific motifs of decoration are associated with particular artefacts, such as the meander/chevron decorative pattern, especially on stone (basalt and limestone) artefacts, *e.g.* Early Natufian Wadi Hammeh 27 (Gilead), Wadi Mataha (Edom), Upper Besor VI (central Negev), Eynan (Hula Valley), and Late/Final Natufian Shuqba cave (Samaria) (Garrod 1942; Perrot 1966; Goring-Morris 1998; Janetski and Hazan 2004; Gregg *et al.* 2011; Edwards 2013). Another motif is the pointillist style incisions observed on bone tools, primarily spatulae, *e.g.* Early Natufian Kebara cave (Carmel); Late Natufian Hayonim cave (Western Galilee); and Late/Final Natufian Iraq ed-Dubb (Gilead, in Transjordan) (Kuijt *et al.* 1991; Bar-Yosef and Belfer-Cohen 1999).

At the same time, there are also clear differences relating to stylistic attributes between sites or groups of sites, common in some, yet either totally absent or present in very small quantities in others. This is especially apparent concerning the wide range of Natufian jewellery, with specific types present in variable frequencies in different sites. Examples include:

The presence of only a single cut and pierced ruminant phalange at Hayonim cave, while this is the common bead type in Eynan (Belfer-Cohen 1991; Marechal 1991). By contrast, bi-convex pierced and polished pendants are dominant at el-Wad, but they are absent or rare elsewhere in the "core area", whether in base-camps or other site types (Belfer-Cohen 1995).

So, too, the "plano-convex" pierced polished pendants, which are common (numbering in the hundreds) at Hayonim and Kebara caves (Belfer-Cohen 1991; Phillips *et al.* 1998), but are rare in other sites, *i.e.* only a single item from the whole Natufian sequence at Eynan (Marechal 1991).

 Numbers of pierced fox teeth were reported from Hayonim and el-Wad caves (Belfer-Cohen 1988, 1991, 1995), while there is but a single specimen reported from Eynan (Marechal 1991).

A similar difference in frequencies is observed also as regards beads shaped from partridge tibio-tarsus limb bones, reported in single numbers from Eynan and Erq el-Ahmar, while at Hayonim cave there are dozens of them (Belfer-Cohen 1988; Pichon 1991).

There is also site-specific variability in mortuary "attire". Thus the spectacular dentalia head-dresses observed on several burials at el-Wad are unique to that site (Wylie and Hole 2012). By contrast, dentalia decorations, which focus especially upon the body and arms and as necklaces were observed at both Eynan and Hayonim cave (Goring-Morris and Belfer-Cohen 2013b).

The Early Natufian adult female[?] individual buried in Grave XIII in Hayonim cave had, besides a dentalia necklace, also a bone spatula adjacent to the right shoulder, a fox incisor armlet and a "G-string" comprising tens of fox incisors; pierced fox incisors also were reported, albeit in small numbers, from el-Wad cave in the Carmel (Belfer-Cohen 1991). So, too, the Early Natufian male adult individual buried in Grave XVII at Hayonim cave was laid to rest with a bone spatula placed adjacent to his shoulder, though here lines of flat, bi-convex pendants adorned both sides of the body (almost

certainly attached to a cape or similar item of clothing - AB-C pers. obs.). Neuville (1951: 109) wrote that each of the Early Natufian burials at Erq el-Ahmar (all but one supposedly represented only by crania) was accompanied by an equid molar (and see Mastin 1964).

Another, quite unique Natufian artistic phenomenon are naturalistic bone and stone animal figurines, so far reported only from the western Carmel sites of Nahal Oren, Kebara and el-Wad caves. This observation suggested to Noy the existence of a "Mount Carmel Art Tradition, including both Early and Late Natufian phases" (Noy 1991: 567). Indeed, some motifs have clearly local geographic boundaries. Examples include incised plaques, as at Fazael VI (lower Jordan valley), and Eynan (upper Jordan valley) and birds at Fazael VI and Wadi Hammeh 27 (middle Jordan valley) (Valla *et al.* 2004; Belfer-Cohen and Goring-Morris 2013; Major 2013). It is of interest to note that some 30 years ago Noy wrote, after describing the artistic manifestations from Nahal Oren and their equivalents from other Natufian sites, "I may suggest that within any one phase of the Natufian culture small groups kept different traditions of art decoration." (Noy 1991: 561, and see also Stordeur 1981, 1991).

The use of certain localities for cemeteries is another interesting phenomenon related to group identities and their ties to specific places in the landscape. In some cases they are located immediately adjacent to the settlements, as at Hayonim cave/terrace or the funerary structure (*habitation* 1) at the edge of the hamlet at Eynan (Perrot 1966; Perrot and Ladiray 1988). In other instances they are found as quite separate sites, *i.e.* Raqefet, Hilazon Tachtit, Shuqba and Kebara caves, and perhaps Nahal Oren, too, where there is little if any evidence of a "regular" settlement occupation. We believe a plausible interpretation of such cemetery sites could reflect previous ties to and ancestral memories of specific localities within the landscape.

For example, at Hilazon Tachtit cave the entire Late Natufian occupation only encompasses *c.* 30 m², comprising but a couple of small constructed graves and the use of rock-cut fissures for secondary burials (Grosman *et al.* 2008). Of note is the "Shaman's burial", seemingly the first burial within the cave, which perhaps consecrated the site for later burials in this particular locality (Grosman and Munro 2016).

Interestingly, the particularities of each group follow their members into their graves, not only as mortuary attire (and see above). One of the burials on Hayonim terrace (the relationship between the Natufian presence inside the cave and the occupation on the terrace is not clear - and see discussion in Belfer-Cohen and Bar-Yosef 2012) shares a unique feature with a burial at Eynan, as in both instances dogs were interred together with the humans (Davis and Valla 1978; Tchernov and Valla 1997).

Similarities and differences between Natufian sites in the presence or absence of specific lithic tool types also have been documented. This is somewhat more complex, since we may assume that different environments and resources dictated some disparities, too, in the realm of lithic techno-typological characteristics. Still, it is apparent that there are stylistic differences also in the various lithic production sequences observed in the industries of the distinct Natufian groups. Though the final "product" is usually similar, the techniques differ. Thus, for example, in some sites the lunates were habitually fabricated by the microburin technique; in others the lunates were produced without the use of this technique and consequently, the lithic assemblages from these localities lack the products of the mbt technique. Examples of the former include the Early Natufian site of Azariq XV (western Negev), while the assemblages from Hayonim cave represent the latter (Goring-Morris 1987; Belfer-Cohen 1988).

Another example of technological variability includes the presence of a unique Core Trimming Element (CTE) variant from Hayonim Cave (Ashkenazi 2014), not documented to date elsewhere in the Natufian.

It is clear for instance that lunate lengths and widths decrease temporally through the Natufian sequence (Valla 1984). Yet, lunate assemblages from the Mediterranean zone consistently tend to be relatively shorter and wider than their counterparts in the arid margins (Goring-Morris 1987: Fig. VIII-21).

In terms of heavy duty tools, distinctive elongated narrow picks appear at Hayonim (Belfer-Cohen 1988) and Kebara caves (Turville-Petre 1932; Garrod and Bate 1937; Belfer-Cohen and Goring Morris 2013: Fig. 4). Yet they are absent from other Natufian hamlets in the Mediterranean zone. Unique tranchet-type bifacial tools are documented at Wadi Hammeh 27 (Edwards 2013).

Base-camps in the Negev continue a long, earlier, Epipalaeolithic tradition (Ashkenazi 2014), retaining numbers of notches and denticulates on massive blades (Goring-Morris 1987); and there are more examples of the statements above.

Discussion

The examples cited above were intended to illustrate the specific nature of local group identities as reflected in various realms of the Natufian material culture. These indicate that all communities shared certain basic commonalities of the Natufian identity, differing from immediately preceding and succeeding entities, as with coeval neighbouring entities as expressed in the uniquely Natufian material culture realms; additionally, on a local level, individual Natufian communities retained their own historical memories/trajectories concerning the "way we do things".

As noted above the Natufian was the first entity to exhibit unequivocal signs of incipient sedentism. It is important to stress that the Natufians were still foragers; however, by establishing settlements in environmentally favourable specific ecotonal localities within the Mediterranean zone, they were able to more efficiently exploit a wide range of floral and faunal resources whether terrestrial, avian or fluvial (*e.g.* Munro 2009, 2012; Stutz *et al.* 2009; Yeshurun *et al.* 2014). This was accomplished by combinations of intensification and the addition of new technologies, *e.g.* the innovation of sickle blades and pounding technologies (*e.g.* Eitam 2008; Rosenberg *et al.* 2013). The more efficient means of exploitation would have enabled denser packing of larger settlements in the landscape than previously. It is apparent that sedentism preceded the shift to farming and thus social phenomena pertaining to sedentism originally identified and ascribed to the Neolithic existence, actually appeared earlier, during the Natufian.

Previous Epipalaeolithic entities, with a few notable exceptions, are smaller than 200 m² in extent and display but isolated, solitary structures, mostly of a transient nature (Nadel 2006; Goring-Morris and Belfer-Cohen 2008). By contrast, the Natufian base-camps, up to *c.* 2,000 m² in extent, comprise clusters of durable stone-built structures; as such they can be referred to as "hamlets", with thick and dense occupation levels rich in material culture remains. These hamlets were, accordingly, occupied by many more individuals than the preceding Epipalaeolithic camps, for much longer periods of time. This significant rise in the size of the group resulted in the individual being in contact with more people on a daily basis, some kin and some non-kin. Moreover, since the communities in these hamlets still did not, of themselves, represent a viable genetic pool, there was a need to retain and nurture ties also with members of other hamlets on a regular basis.

The sedentism and "fixed" boundaries of the Natufian existence would have entailed developing new means to sustain these relationships, including the existence of corporate groups, tethered to specific localities and representing a unit within the Natufian ensemble. These means differed significantly from those that served the same needs of the preceding Early and Middle Epipalaeolithic mobile bands (and see below). Thus, the scale, intensity and complexity of Natufian social organization brought about new social "institutions" to deal with life-ways markedly different from the "Palaeolithic" existence of mobile hunter-gatherers; we can enumerate but the ones that left material evidence such as structured graveyards, feasting events, *etc.* but clearly there were others to cope with "scalar stress" to mention one example. If we examine the similarities and differences in the various elements described above between different sites, areas and phases, they do not always match up; some sites are similar in one element, but differ in others, so that we end up with webs of interconnections.

One means of creating solidarity and reinforcing discrete group identity is the intentional (or unintentional) construction of spatial boundaries, defining those spaces accessible to group members, offering but limited and controlled access to "others". Thus, there is now yet another level of spatial "privacy", in addition to that of the individual/kin and that of the broader cultural entity (Belfer-Cohen and Goring-Morris 2011). For sure spatial boundaries defining group space existed previously, but they were of a vaguer and more diffused nature, less structured and distinct. Boundaries could be defined either by means of geographic features in the landscape or by "artificial" social criteria, accepted by the parties concerned through mutual agreement.

Belonging to the same cultural entity entailed social intercourse with neighboring groups and communities, even for the simple reason of biological continuity; so there was constant tension between keeping the "privacy" of the group and the need to communicate and mingle with non-group individuals, or in other words, "Natufians", but not "us", *i.e.* others (see Rollefson this volume). While there is little evidence for systemic intra-group violence during the Natufian, the case at Kebara cave is unmistakable (Bocquentin and Bar-Yosef 2004; and see papers concerning early conflict and violence in the Near East in *Neo-Lithics* 1/10: 3-71).

Since the basic viable genetic mating unit comprises ~350-500 individuals and even the largest Natufian hamlets in the most favorable settings were occupied by groups of at most ~75-150 individuals, this scenario of complex inter-relationships within and between disparate groups is applicable throughout the Natufian; it was necessary to exchange mates between the various settlements, while each indi-

vidual community would have retained its own particularities. In this respect one can begin to identify at this time the emergence of "corporate groups" (*sensu* Gebel 2010, this volume). If, previously, within the context of band societies, the individual could move from one band to another for whatever reason (see Lee 1979 for a detailed discussion of fission-fusion in hunter-gatherer bands, and Marx 2004 on prehistoric groups), the individual from any particular Natufian hamlet now became a representative of that particular group, comprising kin and non-kin.

Previously, during the Early and Middle Epipalaeolithic, one solution to sustain a viable genetic pool appears to have been meetings of several groups by short-term, seasonal aggregation in specific, favored localities, where resources to sustain such gatherings were available. Examples include Early and Middle Epipalaeolithic "mega-sites", such as Kharaneh IV and Jilat 6 in the Azraq basin, each extending over up to 20,000 m² (Maher *et al.* 2012; Garrard and Byrd 2013). It is of interest to note that there is a similar, Late Natufian example, the Rosh Horesha-Saflulim site complex in the central Negev highlands (Goring-Morris and Belfer-Cohen 2013a). Here, in the semi-arid margins, sedentism was simply not a viable option, since local environmental conditions required much larger territorial catchments in terms of subsistence than those of their "cousins" in the Mediterranean zone. Accordingly, aggregation could only have occurred on a periodic basis with the (seasonal) abundance of otherwise scarce subsistence resources, whether vegetal or animal.

There is no clear-cut evidence as to which social mechanisms were employed during the Natufian in the Mediterranean "core area" region to maintain a viable genetic pool. Still, the data presented above clearly illustrates a complex web of relationships between the various Natufian communities; these indicate both the existence of particular group-level characteristics and, at the same time, point towards inter-group ties to maintain the Natufian "superstructure" as a distinct cultural entity. The dramatic rise in symbolic activities testified through the material remains indicates the existence of novel situations to be resolved through the symbolic realm. Since this trend is observed from the early stages of the Natufian, it is quite clear that this entity succeeded in dealing with the issues of social complexity, scalar stress and intra-group/inter-group relationships, taking into account that it lasted for at least 4,500 years.

Things changed once again in the PPNA (*c*. 11,600-10,500 calBP) with the emergence of small villages and, for sure, the late PPNB (*c*. 10,500-8,400 calBP), especially with the rise of the "mega-site" phenomenon. Sites reached population sizes that permitted endogamous mating (Kuijt 2000), but by then communities had already become more dependent upon products and expertise deriving from the outside, *i.e.* exchange of commodities and knowledge with other communities, as is amply illustrated in the archaeological record (*e.g.* Chataigner *et al.* 1998; Gopher *et al.* 1998; Bar-Yosef Mayer and Porat 2008; Barzilai 2010; Gebel 2010). Exchange had obviously occurred much earlier but was more limited in extent and in scale, *e.g.*, the Natufian exchange networks in the Galilee and Carmel of flint, basalt and marine mollusks (Delage 2001; Weinstein-Evron *et al.* 2001; Bar-Yosef Mayer 2005). By now, during the Neolithic, mechanisms to mediate social relations were more fully developed (*e.g.* Lewis-Williams and Pearce 2005; Kuijt 2008; Gebel 2010; Schmidt 2012).

The social milieu one faces when dealing with those entities that took part in Neolithization processes cannot be explained either through reconstructed Palaeolithic modes or through the established, formal regulations of the later, fully fledged agricultural societies of the Near East. Clearly we are facing a long, ongoing trend, in part starting in the early Epipalaeolithic (*e.g.* Bar-Yosef 2001; Grosman 2005, 2013; Goring-Morris and Belfer-Cohen 2010, 2011a; Belfer-Cohen and Goring-Morris 2011), but there were clearly tipping points and bottlenecks in this trajectory, such as the Natufian sedentism that preceded the agricultural "revolution" and demanded new ways to deal with new tensions. Unfortunately, the archaeological record is too coarse for us to observe some, if any of the evidence in the Levant for more remote periods as well as more subtle changes. Still, as archaeologists we have no choice but to stick with the available evidence until it is as loud and clear as the Natufian case detailed herein.

Previous research aimed towards distinguishing and defining overarching monolithic communal patterns of behavior dealt only scantily, if at all, with the issue of group identity, group territoriality and the tensions between "us" and "them". This is valid also in the search for evidence of the regulation of interactions with "others". For sure this will not be an easy endeavor, but once we know what to look for, there is a fair chance to discover yet new evidence or new, more befitting explanations for known data. A point to illustrate this is the relatively recent "discoveries" of feasting events in the Natufian with all that it entails (Hayden 1990, 2011; Munro and Grosman 2010; Goring-Morris and Belfer-Cohen 2011b). This can be viewed as yet another link in the chain of possible continuity in ritual behavior from the Natufian through to the PPNB, *i.e.* feasting related to burial events (Horwitz and Goring-Morris 2004; Goring-Morris and Horwitz 2007; Twiss 2008).

To conclude and stimulate debate, we believe it is imperative to evaluate the impact of these *longue durée* processes on the emergence of the new and unique Neolithic existence, the precursor of modern life-ways worldwide. Current research pays lip service to this notion by stating that indeed Neolithic characteristics have their origins in the Epipalaeolithic, but without actually trying to identify them; it stands in danger of being transferred to the realm of a "just so" story. Indeed, sifting through an enormous corpus of data is a tedious task and often rather frustrating, but that is where the archaeological validation of those novel ideas is to be anchored; fortunately, the available data do appear to provide evidence of such processes. And, yes, if one is ready to do it, "future research will tell..."

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The Construction of Community in the Early Neolithic of Southern Jordan

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Abstract: The nature of community construction and identity in the early Neolithic (PPNA-Middle PPNB, 12,000 to 9,200 cal BP) of southern Jordan is examined in the light of recent excavation data, especially the highly varied architectural forms that have been uncovered. The new excavation evidence suggests that in southern Jordan autonomous households were not at the centre of community organization until late in the PPN. During the PPNA, community identity was emphasized through shared storage buildings, shared food processing shelters, communal mortuary areas, and the construction of large communal buildings. Communal architecture continued to be built in the Middle PPNB and appears likely to have served an important role in the evolution of Neolithic society. Architectural evidence suggests that southern Jordan followed a distinct local historical trajectory while maintaining contact with the rest of the Neolithic world.

Keywords: Pre-Pottery Neolithic, community construction, Southern Jordan, household

Introduction

Social changes, most immediately visible in the development of increasingly large and sedentary settlements, are frequently considered a central element of the Neolithic transition that helped to drive and sustain many of the economic changes that were at the core of the Neolithic (Childe 1951; Hodder 1990; Belfer-Cohen and Bar-Yosef 2000; Cauvin 2000; Barker 2006; Zeder 2009). The larger and increasingly co-resident populations of these settlements engendered novel forms of community that required new social mechanisms to enable the settlements to function and flourish. Communities are loci of the dynamic intersect of economic choices, ritual institutions, and daily practices that are intimately threaded through the social lives of people and, as such, exploring the nature of Neolithic communities is key to understanding the Neolithic transition. Identifying the emergence of local communities is key to understanding whether the Neolithic emerged out of a few core areas within the Near East and spread out through a process of diffusion (or even population expansion) or emerged in multiple places at synchronous and asynchronous paces through dynamic interactions between distinct cultural groups defined by their own social codes, subsistence approaches, and material culture.

Although community is generally understood as an important component of early Neolithic societies (Kuijt 2000), discussion of Pre-Pottery Neolithic (PPN) societies has generally focused on the household as the core element organizing PPN settlements. Accordingly, much attention has been paid to a specific category of physical buildings and perceived social correlates present in these settlements: houses. For example, the small circular buildings commonly found in PPNA settlements and the rectangular architecture frequently found in association with PPNB settlements are interpreted variously as representing nuclear and extended family households (*e.g.* Flannery 1972, 2002; Byrd 1994, 2000; Kuijt 1996), from which the predominance and centrality of social households in framing Neolithic social organization are extrapolated. Outside of some models that draw heavily from Levi-Strauss's concept of *sociétés à maison* and place

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Neolithic households within House societies (*e.g.* Kuijt 2000), the structure of the wider community has been explored only rarely (Rosenberg and Redding 2000). What these household-based models do share is an assumption that the wider community simply emerges from this basic building block, with little discussion of what first brings and then binds households together (Hodder and Cessford 2004; Watkins 2008; Kuijt *et al.* 2011). Furthermore, discussion of Neolithic households tends to be framed as if they reflect patterns of social development that are valid for all of Southwest Asia and that the households represent a uniform social structure for all early sedentary, or semi-sedentary, communities.

We explore here the emergence of community construction, local identity, and intra-community connectedness during the Pre-Pottery Neolithic, focusing on settlements located in southern Jordan. The expression of the Neolithic in this region is distinctly different than that for other areas of the southern Levant, including northern Jordan, the west bank of the Jordan River, or the Galilee, distinguished most obviously by the differing character of architecture present in these settlements (Baird 1997; Finlayson and Makarewicz 2017). Cultural and economic diversification within the southern Levant mirrors the broader pattern of regional variation within the Near Eastern Neolithic. Cauvin (2000) noted regional diversification from the PPNA onwards, while Kozlowski and Aurenche (2005), for example, defined distinct territories based on the distribution of a wide range of artefact types, albeit omitting critical discussion of attendant social or economic practices that characterize such "territories". Within the southern Levant, by the Middle PPNB there were distinct regionally defined mortuary traditions and notably a complete absence of plastered skulls from southern Jordan, indicating that ritual practice was not homogenous throughout the region. Such evident regional differentiation supports the case for a polycentric, or perhaps more accurately, a decentered regional framework for Neolithic developments (Rollefson and Gebel 2004).

We focus in particular on the early Neolithic, defined here as the Pre-Pottery Neolithic A (PPNA) to the Middle Pre-Pottery Neolithic B (MPPNB), *c*. 12,000 to 9,200 cal BP, of southern Jordan. The early Neolithic in southern Jordan captures major transitions in the ways in which humans procured food and organized their societies. From a subsistence perspective, initial experimentation with plant cultivation was underway during the PPNA, whilst wild plant foods were still intensively gathered (Meadows 2004; White and Makarewicz 2012). Although little is known about plant exploitation strategies used during the MPPNB due to poor preservation of carbonized seeds, a shift in animal use to include light management of goats (alongside continued hunting of wild ungulates) may have been underway (Hecker 1982). It remains to be seen if domesticated goats and sheep were exploited during the MPPNB, as claimed for 'Ain Abu Nukeyhla (Dean 2014).

Over the past decade, several new excavation projects have revealed substantial PPNA and MPPNB settlements thoughout the region. In particular, work at the PPNA settlements of Wadi Faynan 16 (WF16) (Finlayson and Mithen 2007; Finlayson *et al.* 2011), Dhra' (Finlayson *et al.* 2003), Zahrat edh-Dhra' 2 (ZAD2) (Edwards *et al.* 2004), and el-Hemmeh (Makarewicz and Rose 2011) is providing a new wealth of architectural, technological, and subsistence data informing this key transitional period. In sharp contrast with PPNA settlements located on the western bank of the Jordan Valley, which, with the exception of Jericho, appear to be dominated by relatively ephemeral elliptical structures, PPNA settlements in southern Jordan are broadly characterized by a diverse range of substantial stone and pisé architecture, and large midden deposits. Research at MPPNB Shkārat Msaied (Kinzel 2013), Beidha (Byrd 2005; Makarewicz and Finlayson in press), and 'Ain Abū Nukhayla (Henry and Beaver 2014) has been providing new data on local developments in architecture, settlement organisation, and economy of this period in southern Jordan, previously only known from Kirkbride's 1960s interim reports (*e.g.* Kirkbride 1968). MPPNB settlements in southern Jordan, consisting of circular architecture constructed with solid stone walls, are similarly distinct from the well-known, broadly contemporaneous MPPNB sites located in northern Jordan, the Galilee and Judean Hills, which are generally composed of rectilinear buildings with low-lying stone foundations.

Subsequent Late PPNB settlement development in southern Jordan, defined primarily by a significant increase in the number and size of settlements and by the scale of construction to include multi-storey aggregate architecture which likely contained substantial storage space, suggested by the ubiquitous presence of small (*c*. 4 m^2 in size) rooms within structures (Gebel *et al.* 2006; Kinzel 2013), is markedly different from the early Neolithic. However, the Late PPNB settlements in southern Jordan continue to have a distinctive regional character, indicating that southern Jordan persists as a sub-regional entity, although the new architectural forms indicate that social organization has undergone a further transformation, possibly at this time moving to the autonomous household (Byrd 1994). These social developments of the LPPNB are beyond the scope of this discussion concerned with the earliest developments in Neolithic settlement organisation.

The Construction of Community

A community is formed of a group of people living together, whether in a single settlement or a regionally defined territory, who create a shared identity with mutual interests, common beliefs, values, and cosmology (Isbell 2000). Communities are typically bounded in a way that encapsulates their identity, whether the boundaries are formed by geographical barriers; or by the presence of distinct ethnic, linguistic, or religious entities; or are solely mental constructs of close identification with a specific place or neighbourhood (Cohen 2000). However, communities are not necessarily uniform or homogenous in their membership, which is often characterized by factionalism and disagreement (Brumfiel 1992). Multiple community identities can cross-cut and overlap with each other and often operate at different scales, such as the communities represented by individual settlements, provinces, and regions. Consciousness of community is usually felt most strongly where the community is most readily perceived in action, and therefore, especially in traditional societies, is strongest at the smallest scale where people interact most often in their daily routines. The built environment is central to the materialization of community, as it creates the spaces where social interaction takes place within the routines of daily practice, constraining the identities, intentions, and strategies of individual agents (Bourdieu 1973, 1977; Giddens 1984).

Communities are socially constructed, composed of dynamic relationships that form and re-form over time, constructed within their own specific historical and cultural contexts, and relationships with the wider world. A sense of community is created by the ways in which the community is experienced by its members. Accepted norms for social behavior within the community are produced through multiple extended processes that include sharing common beliefs through experience, story telling, and routine daily family interactions (Berger and Luckmann 1966; Gergen 2010). Community identities emerge out of these interactions, which are expressed as distinct social constructions and often as material culture, as the group creates material correlates as part of its shared activities, typically recognized archaeologically as patterns of stylistic variation. These may be observed in the creation of emblematic difference, for example, in the manufacture of highly distinctive tools, through evidence of distinctive ritual practices, and in such markers as building orientation, the proximity of buildings, and the use of shared resources (White *et al.* 1977; Wobst 1977; Hodder 1982; Sackett 1985; Wiessner 1990; Yaeger 2000; Haslam *et al.* 2003). This material expression is frequently distinctive, as communities seek to differentiate themselves from other groups in ways that are visible, both actively binding a group together and marking out its difference from other groups. In the PPN, point types from the el-Khiam point of the PPNA to the large points of the PPNB appear to have been symbolic of connectivity throughout the western half of the fertile crescent (Kozłowksi and Aurenche 2005). Mortuary practices appear to have been far more regionally variable, with even the well-known PPNB skull plastering practices largely limited in time and space to the MPPNB of only part of the southern Levant, while individual settlements appear differentiated by their own distinctive architectural practices. Such differences suggest the intentional construction of variable scales of identity within the early Neolithic. The potential for individuals to be members of multiple communities and networks may have ensured awareness of the regional early Neolithic context, an important level of connectivity within a decentered Neolithic development trajectory.

Changes in community construction were likely a fundamental aspect of the Neolithic transition. Increasing investment in fixed economic resources such as stands of cultivated cereals or stored produce, in a context of more permanent architecture and more sedentary residence, meant that simply walking away from disputes and allowing the community to fission were no longer possible as options to avoid conflict. Community cohesion required new mechanisms of conflict resolution to be developed. As a consequence, it can be assumed that with increasing sedentism social relations became based upon a co-resident community rather than a kinship-based social group commonly associated with hunter-gatherers and more temporary dwelling spaces (Watkins 1990; Hodder and Cessford 2004; Gerritsen 2006). Social changes, including methods to maintain egalitarian structures (Kuijt 1996), the development of ideas of privacy and property (Banning and Byrd 1988), and the rise of more formal ritual behaviours (Cauvin 2000), or even cognitive changes (Watkins 2004), are often described as having arisen as methods to cope with living in larger communities and as the means to interact with the increasing number of people within that community. At the same time, routine social interaction facilitated increasingly sedentary lifestyles within settlements, providing potential new opportunities for community integration (Yaeger and Canuto 2000; Hodder 2005).

Individual settlements are unlikely to represent complete self-sustaining populations within the small-scale societies of the early Neolithic, certainly within southern Jordan. Furthermore, it is likely that mobility will have been a significant aspect of life for at least some of the residents of any settlement. Both these factors may have ensured that multiple identities will have been present in any given

community, as people moved around within various networks. The community of the individual settlement will therefore not have been a natural unit, but one constructed to hold these multiple identities together. Underlying competing identities within a community may have been a factor lying behind the highly dynamic and variable nature of the early Neolithic settlements.

Household Models and Community Construction

Despite the importance often attributed to novel forms of settlement organisation in enabling larger and more sedentary populations, many models detailing organization in Neolithic southwest Asia have downplayed the significance of the community and instead have concentrated on the role of the household, formed of nuclear or extended families sharing residential space and functioning as self-contained economic units, in constructing Neolithic social organization. Archaeological analysis of the Southwest Asian Neolithic household has largely concentrated on the physical remains of structures interpreted as houses (Kuijt *et al.* 2011). The house has generally been perceived as a baseline structure, where "many buildings share similar plans, sizes, domestic and storage facilities" in contrast to "other infrequent buildings" (Baird 2011). The most commonly anticipated domestic feature of the house is the hearth (Düring and Marciniak 2006; Banning 2011), but it is also assumed that houses will be a relatively standard and common element within a settlement. Buildings of exceptional construction are often placed in contrast to domestic dwelling spaces interpreted as having a ritual function (*e.g.* Byrd 1994). Banning has observed that the dichotomy between the sacred and profane is a modern construction, and ritual practice was probably endemic and infused into Neolithic lives and not strictly confined to special buildings. The sacred and profane dichotomy precludes the possibility of other purposes for such unusual buildings (Banning 2011). Ever since Flannery published his influential paper linking social units to Neolithic architecture, debate has continued on the relationship between the form of residential architecture and whether or not they reflect nuclear or extended families (Flannery 1972; Watkins 1990; Wilk 1990; Byrd 1994; Banning 2003; Banning and Chazan 2006). Flannery argued that the earlier round hut settlements (he scrupulously avoided the use of the words 'house' and 'village' for this phase) were components in compound residences for extended families, and that such compounds represent the earliest type of permanent community. Such settlements maintained characteristics of relatively mobile hunter-gatherer groups, with separate storage buildings placed in the open where all the community could see them, enabling obligatory sharing of food resources, and a relatively low investment in construction indicating that communities were still prone to fission. Sites from the Natufian through the PPNA and on to MPPNB Beidha were included within this phase (Flannery 1972). He proposed that the nuclear family developed to form individual households along with what he interpreted as its architectural correlate, the rectilinear houses, where increasing numbers of rooms and courtyards within the house provided space for internal and private storage as each household became the basic unit of production, even containing their own workspace, forming what he saw as "true" villages.

In contrast, Byrd developed a model of early Neolithic settlement organization composed of nuclear households (living in circular to sub-circular architecture) within egalitarian communities that did not require formal communal integration. Only later, when households became more autonomous, was there a need for more formalized integration of the community. He associated the autonomous household with the corridor buildings of the final phase of occupation at Beidha, when architecture became more elaborated, with an increased compartmentalization and presence of facilities, over earlier MPPNB round structures. This shift in architecture was interpreted to indicate that tasks and stores were being brought within the house to mirror a greater sense of privacy and ownership by individual households (Byrd 1994, 2000; Banning 2003). However, this transformation in architectural style and attendant social change is not pronounced in the southern Levant, as most architecture in the PPNB, for example, the pier houses as recorded at 'Ain Ghazal, remains fairly simple with only a few subdivisions (Banning and Byrd 1987). In southern Jordan, the survival of circular architecture into the MPPNB reflects an even weaker development of autonomous households and further illustrates an increased divergence between regional expressions of the PPN in the southern Levant. The case for the development of autonomous households is more obvious in the northern Levant, where complex plan structures (Aurenche 1981), foundation burials and, in Anatolia, the repeated construction of almost identical buildings one on top of another at sites such as Aşıklı Höyük (Esin and Harmankaya 1999) and Çatalhöyük (Düring 2007) have been used to help support the connection between the physical remains of houses and multi-generational social households (Watkins 1990; Düring and Marciniak 2006). However, the evidence for such autonomous, multi-generational households is not characteristic of the southern Levant and cannot be

included within a generic Neolithic model. Within the southern Levant it is only in the South of Jordan that complex compartmentalized architecture appears, and even there not until the Late PPNB.

The "House" has also been proposed as a structuring element binding together individual households in MPPNB social organization (Kuijt 2000: 140-141). "House" models, rather than seeking evidence for households from residential architecture, draw from Neolithic mortuary evidence and argue that MPPNB communities were bound together by ritual, especially mortuary practices, facilitated by the "House" or the household to negotiate social arrangements and connections between individual residential structures. Unfortunately, "the House" comprised of a number of social households, is difficult to observe through archaeological evidence, as it is defined by its material and immaterial possessions passed down through kinship or affinity lines (Lévi-Strauss 1983). More specifically problematic for southern Jordan is that this particular argument is based on ritual practices involving plastered skulls, cranial deformation, skull caches, and anthropomorphic plaster statues (Kuijt 2008). These are missing from the southern Jordanian MPPNB, suggesting that an alternative set of ritual and daily practices was in place in this region.

Theory of Built Environments

The disproportionate focus on residential structures and their layout, and how they may reflect various forms of household-level organization or ritual activity, has left the role of the settlement as a coherent unit underexamined. We argue that the wider built environment of the settlement provides a more accurate reflection of Neolithic social interactions and organization at the level of the community. Rather than assume that most buildings served as residential houses, with a small number of special (ritual) purpose structures, we consider the built environment as comprising a set of structures that may include dwelling spaces, specialized structures (such as workshops), and communal buildings (such as shared storage structures, or other structures which appear to have enabled community-wide activities). There are very rare examples of what might be termed public buildings, such as the tower at PPNA Jericho, which appear to have been designed for maximum visibility and display. These categories need not be mutually exclusive – a workshop may be shared and therefore communal, and dwelling spaces may be present within buildings primarily used for other functions. The interpretation of a structure as a dwelling should not be an assumed default; the function has to be demonstrated.

The degree of diversity or similarity in architectural construction techniques and configuration of individual structures present at individual sites provides a rough measure of the social and cultural links and divisions between settlements. Similar grammars of design between settlements suggest a regular flow of social interactions between settlements, a relationship that is heavily facilitated by shared cultural, economic, and ideological codes. In contrast, low levels of architectural similarity between sites suggest settlements subscribe to their own community identity and adhere to, if not actively promote, their own distinctive character. Architecturally distinctive constructions present in settlements are particularly visible mechanisms deployed in the construction of unique community identities.

Overcoming this overemphasis on the household requires a reorientation of theoretical approaches to instead focus on how structures and the spaces in-between are interlinked to construct and reconstruct the Neolithic built environment. The fabric of the built environment not only reflects pragmatic functionality but also reflects and facilitates social cooperation and competition, where the intensity of shared experience may be emphasized by the density of construction and constant presence of neighbours within the PPN settlements. Our understanding of the significance of boundaries to demarcate strongly formed identity may be reflected in physical boundaries around communities. Such boundaries, whether formed simply by the sharp transition between the built environment and its surrounds, or occasionally by the construction of walls as at Beidha or Jericho, suggest an intentional construction of limits that define the spaces and places for much routine interaction.

Local Neolithics – Dynamic Diversity in Southern Jordan

Recent excavations in southern Jordan have suggested that a provincial identity has been constructed within this province. If this is correct, then local identity would provide an important baseline indication of the presence of multicentric Neolithic developmental trajectories. In southern Jordan, Neolithic developmental trajectories appear to be rooted in the earlier Epipaleolithic Harifian complex (Finlayson 2013), understood as a local hunter-gatherer adaptation to the colder and more arid conditions of the

Younger Dryas in the Negev (Goring-Morris 1987). Radiometric determinations recovered from the earliest occupation at Wadi Faynan 16 (WF16), a PPNA settlement situated *c.* 75 km to the east of Harifian sites, indicate that there is some chronological overlap between the earliest PPNA in southern Jordan and the end of the Harifian, suggesting that the Harifian set the local cultural framework for PPNA societies in the south of Jordan and Israel (Goring-Morris 1987; Finlayson *et al.* 2011).

In southern Jordan, the PPNA spans from approximately 12,000 cal BP to 10,300 cal BP. Rather than a single cultural-chronological entity, there are technological and architectural shifts within the PPNA that warrant its separation into distinct Early PPNA and Late PPNA phases (Finlayson and Makarewicz 2017). Most notably, there is an absence of el-Khiam points and Hagdud truncations in the Late PPNA techno-complex, and a shift from semi-subterranean pisé architecture during the Early PPNA to free-standing, circular stone architecture present during the later PPNA (Finlayson and Makarewicz 2017). WF16 and 'Dhra fall within the Early PPNA, while WF16 (Trench 3), Zahrat edh-Dhra' 2 (ZAD2), and el-Hemmeh share technological and architectural features, as well as later radiocarbon dates, associated with the Late PPNA. Between them, these sites have together revealed evidence for pre-domestication cultivation, wide variation in architectural forms, significant storage facilities, and diverse mortuary and ritual traditions.

Radiometric determinations and architectural evidence derived from several Late PPNA and PPNB sites located in southern Jordan hint at direct continuity between the Late PPNA and the MP-PNB with no "intermediary" Early PPNB phase (Finlayson and Makarewicz 2017). In southern Jordan there appears to be a local development from the PPNA to the PPNB, illustrated by the distinctive Late PPNA at WF16, Zahrat edh-Dhra' 2, and el-Hemmeh, with chronological continuity into the Middle PPNB (Kinzel 2013; Finlayson *et al.* 2014; Finlayson and Makarewicz 2017). At both Beidha (Phase A) and Shkārat Msaied early dates spanning from 8632 cal BC to 7351 cal BC (which overlap with Early PPNB radiometric determinations obtained from settlements located in the northern Levant and the southern Levantine site of Motza) seamlessly follow dates recovered from Late PPNA settlements. Previously discarded as "too early" for the MPPNB, the dates from Beidha and Shkārat Msaied may instead indicate the earliest Neolithic occupation of these settlements. Architectural similarities

Fig. 1   PPNA Dhra' general view of architecture. (copyright Dhra' Excavation Project)

between some of the circular structures at Late PPNA el-Hemmeh and a Phase 1 wall remnant (later re-modeled) at Shkārat Msaied, which both exhibit upright stone slabs, reinforce the continuity between the later PPNA and PPNB in southern Jordan. There is no evidence, technological, architectural, or otherwise, indicating that the MPPNB in southern Jordan is directly derived from northern influences (contra Kuijt 1997).

Early PPNA

One of the most striking features of PPNA sites located in southern Jordan is their eclectic style and configuration of architecture. Despite the close geographical proximity of these sites to each other, none of the structural forms so far identified at each site are held in common. Specific structural elements, such as the upright notched stones found at 'Dhra and WF16, however, occasionally appear across settlements.

The site of Dhra' (Fig. 1; Finlayson *et al.* 2003), located near the southern end of the Dead Sea and dating to the earlier part of the PPNA (*c.* 12,000-10,800 cal BP), is a large settlement (*c.* 1 hectare) containing storage buildings, workshops, and dwellings. Most notable are three buildings constructed with pisé walls and replete with raised floors suspended on rafters supported by rows of upright stones (Fig. 2; Kuijt and Finlayson 2009). The presence of raised floors and cereal phytoliths in one building, which would have kept the contents of the building dry and relatively cool, suggests these structures were used to store harvested cereals. These storage buildings appear to be free-standing structures that were set apart from other structures and publicly very visible. The external storage buildings have been interpreted as communal, following Flannery (2002) who suggests that storage placed in the open is intended to be shared. The structures at Dhra' would certainly have been visible to the wider community, as presumably would have been the deposition of stored goods and their removal. Even if not shared, the visibility of the practices associated with food storage is indicative of enforced social norms and therefore common social behavior, an important contribution to the construction of community (Joyce and Hendon 2000).

Fig. 2   PPNA Dhra' vertical view of stone uprights in storage building. (copyright Dhraʿ Excavation Project)

Food processing areas also featured at 'Dhra were exemplified by two structures containing cup-hole mortars and cutting slabs set in mud plaster floors enclosed by light wattle and daub screen walls and a roof held by wooden posts running outside the screen walls. These shelters are very open and the activities undertaken within would have been very easily observed – whether they were open to anyone to use or not – suggesting, as with the storage buildings, that food processing was not a private activity, and processed food was likely available for sharing or at the very least was part of shared activity and practice.

A third category of buildings also identified at 'Dhra includes four circular structures revetted into an artificial slope formed by a substantial midden deposit. The revetted sides of these structures consisted of a substantial stone wall, while the downslope side appears to have been more open. These structures have been tentatively interpreted as dwellings, although they lack hearths, and are barely more frequent than the other building types. Two examples were subsequently replaced by storage buildings built on slightly offset footprints, while a fourth, the earliest, lies below both a storage building and a food processing shelter, together suggesting that even if these are dedicated dwellings, they do not show the household continuity observed elsewhere in the Neolithic.

The presence of distinct building types designed for specific functions of storage and food processing indicates that some functions that might be associated with and contained within houses were located externally. It is possible that each building type was combined in units – a dwelling together with a store and a food processing shelter, representing a slightly dispersed household structure. There is, however, no obvious spatial patterning that clearly links these different structure types in this manner, and the change in functional use of building plots suggests a degree of fluidity in the function of each space that would have made the tight association of dwelling, workroom, and store difficult to replicate.

The main occupation phase at WF16 is small, in the order of 1,500 m^2, and provides a broadly contemporary occupation about 60 km to the south of Dhra'. The architecture consists of a densely packed array of well-preserved semi-subterranean, pisé-walled structures and emphasizes the diversity in architectural forms present in the PPNA (Fig. 3; Finlayson *et al.* 2011: Fig. 2). Within the site, there is considerable variation in architectural forms so that no two buildings are identical and none of the range of architectural forms present at 'Dhra is present. Structures vary in size, with the majority of structures ranging from just over 1 m^2 to *c.* 36 m^2. While they are generally elliptical in shape, there is considerable variation in the presence or absence of internal divisions and compartments and built-in features such as mortars. Formal hearths are very rare, although there is some evidence from charred material and burnt patches of floor that burning embers may have been brought into structures as needed. The mortars presumably represent episodes when structures were used for processing, perhaps most commonly of foods. The informal interior hearths may indicate that activities such as cooking mainly took place outside. One of the smallest structures contained a bead-making toolkit, and the small structures have been interpreted as probable workshops.

Two buildings are of a similar scale (5.5 by 4.5 m, and 5.0 by 3.3 m) to buildings identified at PPNA settlements located on the Middle Euphrates and interpreted as communal structures (Stordeur *et al.* 2000). At WF16 one of these large structures supported a suspended floor that surrounded a small cell built of wattle and daub. The second large building features an internal partition that divides the structure asymmetrically, with the larger partition characterized by a suspended floor. Both have been interpreted as storage structures, following the evidence from Dhra'. The large scale of the two storage buildings at WF16 suggests that if they were for shared storage, they may have provided for the entire small community.

At WF16 there is also a single very large structure (O75), remarkable for its considerable size and internal form. Measuring *c.* 20 m in its long axis, this structure contains an elliptical central space (15 by 11 m) surrounded by symmetrical tiers of benches, with decorated upright faces. A deep trough that runs through the structure, terminating at one end beside two low platforms, each containing a cup-hole mortar, divides the central space. The presence of the mortars suggests that the structure may have been for a food – or harvest – related activity. The investment of time and energy in the construction process indicates that it was a communal construction effort. The presence of tiered benches with decorated surfaces suggests that a communal or even performative activity took place within it. The scale and open nature of O75 are such that a large number of people, possibly the entire community, could have been gathered inside it (Finlayson *et al.* 2011).

The architectural sequence within individual structures at WF16 shows that the function of buildings changed over time with divergences in internal form and in patterns of infilling, from buildings that were repeatedly reused, often changing in function, to others that were deliberately and rapidly filled after falling out of use. The pronounced degree of variation in architectural form and function seen at

Fig. 3   WF16 overview of highly varied architecture. (copyright WF16 Project)

WF16, together with the frequency of repair and replacement, suggested that the built environment was highly dynamic. The range of structures present suggests that the community did not use the built environment predominately as a means to provide residential shelter but rather for specific purposes that belong to the entire community.

Test-pitting and small excavation units have shown that both WF16 and Dhra' have sharp boundaries containing densely packed architecture. Even the midden material accumulating on the site is kept within the site boundaries, and there is no halo of artefactual material around the sites. The transition from being on or off the site is stark, indicating an abrupt change from being within the settlement or outside it. Creation and preservation of such an abrupt boundary must have been intentional and maintained, had some significance for the community, and had a direct impact on daily practices.

The frequent modification of the architecture, again common to both sites, shows that the built environment of the settlement was dynamic, the opposite of the stable house sequences used to support the household lineage model, and is more closely aligned with the model of community construction as a constant process of negotiation and renegotiation, with the architecture being intimately involved in that building and rebuilding of community. Each community appears to have developed its own way of constructing its own built environment, even for buildings that appear to have served similar functional purposes such as the storage buildings, suggesting that each community was experimenting with its own ways to build. As a result, the built environments at the Early PPNA sites of WF16 and Dhra' are quite different. At WF16, the variation between buildings strongly suggests that every individual structure was designed for its own purpose. The presence of the large communal structure at WF16 but the absence of any similar building at Dhra' may be further evidence of differentiation between the settlements and provides an impression that the WF16 community is more clearly built around shared buildings than at Dhra' (although smaller scale excavations at Dhra' may mean that the full range of structures were not exposed at the site). Moreover, the site of WF16 is sufficiently small that a single kin group might have occupied it, possibly maintaining the kin-based social structures commonly associated with hunter-gatherer societies but employing collective practices, from construction projects, sharing of stores, and public performance to maintain the group in a more sedentary setting. There is no architectural

evidence for emerging household lineages, as residential structures do not dominate the settlement and buildings regularly change function.

While the presence of separate structures for use as workshops and storage suggests that facilities were open and shared at Dhra', the presence of a series of repeating types of building suggests a different form of social organization present than at WF16, with some form of neighbourhood clustering at Dhra' within the overall community. The limited overlap between architectural form between Dhra' and WF16 suggests that the two communities, which expressed similar functions such as storage buildings in different manners, created and maintained separate identities. The local architectural techniques employed at each settlement would have made the buildings visually very distinctive, helping to express difference between the two communities. Intriguingly, although the chipped stone assemblages from both sites are very clearly within the same PPNA tradition, the el-Khiam points present at each site reveal that different manufacturing traditions were maintained over time (Smith 2007). These differences would not have been readily visible as they primarily affect the basal shape of the points, likely invisible within the haft, and the contrast between direct or inverse retouch on the points, only visible on close inspection. The two communities displayed a shared emblematic form while maintaining their own way of doing things.

Late PPNA

A distinct Late PPNA phase (10,800 to 10,300 cal BP) has been identified at three sites, WF16 (Trench 3), Zahrat edh-Dhra' 2 (ZAD2), and el-Hemmeh (Finlayson and Makarewicz 2017), but not at Dhra', which appears to have been abandoned at this time. A key characteristic of Late PPNA architecture is visible in the appearance of a new form of architecture characterized by roughly circular, free-standing, and frequently stone-walled buildings.

At WF16, there is a small group of circular free-standing stone walled buildings. One of these has a single sub-floor burial (Finlayson and Mithen 2007). Late PPNA architecture also is evident in a large (9-m diameter) pisé structure (O100), which has walls up to 2 m thick, similarly free-standing, and containing a large and elaborate cuphole mortar. This structure was located of the hollow of the earlier large building which appears to have preserved it as the sole surviving example several similar buildings now mostly eroded away, but evident from a surface scatter of cuphole mortars which unfortunately means it is impossible to be certain if this building was typical of this phase. ZAD 2 is located about 5 km north of Dhra' and appears to be restricted in date to the Late PPNA phase (Edwards *et al.* 2004). It consists of a small group of large stone built structures similar to Trench 3 at WF16. There is no evidence for any communal architecture, but the site is small and short-lived (Edwards *et al.* 2004; Meadows 2004).

The site of el-Hemmeh is situated approximately 25 km to the southeast of 'Dhra and has a late PPNA phase contemporaneous with the latest phase of occupation at WF16 (Makarewicz and Rose 2011: Fig. 1). The architectural forms visible at el-Hemmeh consist of multiple free-standing and semi-subterranean predominantly stone-built circular and curvilinear structures, including one identified as a granary. The diversity of built forms is much greater at el-Hemmeh than at the other Late PPNA sites, and there is much more evidence for reuse and adaption of structures over time. In particular, the mortuary traditions used at el-Hemmeh are unique. While burial practices at other PPNA settlements in the region entailed placement of the dead underneath building floors, or sometimes cut through building walls in a flexed position, the dead at el-Hemmeh were placed sitting upright in specialized mortuary furniture (*e.g.* semi-subterranean stone cists) and indicated by basalt markers and pisé platforms. The collection of multiple burials within a tightly defined area appears as a very clear example of a communal function, although the close association of burials of younger individuals with older ones may indicate family relationships. The combination of distinctive burials in a collective mortuary structure, combined with evidence for reopening and resealing the individual cists, suggests that ritual practice at el-Hemmeh was very specific to this community.

While the poor preservation and small size of the settlements at WF16 and ZAD2 provide little information on settlement organization, it may be that communal structures declined in significance during the Late PPNA. The larger and more extensively excavated Late PPNA site of el-Hemmeh gives a different picture, however. The diversity of architecture of el-Hemmeh and the presence of a number of unique structures, including a mortuary structure, are more reminiscent of the Early PPNA settlements, with no clear indication of a standard dwelling house and with a highly individual and distinctive settlement pattern characteristic of a locally distinct community. The mortuary structure seems to be both communal and unique, deploying a highly distinctive ritual practice to develop and build a localized sense of community identity.

MPPNB

The MPPNB settlements of Beidha and Shkārat Msaied maintain the tradition of circular construction used during the PPNA, which is in sharp contrast to MPPNB sites located elsewhere in the southern Levant that are characterized by rectilinear construction. The earliest architectural phase excavated at Beidha dates to early within the MPPNB and consists of a series of sub-circular buildings with thick stone walls inset with post-sockets, with internal diameters ranging from *c.* 2 m to 4 m. Only two buildings contain hearths, and there are no internal partitions. The construction style is similar to the arrangement of posts within walls found in communal buildings at PPNA to PPNB transitional Jerf el Ahmar, located in the northern Levant (Stordeur *et al.* 2000). Unlike at Jerf el Ahmar, at Beidha this construction style is common to all the buildings of this phase. One (Building 37) appears to have served as a communal function, standing a little apart from the other clustered buildings and opening onto a courtyard area. Building 37 is also much larger (with an interior diameter of *c.* 7 m) than other contemporary structures on the site and contains a unique clay on stone floor that was built for intensive heavy use, unlike the plaster floors found in the majority of structures. The settlement is even more sharply defined than the PPNA sites, as it is bounded on its southern and eastern sides by a wall, a steep drop to the wadi on its west, and by a cliff in its northern side.

Shkārat Msaied is located approximately 10 km from Beidha and is composed of a series of circular buildings consisting of massive stone walls featuring post sockets, very similar in character to those seen at Beidha. As at Beidha, the buildings do not have internal partitions. Despite the similarity between sites, there are numerous points of architectural detail at Shkārat Msaied that differ from construction at Beidha, including the placing of upright stones on either side of the entrances to buildings, the presence of external paved areas, and one building on the edge of the settlement with stairs leading up to a possible second storey, as well as a mortuary building near the centre of the settlement (Building F, Kinzel *et al.* 2011). Several of the buildings incorporate upright slabs in their walls, not found at Beidha except within the unusual structures comprising the extra-mural cluster. In addition, there are various internal features present in Shkārat Msaied structures, including stone-lined bins and plaster-moulded hearths that are not evident at Beidha. Given that Shkārat Msaied is contemporary to the similar architecture at Beidha and is located so close to Beidha, the architectural differences are striking.

These early MPPNB settlements individually continue to show a number of the features anticipated within communities characterized by a strong sense of identity. There are marked differences between the two settlements in the details of their architecture, including between the communal buildings, suggesting that despite being contemporary and geographically very close, they each have a primary strong settlement-based community identity. As seen for the preceding PPNA, these MPPNB settlements are sharply bounded within their landscapes and densely packed architecturally. However, the core architectural grammar of both Phase A Beidha and Shkārat Msaied is the same, indicating that both settlements belong to the same provincial community. The continued use of circular architecture and communal buildings (B37 at Beidha, Building F at Shkārat Msaied) suggests that the construction of community in southern Jordan was somehow fundamentally distinct compared to other provinces within the southern Levant. Nevertheless, the people building these structures are clearly in contact with the rest of the southern Levant. They have adopted the technically complex bipolar chipped stone reduction technique, and also point types typical of the MPPNB throughout the Levant, and their expertise in chipped stone working suggests a thorough technology transfer, indicating that maintaining circular architecture is an intentional strategy and not a reflection of geographical isolation.

New Social Worlds – Community Identity in the Early Neolithic

Early Neolithic communities of southern Jordan have a distinct local history that runs from the start of the PPNA through to the PPNB. There are traits that reveal a provincial unity, such as the development of storage structures with floors raised on beams supported by notched stones in the Early PPNA, which are not known from elsewhere in the southern Levant. The Late PPNA proposed for the south of Jordan is a very specific local development, not identified in other southern Levantine regions. The construction of distinctive circular stone buildings in the MPPNB continues this south Jordanian identity.

The presence of shared and communal architecture within the PPNA, prior to any evidence for autonomous households, suggests that communal buildings existed as integrative mechanisms before the development of autonomous households. The continued construction of such communal buildings in the MPPNB may indicate that rather than being a response to increasing household autonomy and

disintegrating communities, these existing integrative mechanisms actually facilitated household developments. In the PPNA, communal architecture appears to have included stores and workshops, as well as spaces for community participation. By the MPPNB the open and visible stores and workshops disappeared and were incorporated within domestic structures but not, as yet, within partitioned internal rooms. However, communal buildings likely still served as venues for community activity that integrated evolving community structures.

All of these early Neolithic settlements comprise densely packed architecture with an abrupt transition between the settlement and its surroundings. The tight concentration of architecture, and presumably people, perhaps indicates something about attitudes towards space in the landscape and the nature of settlement. The concentration of people increased the intensity of face-to-face contact between them, especially where they shared facilities, or accessed them in full view of their neighbours. The tightly confined, densely packed settlements suggest that proximity was being actively promoted to help facilitate a very strong sense of community. The way they organized their settlements, constructed their buildings, and performed communal activities may have been designed to stress differences as part of the construction of a shared community identity, holding settlements together. The relative geographical proximity of distinctive sites of close contemporaneity, such as WF16 and Dhra', el-Hemmeh and ZAD 2, and Beidha and Shkārat Msaied, supports the contention that communities were geographically defined. The inter-site differences that persist throughout the early Neolithic hint at very local communities centered on individual settlements.

The notion that community identity was related to individual sites certainly needs additional qualification as at present our sample is small, which may overstate the difference between sites. The possibility that populations were not fully sedentary raises further difficulties in proposing that a single site directly corresponds with a simple community identity on a one-to-one basis – the population resident at any given site may have transformed through the seasons. The likelihood that hunter-gatherer-cultivator populations were not completely sedentary, at least within the PPNA, suggests communities would not have been restricted to individual sites as a partially mobile community would have occupied small networks of settlements. However, the range of differences between settlements in close geographical proximity to each other still suggests an extremely local sense of community identity was being fostered. However, these local communities would not have been isolated from one another. Instead, individual members may have belonged to other communities, and the individual communities as a whole were also components within a wider settlement distribution where the commonalities between sites suggest a provincial (southern Jordan) community identity was also present. The absence of evidence for classic southern Levantine MPPNB mortuary practices involved with skull plastering indicates that a different set of belief systems operated in southern Jordan from the rest of the southern Levant, which would have contributed to the formation of a strong shared provincial identity. The absence of skull treatments may also be independent confirmation that southern Jordanian communities did not develop as collectives of independent households but instead as well-integrated communities.

Different levels of community were present in the early Neolithic at the level of individual settlement, and at the level of province (*e.g.* southern Jordan, north Jordan, West Bank, and the Galilee). Neolithic communities are likely to have identified most strongly with the lowest tier of community. Regional technologies, such as the MPPNB stone tool technology, show that there was also a much wider PPN connectivity, possibly reflecting a loosely bound Neolithic regional community. Neolithic southern Jordan was clearly part of this wider early Neolithic society, fully engaged in the interactions leading to the Neolithic transformation but acting as a distinct cultural group, defined by its own social codes, subsistence approaches, and material culture.

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"I am We":
The Display of Socioeconomic Politics
of Neolithic Commodification

Gary O. Rollefson[1]

"…The only goods [the savage man] recognizes in the universe are food, a female, and sleep … But who does not see, without recurring to the uncertain testimony of history, that everything seems to remove from savage man both the temptation and the means of changing his condition? … In a word, how could such a situation induce men to cultivate the earth, till it was regularly parceled out among them; that is to say, till the state of nature had been abolished? …"
"The first man who, having enclosed a piece of ground, bethought himself of saying This is mine*, and found people simple enough to believe him, was the real founder of civil society. From how many crimes, wars and murders, from how many horrors and misfortunes might not any one have saved mankind, by pulling up the stakes, or filling up the ditch, and crying to his fellows, 'Beware of listening to this impostor; you are undone if you once forget that the fruits of the earth belong to us all, and the earth itself to nobody'."*

Jean-Jacques Rousseau, *On the Origins of Inequality,* 1754

"[The monogamous family] develops out of the pairing family, as previously shown, in the transitional period between the upper and middle stages of barbarism; its decisive victory is one of the signs that civilization is beginning. It is based on the supremacy of the man, the express purpose being to produce children of undisputed paternity; such paternity is demanded because these children are later to come into their father's property as his natural heirs."

Friedrich Engels, *Origins of the Family, Private Property, and the State*, 1884

"One for all, all for one."

Alexandre Dumas, *The Three Musketeers*, 1844

Abstract: Competition for resources (arable land, pasturage) within settled farming populations became increasingly intensive as those populations grew. One strong measure to reduce the tensions that might lead to conflicts over such commodified aspects of the environment was the development of corporate kinship groups that established exclusive access to certain land parcels (among other resources) to their members; abiotic resources were also claimed exclusively, such as names, symbols, and myths. A correlated development was the expression of corporate identities, signs that distinguished one corporate group from all others. While many of those signs may have been lost to prehistorians, others have survived. The site of 'Ain Ghazal provides good evidence of such corporate identities as reflected in architectural clustering and ritual practices, particularly during the Middle PPNB (MPPNB) and Late PPNB (LPPNB) periods.

Keywords: MPPNB, LPPNB, ritual, myth, Neolithic identities

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Introduction

Despite the remarkable naivety in the first two quotes above, one shared element in both is the notion of an evolution from one simple social state to a more complex one, although neither provided much motive for such a development. Dunbar, on the other hand, put the reason for this step towards "civilization" squarely at the feet of one causal phenomenon: settlement (Dunbar 2013: 25). Two consequences result from sedentism: first, the resident population concentrates resource depletion in a relatively small area over long periods of time, and second, population growth, which intensifies resource depletion, results from the increased fertility and longevity of women who give birth to more children in their lifetimes (Roth 1984). "Dunbar's number" - at about 150 - represents the level of crowding in a community where social stresses affect the sense of well-being of the residents, in part due to mistrust of many of the population's members because they are not well known, and in part to a rise in anxiety over the appropriation of resources necessary for health and satisfaction. If there is a compelling reason to maintain the large size of a community, or even increase the population, then adjustments to social organization will be necessary to prevent community collapse and dispersal.

Unilineal Descent Groups

One development was the establishment of a social order that relied on establishing claims on certain commodities[2] for the exclusive exploitation of segments of the society: the establishment of corporate kinship groups based on descent. Ember *et al.* (1974) long ago demonstrated that unilineal descent groups were the most effective means of maintaining social order in the threat of warfare and intensive competition for resources. There are other organizing systems, including ambilineal descent, but there is less ambiguity and greater security in unilineal kinship groups, whether patrilineal or matrilineal (Scheffler 1966: 541-542).

A notable outcome of the emergence of unilineal corporate groups[3] was manifest inequality in terms of what has been described as "inalienable possessions" (Weiner 1985, 1993; Mills 2004), including both physical assets as well as social entities such as names, myths, ceremonies, and other intangible goods. "Property determines exclusive rights to things. The core of property is the right to exclude" (Earle 2000: 40), to the point that even members of one corporate kinship group might be withheld from interacting with other corporate kinship units as indicated by the endogamy at Basta (Alt *et al.* 2013). Corporate kinship groups form a version of social security for their members, a source of communal holdings for all their members in times of stress. The absence of this kind of corporate protection can lead to loss of social status and ostracism, perhaps represented by the "trash burials" at 'Ain Ghazal (Fig. 1; Rollefson 1986: 50, 2000: 169-170).

Symbols and Identity

The 'Ain Ghazal trash burials show the importance of corporate kin group identity. That identity is consciously and subconsciously understood by each member of a unilineal kin group, and symbols of that identity are usually displayed, even if only periodically (*cf.* Benz and Bauer 2013). The materials that might be involved in such identification played a big role in terms of archaeological visibility. Designs and colors used in body painting, tattooing, weaving, embroidery, or the decoration of organic materials such as wood were rarely preserved since Late Epipaleolithic and Neolithic times (but see the remains at Nahal Hemar, *e.g.* Bar-Yosef and Alon 1988), but durable material such as stone, plaster, and even bone show that they served as media for group identity.

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[2]   Commodities are things (physical/abstract, environmental/sociocultural) people use that have been imbued with "value"; if commodities are in demand, a person will exchange something of equal "value", however that is determined. Air is not a commodity because it is readily and abundantly available to everyone. Water or land or expertise or minerals might be commodities if a person must "pay" for them; see Gebel 2010 for a discussion of the development of commodification during the Neolithic period.

[3]   A "corporate group" is comprised of people who have exclusive control over certain commodities for the benefit of that group, such as agricultural land, water rights, certain rituals and names, *etc*. Some corporate commodities may be exchanged under strict regulation; others may not be exchanged at all. Membership in a corporate group is according to strict rules, and for unilineal corporate groups, it is determined by parentage.
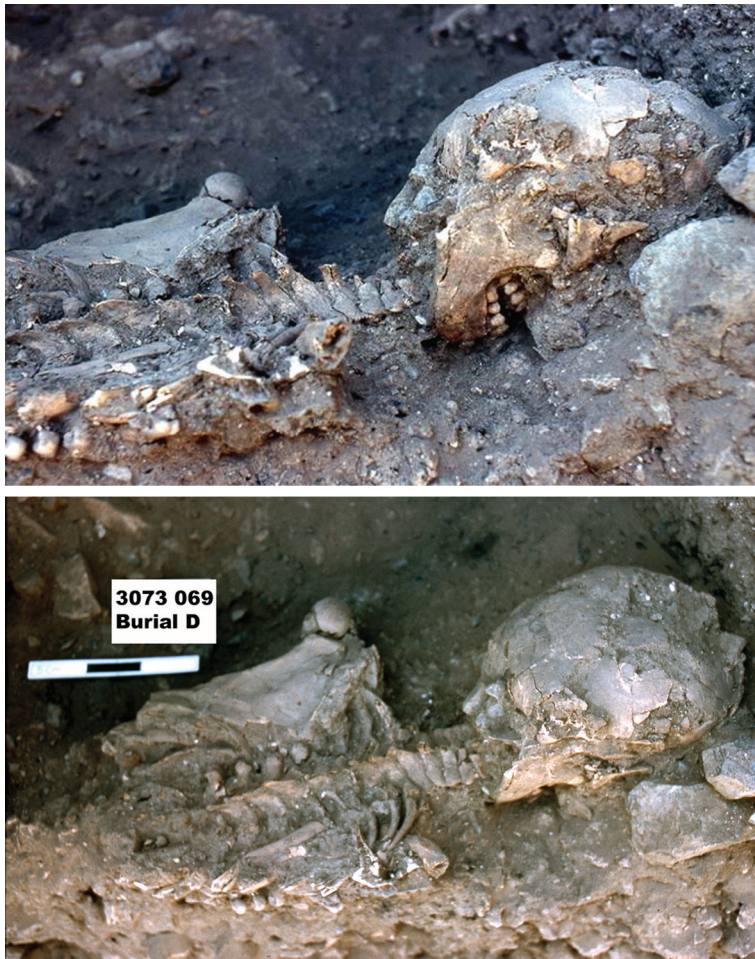
Fig. 2   Red (originally) stripes painted on the face of a statue from the 1983 cache at 'Ain Ghazal. (photo: B. Byrd)

Fig. 1   Two MPPNB trash burials from 'Ain Ghazal. (photos: B. Byrd)

The presence of facial paint on one of the 'Ain Ghazal statues, for example, may have social importance (Fig. 2), and the finger painting on the legs of one of the 1983 'Ain Ghazal statues might indicate a specific pattern of tattooing (Fig. 3a). The seven-fingered female from 'Ain Ghazal may suggest some special feature about the people she represented (Fig. 3b), and the same might be true of the six-toed foot fragment from another statue. The bearded face on the bust from Jericho also may have had critical meaning. As with the statues, the plastered skulls throughout the central Levant (Jericho, Kfar haHoresh, Beisamoun, Tell Aswad, Tell Ramad, Yiftahel, and 'Ain Ghazal) also possess a certain degree of standardization as they reflect specific personages of kinship groups, and while the artistic canons differed considerably from community to community, they nevertheless segregated sets of families apart from others.[4]

Possible special cult objects displayed in special rooms have been reported from Jericho and 'Ain Ghazal. A monolith of an anomalous bituminous limestone about 85 cm high and *c.* 25 cm wide, apparently oval in cross-section, fit into a niche at the end of a rectilinear building at Jericho; other than the shape and location of the stone, there was nothing else special about it, but according to Kenyon, "Here is almost certainly the cult object worshipped in this little shrine, which perhaps had the function of a private chapel of the house" (Kenyon 1981: 307; see Pl. 172-173). A parallel instance from 'Ain Ghazal involves a shaped monolith of brilliantly white limestone (Fig. 4), roughly oval in section, about a meter high and 40 cm wide, set into a former doorway of the upper cult building/"temple" (Rollefson 1998: 51).

The role(s) of the plaster statuary at 'Ain Ghazal and Jericho remain(s) obscure. The reason for both full-standing statues and smaller busts is elusive, and there is no corroborating information to support one speculative explanation over another. The stylistic similarities among the plastered

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[4]   The geographic restriction of modeled skulls is a prime example of what Gebel called the "territoriality of symbols" (2013: 39), despite the rare occurrences at Köşk Höyük and Çatalhöyük. Even the differences in style of the modeling in the central Levant may have represented intentional distinctions in the "proper way" of representing the dead individual. The Anatolian examples of plastered skulls are nearly a millennium younger than those in the southern Levant and might represent "convergent cultural evolution".

Fig. 3   a: Statue from 'Ain Ghazal with red stripes applied to the legs using finger painting technique.
b: female statue from the 1983 cache at 'Ain Ghazal. The proper left hand has seven fingers. (photos: P. Dorrell and S. Laidlaw)

skulls and the facial treatment of the statuary at both 'Ain Ghazal and Jericho suggests the two forms of expression are closely related. If the skulls represent real humans with the ancestor world (Rollefson 2004b), then it is plausible that the statuary represents a two-tiered mythical ancestry system.[5] Twenty-six statues came from one cache at 'Ain Ghazal (Tubb and Grissom 1995: 446), each with very distinctive faces that indicate different individuals, and it would seem that each was associated with more than a few households, perhaps as individual representatives of all of the kin groups in the entire community.

While it is often difficult and dangerous to attempt to determine sex/gender in sculptures, for the present it might be useful to regard those figures with prominent breasts to represent females and those without breasts as males. In the 1983 cache, there were 12 or 13 full-standing statues, three of which were probably female (*cf.* Tubb and Grissom 1995: Figs. 4-5, 12; Rollefson 1984: Abb. 3) and 9-10 that were probably male. The disparity in the sex ratio might imply that the corporate kinship groups were patrilineal (although presumably there may have also been several matrilineal groups).

Fig. 4   A dazzling white limestone orthostat in the blocked doorway of the upper cult building/"temple" at 'Ain Ghazal. (photo: G. Rollefson)

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[5]   The two "tiers" are represented by full-standing statues up to a meter tall on the one hand and by busts in the 35-45 cm range on the other hand. In view of the rarity of these two kinds of representation, it is pure speculation of what the two types might mean symbolically.
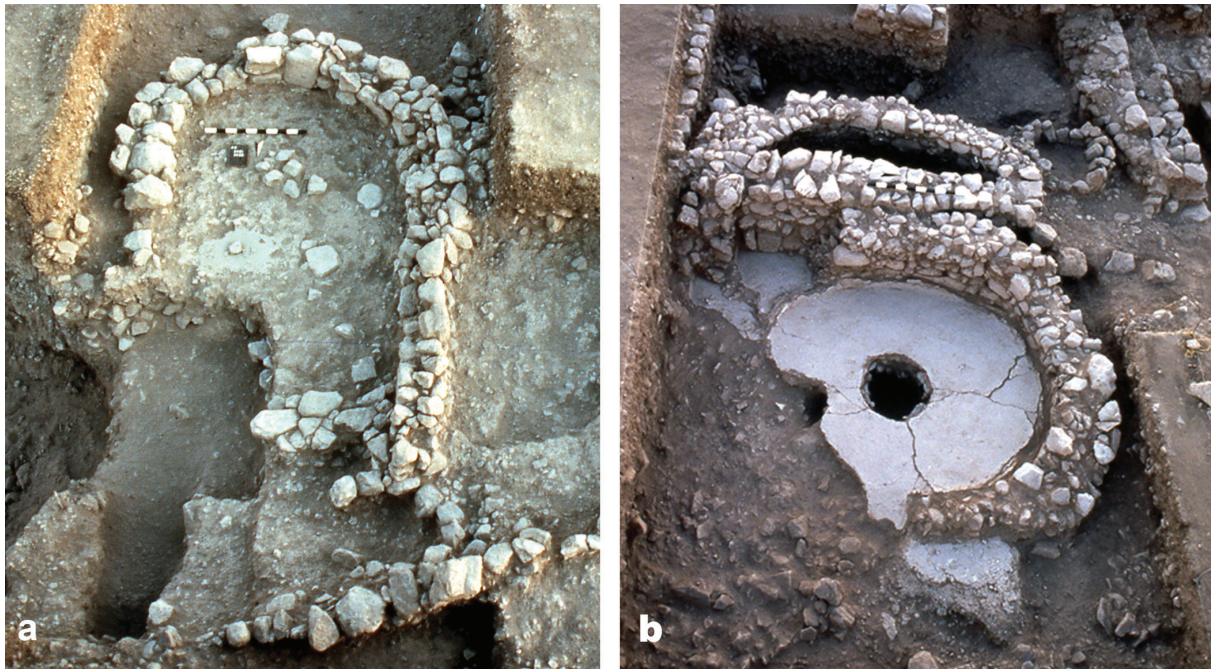
Fig. 5   a: LPPNB apsidal building in the Central Field of 'Ain Ghazal. Note the false orthostat in the center of the apse. (photo: H. Wada). b: Originally an LPPNB apsidal building in the North Field, after several phases of remodeling the building became circular in shape. (photo: B. Degedeh)

Calamity and Consequences

Much has been written about the problems involved with rapid climatic change involving the "8.2 kya event" (*e.g.* Weninger *et al.* 2006), but there were earlier "events" that appear to have been at least as climactic. One was the widespread abandonment of farming villages in the Jordan Valley and in Palestine near the end of the MPPNB period and the consequent relocation of populations into highland Jordan, which resulted in the formation of LPPNB megasites (Gebel 2004; Rollefson 2004a) and which had a severe impact on social identities.

During a short period at the middle of the 8th millennium calBC the size of 'Ain Ghazal and its population doubled, perhaps within a generation or two (Rollefson and Pine 2009), and the same happened at Wadi Shu'eib (Simmons *et al.* 2001), eventually reaching 14-15 hectares in area. Elsewhere, new settlements of similar sizes were established for the first time as megasites, including Basta (Nissen *et al.* 2004), es-Sifiya (Mahasneh and Bienert 2000), Basit (*e.g.* Rollefson and Parker 2002) and 'Ain Jammam (*e.g.* Rollefson 2005). Never before had so many people lived together in such close proximity, crowded into two story buildings for the first time, and adding pressure to not only the physical resources surrounding the megasites, but to the social fabric of the communities. With estimates of as many as 3,000-4,000 people in the same locale (Rollefson and Pine 2009: Table 1; Gebel, pers. comm.), "Dunbar's number" threshold had obviously been long surpassed, and major realignments were necessary if the new population centers were to maintain their integrity.

Reorganization is clearly seen in the domestic structure of the settlement at 'Ain Ghazal: where MPPNB housing was principally oriented towards nuclear family housing, the LPPNB witnessed the construction of two-story multifamily structures, probably older parents and married brothers or married sisters; walls to separate extended family compounds appear for the first time at 'Ain Ghazal. (Compound walls occurred at MPPNB Jericho: Kenyon 1981: 114.) Where the MPPNB subsistence economy was based on nuclear families (based on the size of dwellings) as the primary units of production and consumption, the new stresses on farm productivity may have required a switch to cooperative extended family approaches to exploit previously ignored plots that were considered too unproductive, which would explain the two story-residences with 14 rooms or more at 'Ain Ghazal and Basta.

The rest of the southern Levant also shows clear evidence of an upheaval, at least in burial practices. While the skull cult was typical of the MPPNB, the practice stopped abruptly[6], as did the manufacture of lime plaster statuary. Perhaps signaling the upcoming turmoil, the second cache of statues at 'Ain Ghazal (which was badly damaged by bulldozers: only eight separate figures could be identified if not reconstructed) included three busts with two heads each. While the 1983 cache was from the middle of the MPPNB period, the second cache stratigraphically came from the end of the period, and the duality in the busts might reflect the collapse of population centers elsewhere and the relocation of some of the people to 'Ain Ghazal.

Two new elements appear in the architecture of LPPNB 'Ain Ghazal that relate to a new twist on corporate identity. One is the building of small apsidal or circular buildings that appear to have had ritual significance, probably associated with kinship group ceremonies for people living in proximity to the structures (Fig. 5). This new LPPNB performance locale would have taken over the function of MPPNB subfloor burials and skull modeling. The small size of these "corporate shrines" indicates that selected members of the kinship group were involved in the rites undertaken in them.

The other new architectural element in the LPPNB at 'Ain Ghazal was the construction of a new kind of public building that was associated not with specific corporate kin groups but with the community as a whole, perhaps superseding the communal aspect of the statuary caches (Fig. 6). The larger two-room cult buildings or "temples", at least 4 x 6 m for the upper one, 5.75 x 7 m for the lower one[7], were located in a prominent hillside location visible to all the members of the community. Too small to hold the entire population, the rituals observed inside the structures were once again probably carried out by leaders of the corporate kinship groups as representatives of their constituents. Ceremonies were probably held on a regular basis, likely involving community feasts supported by secret societies or sodalities whose memberships cross-cut descent groups (Rollefson 2010; Hayden 2012). As with the potential role of the MPPNB statuary, the large cult buildings were the focus of centripetal social organization to offset the centrifugal pressures of corporate competition.

Cataclysm and Collapse

The Early Neolithic period in the Levant enjoyed climatic conditions that were more favorable than today, but the last half of the eighth millennium became increasingly unstable. After a half millennium of climatic volatility (Bar-Matthews *et al.* 1999: Fig. 2), coupled with an unprecedented strain on resources in the vicinity of the megasites (Rollefson and Pine 2009: Fig. 3), the end of the 8th millennium witnessed additional severe turbulence. The megasites suffered major depopulations, as much as complete desertion at southern sites such as at es-Sifiya or a drop in population of 90% or more at the more northerly settlements of 'Ain Ghazal (Rollefson 2015) and Wadi Shu'eib. The beginning of the 7th millennium BC ushered in a thousand years of chaotic changes in temperature and precipitation (Bar-Matthews *et al.* 1999: Fig. 2).

The bases for corporate identities during the MPPNB and LPPNB simply dissolved, and there is little evidence from 'Ain Ghazal or elsewhere to reconstruct the system that replaced the ninth and eighth millennia foundations of corporate kinship groups. Exploitation of the degraded landscapes around the former megasites would certainly have benefited from continued restricted corporate access to physical resources, but the smaller populations in those areas appear to have lost the elaborate features that characterized LPPNB corporate identities. The occurrence of epidemic diseases such as tuberculosis may have begun in the later LPPNB period, but it was a constant threat to PPNC occupants of 'Ain Ghazal (el-Najjar *et al.* 1996) and elsewhere, including Atlit Yam on the Mediterranean coast (Hershkovitz *et al.* 2008). At 'Ain Ghazal burials occurred inside abandoned structures and in courtyards, and grave goods other than occasional chipped or groundstone artifacts were rare. Animal and human figurines and other artwork were not numerous in the excavated PPNC sediments, but this may reflect the relatively small population.

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[6] Except at Tell Aswad and Tell Ramad, where skull modeling continued through the LPPNB; see Stordeur and Khawam 2007. This rupture in the "territoriality" of the skull cult is intriguing and suggests that the turbulence that affected the areas farther south were not as impacting in the Damascus Basin.

[7]   For each of the cult buildings, the downhill room (which did not contain the hearths surrounded by seven stones nor the altars) was severely damaged by erosion, so the original floor area can't be determined.

By the middle of the seventh millennium BC much of the southern Levant had recovered in terms of climatic amelioration (Rowan *et al.* 2015; Rollefson n.d.) and population recovery. Yarmoukian settlements varied in size from less than a hectare at Nahal Zehora 1 (Gopher 2012: 56) to perhaps 7 hectares at 'Ain Ghazal (*cf.* Kafafi *et al.* 2012) to more than 20 hectares at Sha'ar Hagolan (Garfinkel and Miller 2002: Fig. 2.4), although housing density at all of the Late Neolithic sites was much lower than it had been during the MPPNB and LPPNB. Nevertheless, an extended family economic structure in muligenerational housing compounds seems to have characterized some of the settlements (especially at Sha'ar Hagolan, Garfinkel 2004), although at most of the smaller sites, a nuclear family economic/residential structure appears likely.

Corporate and communal identities appear to have bifurcated in the southern Levant during the Pottery Neolithic, with clear stylistic differences in pottery decoration between the Jericho IX and Yarmoukian traditions, for example. Iconography is also very different between the two entities. For the sequence of Jericho IX/Lodian cultures, human and animal figurines are virtually non-existent (Gopher and Blockman 2004: 45), but artwork in the form of clay and stone

Fig. 6   a: The upper large cult building /"temple" at 'Ain Ghazal, view to the north of the inner room. (photo: B. Degedeh). b: The lower large cult building/"temple" at 'Ain Ghazal, view to the east of the inner room with the altar. (photo: B. Degedeh)

human figurines (and clay animal figures as well) experienced a resurgence across the Yarmoukian settlements (Garfinkel and Miller 2002; Schmandt-Besserat 2013a: 83, 2013b: 151). The widespread "coffee-bean" female has been taken to represent forces associated with fertility and protection during birth, but the similar patterns of style and production suggest that they are communal in character and serve as elements of group identity (Garfinkel and Miller 2002: 225-232).

Restricted access to corporate possessions is indicated at Sha'ar Hagolan by walls separating residential compounds from each other; at Jericho, where housing was semisubterranean, there also appear to have been compound walls (*e.g.* Kenyon 1981: 138). Artwork, particularly in the form of clay and stone human figurines (and clay animal figures as well) experienced a resurgence across the Pottery Neolithic settlements, and the recurring "coffee-bean" female has been taken to represent forces associated with fertility and protection during birth, but the similar patterns of style and production suggest that they are communal in character and serve as elements of group identity (Garfinkel and Miller 2002: 225-232).

Closing Comments

Inalienable possessions in the broader sense include everything that is exclusively owned and controlled by a corporate descent group; in this sense, the members of a kinship group are guaranteed access to resources that satisfy physical and social needs. But inalienable possessions also include inalienable
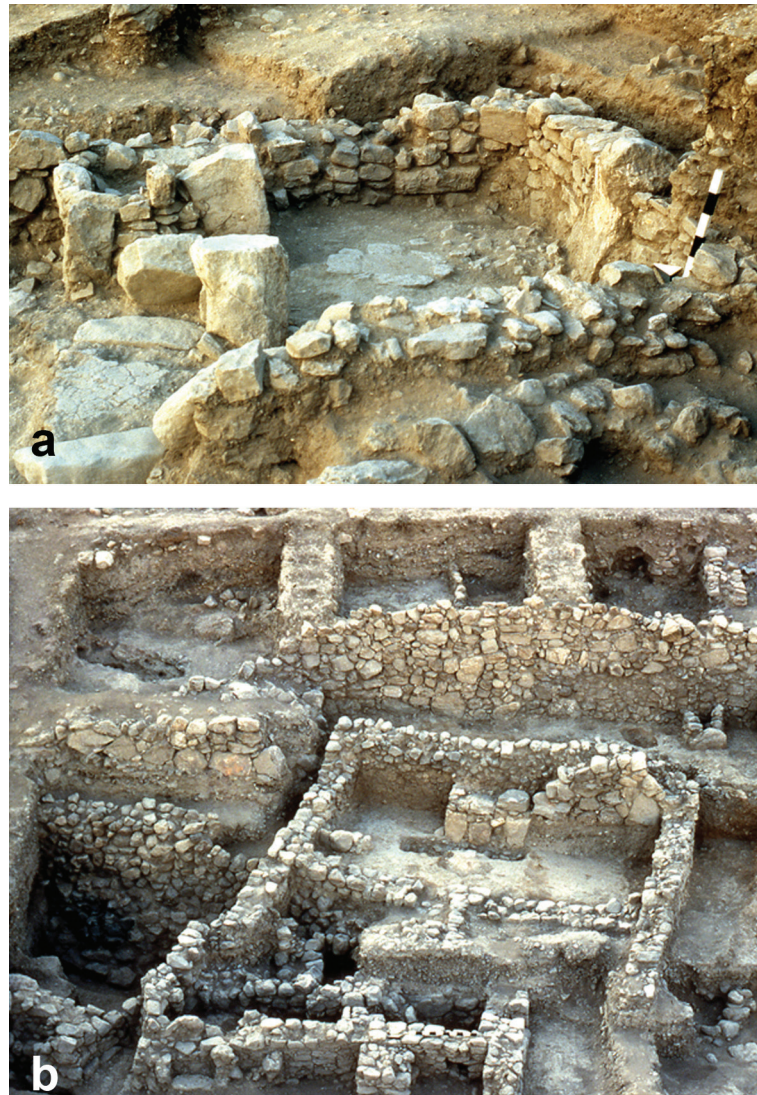
objects, or symbols, that are psycho-sociologically necessary, especially where population densities are high and resource availability volatile.

> *"Inalienable possessions are imbued with affective qualities that are expressions of the value an object has when it is kept by its owners and inherited within the same family or descent group. Age adds value, as does the ability to keep the object against all the exigencies that might force a person or a group to release it to others. The primary value of inalienability, however, is expressed through the power these objects have to define who one is in an historical sense. The object acts as a vehicle for bringing past time into the present, so that the histories of ancestors, titles, or mythological events become an intimate part of a person's present identity. To lose this claim to the past is to lose part of who one is in the present. In its inalienability, the object must be seen as more than an economic resource and more than an affirmation of social relations"* (Weiner 1985: 210).

The climatically halcyon days of the Late Epipaleolithic and Pre-Pottery Neolithic periods enabled sedentary residence that, in evolutionary terms, rapidly set in motion the conditions that would lead to social and economic insecurity in the growing farming population centers. This trajectory, in turn, led to the claims of tangible and intangible properties whose access was available only to members of specific descent groups. The rich symbolic systems that emerged, particularly in the tenth through eighth millennia, defined the place of an individual in the variety of corporate allotments, defined who the individual was in relationship to the rest of the population, thereby reducing frictions that otherwise probably would lead to community fission and possible violence.

The environmental and climatic vicissitudes in the middle and at the end of the eighth millennium overwhelmed the corporate security of farming communities, first in the Jordan Valley and Palestine, then in the highland Jordanian megasites, dispersing large numbers of community populations that for centuries, and even millennia, had enjoyed the wellbeing afforded by corporate kinship structures and their comfortable symbols. The first half of the seventh millennium witnessed enormous depopulation of the southern Levant, and with the reduction of numbers and densities of farmers, symbols became obscure, verging on invisibility, possibly because they weren't as essential as in more crowded environments. After the middle of the seventh millennium, populations grew again, although population densities remained far below what had developed among the megasites of LPPNB times. Corporate identities resumed great importance again during the Pottery Neolithic, and these unique avenues for social security would continue to evolve during the succeeding millennia.

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Neolithic "Cooperatives":
Assessing Supra-household Cooperation in Crop Production at Çatalhöyük and Beyond

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Abstract: Interpretation of early established farming communities as assemblies of economically independent units was originally advanced in the absence of detailed evidence for crop handling and land management. The growing availability of such evidence provides an opportunity to revisit this key inference. Here I review expected correlates for different forms of supra-household cooperation in crop production, and turn to the case of Çatalhöyük to assess the implications of the evidence currently available. Residues of crop handling across a series of buildings point clearly to the salience of co-residential households as contexts not only of storage but also of processing and consumption. Nevertheless, current evidence for use of the local alluvial landscape strongly suggests that variable land quality and access to equitable land holdings were paramount concerns for Çatalhöyük cultivators, demanding supra-household coordination and likely shaping its segmented social morphology. Coordinated farming is also suggested by new evidence of crop growing conditions at the very different site and setting of M-LPPNB 'Ain Ghazal in southern Jordan. This discussion supports the argument that regional trajectories within the western Asian agricultural transition variously chart the *gradual* emergence of a truly domestic mode of production.

Keywords: Cooperation, domestic mode of production, Pre-Pottery Neolithic, Pottery Neolithic, archaeobotany, Near East

Introduction

A paradox of farming is that, though it can lead to lasting social inequalities through monopolization of labour and especially land (Borgerhoff Mulder *et al.* 2009; Gurven *et al.* 2010), its resilience depends on cooperative effort. Cooperative action can range from pooling of knowledge on variation in land quality across a landscape and the suitability of different crop varieties, to sharing of labour (human or animal), equipment and produce, to joint management of land (Halstead 1990; Netting 1990; Forbes 2000a; Williamson 2012). Variation in crop yields from one year to the next threatens not only producers but also the survival of crop landraces that have developed to suit local conditions; the long-term viability of farming systems thus depends on the existence of a broad network of farmers and communities. Networks can be configured in different ways with complementary benefits, from dispersed communities in different ecological settings to local neighbouring groups (*cf.* Halstead 1989a, 1990; Forbes 2000b).

　　Archaeologists often assume the full operation of the self-interested, competitive household from the emergence of modular residential units with agriculture, but institutionalised social differentiation was slow to develop (Flannery 1972, 2002; Bogucki 1999: 205-259). Here I argue that understanding early farming communities and the sociality of agricultural practice requires a better grasp of the ways

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in which households cooperated in agricultural production. Such mechanisms have been alluded to in previous work on Neolithic communities and corporate identities (*e.g.* Kuijt 2000: 159; Düring 2007: 176) but not explored directly in terms of agricultural practice. The aim of this paper is to frame specific predictions regarding archaeological evidence for different forms of cooperation in agricultural communities using historic and ethnographic information, and briefly to assess Neolithic case studies in western Asia – principally Çatalhöyük, where direct archaeobotanical evidence for the production and handling of agricultural produce is available alongside architectural data on use of space (for storage *etc.*) and on variation among buildings within and between phases. Early farming communities likely have no precise recent analogues (Finlayson 2010), but differing forms and degrees of cooperation in farming documented ethnohistorically offer a basis for assessing – and excluding – potential analogies between recent scenarios and archaeological cases.

Background: the Emergence of the Household in Western Asia

The establishment of mixed farming through the PPNB (*c.* 8500-6500 cal BC) in western Asia is associated with an "atomisation" of society into modular residential units (here, "households" or "houses") in multiple regions (*e.g.* Jordan valley, middle Euphrates, central Anatolia) (*e.g.* Wright 2000; Kuijt *et al.* 2011; Özbaşaran 2011, 2012). In contrast to the PPNA, when many buildings in both the northern and southern Levant appear to have specialized functions, including "communal" storage, and standardized, self-contained dwellings are often elusive (*e.g.* Finlayson *et al.* 2011; Stordeur 2013), PPNB settlements have yielded evidence for locally standardised domestic units, frequently containing built storage facilities (*e.g.* Wright 2000; Kuijt 2015). For Flannery (1972), household storage directly implied "that the household was the basic unit of production" (1972: 39) and that households possessed "their own landholdings" (1972: 47). He reasoned that households storing their own produce had a greater incentive to increase their production than loosely defined workgroups storing communally.

Fig. 1   Plan of Çatalhöyük showing major excavation areas. (Çatahöyük Research Project)

Thus private storage paved the way for increased household production (Flannery 1972: 48-9), but the question of how strong that incentive would be was left open. Halstead (1989b) drew attention to the practical necessity of a "normal surplus", particularly in highly seasonal environments, to cope with bad years. The implication is that households shouldering the risks of farming would aim to produce a marginal surplus, which ethnographic estimates suggest would be at least six months' to one year's worth of supplies (Forbes 1982: 356-375, Fig. 47; Halstead 1989b, 1990).

Long-term trends in the size, form and configuration of residential units through the Neolithic in western Asia suggest that the emergence of a largely domestic mode of production was gradual and ultimately patchy. Wright (2000) traced a protracted sequence of increasingly "private" dining and storage within the co-residential household through the PPNB in the southern Levant. Kuijt (2015) has recently considered potential storage volumes through this sequence and identifies a significant increase in storage capacities by the LPPNB; he argues that high internal storage capacities in the LPPNB could accommodate hoarding in excess of "normal surplus" but also notes a lack of associated status differentiation. Sequestered storage can be traced through the late PPN-PN occupation at Çatalhöyük in central Anatolia, where it was balanced by main room displays of animal parts (especially wild cattle heads and/ or horns) that plausibly celebrate supra-household meat sharing and cooperation (Bogaard *et al.* 2009). There is wide variation in potential storage capacities among Çatalhöyük houses but all fall within the range of floor areas allocated to food storage by recent farming households in the region, who also possess additional surplus/cash crop and fodder storage space (Bogaard *et al.* 2009: Figs. 9-10). While the modularity and configuration of Çatalhöyük houses, including internal ovens and hearths, suggests that in some sense they were "economically independent entities" (Düring 2007: 165; see also Hodder and Cessford 2004: 22), privacy of *storage* and *consumption* does not automatically entail independent household *production*. Wright's (2014) recent paper on groundstone tool assemblages from Çatalhöyük calls the assumption of [co-residential] household self-sufficiency into question; this author draws attention to the association of large querns with elaborately decorated houses, and suggests that these dwellings acted as focal points for "cooperative, multi-household activities" (Wright 2014: 28).

In a follow up to his 1972 paper, Flannery (2002) suggested that the eventual appearance of extended family compounds in western Asia and Mesoamerica represented the development of larger, more economically robust and independent households. Long-term trends towards larger, more isolated residential households can be traced to varying degrees and on varying timescales in multiple regions of western Asia (*e.g.* Bernbeck 1995; Flannery 2002; Düring and Marciniak 2006; Kuijt *et al.* 2011; Kuijt 2015) but are clearly not universal (Banning 1996) or irreversible (Rollefson 2004, 2015). A gradual emergence of larger, more isolated houses occurs over 3-4 millennia in Greece (Halstead 2006), and Flannery (2002) provides a range of other examples. Importantly, it is amongst larger, more isolated households that overt inter-household competition and lasting social inequalities generally become apparent archaeologically (Halstead 1989b; Bernbeck 1995; Wengrow 1998; Bogucki 1999: 205-259; Flannery 2002).

The staggered appearance of large residential household units practising a diverse range of agricultural and specialized craft activities, combined with associated indications of unequal status, suggests that the smaller co-residential units of early (and many later) farming communities were less independent and competitive. Storage at the level of the co-residential unit directly implies that households assumed the considerable responsibility for risks to crops in store, but the question remains as to how far they cooperated in other aspects of production (*cf.* Bogaard *et al.* 2009: 665). Supra-household cooperation in agricultural activities may have been fundamental to corporate entities implied by clustered neighbourhoods, special buildings and feasting (*cf.* Rollefson 2004, 2015; Düring 2007; Bogaard *et al.* 2009; Wright 2014).

In what follows recent archaeobotanical data from Çatalhöyük, central Anatolia is foregrounded as the most detailed set of direct evidence currently available for crop production and handling in an early farming community featuring small-scale, modular residential units without overt stratification, in order to assess potential forms of cooperative work beyond the household. "Private" household stores of cereals, pulses and other plant foods preserved in burned houses at Çatalhöyük represent the end-point of a production sequence that extended back through processing and harvesting to field monitoring, preparation and sowing, land management and initial clearance (*cf.* Russell and Bogaard 2010). It will be argued that the emergence of household storage (that is, within co-residential units) in Neolithic western Asia was deeply intertwined with supra-household cooperation in production, and that the challenges of technologically simple agriculture in large, nucleated settlements such as Çatalhöyük could only be accommodated through such traditions (*cf.* Bogaard and Isaakidou 2010). Çatalhöyük and other so-called "proto-urban" nucleated early farming settlements arguably represent a

distinctive social imperative of ensuring the continuity of a wider community, and its corporate groups, *at the expense of* the individual co-residential households within which crops and other consumables were ultimately stored. Thus, the extreme "privacy" of crop/consumable storage may reflect something more complex than competitive hoarding by self-interested households.

Farming Collectives, Communes and Households; Forms of "Pooling"

In *The Harvest of Sorrow*, Robert Conquest begins his account of the catastrophe of forced Soviet collectivization by setting out the contradictions in Marxist and Bolshevik policy toward the Russian peasantry, citing Lenin's insistence that "day by day, hour by hour, small-scale production is engendering capitalism" (Conquest 1986: 22). While Marx had envisioned cooperative production based on the traditional "commune" – an open field system with periodic redistribution of plots, and household inheritance of infield allotments – Lenin and later Stalin aimed to abolish ownership of land and its produce by farmers (Conquest 1986: 19-24, 186-187). This policy was a means of eliminating the political threat posed by Russian peasantry, not a coherent agricultural programme. Productivity spiraled downwards, despite the introduction of tractors on collective farms. Chayanov (1966) maintained that family farming was "neither capitalist nor necessarily inefficient" (Shanin 2009: 95); his murder by Stalin's regime suppressed his alternative programme, for "vertical cooperation" in farming featuring differing scales of production suited to different products and notably incorporating family farms (Shanin 2009). Translation of Chayanov's work in the 1960s famously informed Sahlins' substantivist account of the domestic mode of production (DMP) as underproductive, implying that motives for increasing production would be external to the household (Sahlins 1972; but see Durrenberger 1980; Halstead 1989b).

	Collective	Communal	Family
Product	x		
Land	x	(x)	
Resources	x	x	(x)
Labour	x	x	(x)

Table 1 Forms of agricultural cooperation (pooling), where ‚x' indicates supra-household pooling.

Collectives represent an extreme form of cooperative farming in which produce, land, resources and labour are variously held in common. Table 1 summarises this and other forms of "pooling", and distinguishes three broad categories: collectives, communal farming systems and family farms (the term "cooperative" is too general to be useful here since it can encompass all forms of cooperation). In *any* of these systems families may occupy their own homes and maintain their own stores (*e.g.*, Silverman 1968; Farouk-Sluglett and Sluglett 1983; Wåhlin 1988; Gavron 2000; Kark and Grossman 2003; Williamson 2012; Hall 2014; Halstead 2014). Problems faced by voluntary collective movements include tensions over private ownership but also illuminate other motives for maintaining modular residential units. A persistent grievance that emerged in the Israeli kibbutz system was collective childcare in children's houses; children and parents alike often preferred family accommodation, even where they accepted other restrictions on private ownership (Gavron 2000: 162-172).

A shared feature of communal and family systems is that farmers retain at least some control of the products of their own labour investments. Examples of communal systems include medieval and later open field systems in Britain (Williamson 2012; Hall 2014), Russian "communes" of the 19th century (Conquest 1986: 13-24), the *musha'* of the Levant, Iran and north Africa (Farouk-Sluglett and Sluglett 1983; Wåhlin 1988; Kark and Grossman 2003) and similar tribal systems in other regions such as southern Iraq (*e.g.* Fernea 1970). The extent to which communal systems involve private household land ownership is variable. In the classic extensive open-field regions of central England it was the regulation of farming arrangements that was communal rather than the possession of land (Hall 2014), while the *musha'* involved communal land ownership but each farmer was the sole holder of the fields assigned to him by lot (Kark and Grossman 2003). The Russian "communes" varied (*e.g.,* private tenure and inheritance of communally managed land in the Ukraine) but even where land was communally owned there were often "private" infield gardens (Conquest 1986: 13-24).

Though some communal farming systems are linked with stratified societies, it is questionable whether social inequality is a *prerequisite* for their existence. Limited land ownership by Russian peasant-

serfs persisted until the Czar's reforms of the mid-19th century, but the village "commune" remained a crucial local institution despite increasing private land ownership by peasant families (Conquest 1986: 15-16). Some historians have considered the origins of open-field systems in England to be dependent on the inequalities of the emerging manorial economy (*e.g.* Hall 2014), but Williamson (2012) argues persuasively that dispersed land holdings and communal regulation of crops and rotation make eco-logical sense as systems for coping with variable land quality, and likely emerged in response to local soils and topography. Of the various hypotheses proposed to explain the origins of the *musha'* system most similarly relate to buffering of agricultural risks (Kark and Grossman 2003). In the case of tribal agricultural systems in southern Iraq, the crucial role of the sheikh – who mobilized labour periodically to clear local irrigation canals – was achievement-based rather than hereditary (Fernea 1970: 105-136).

A key feature of communal systems, from the Middle East to Britain, is *nucleated* settlement. While the causes of nucleation are variable, their ecological effect is the same: nucleation imposes fric-tions/challenges of distance between the farming family and the plots it works, but opens up opportuni-ties for the management, protection and/or monitoring of arable areas in larger "blocks". Famously, the English open-field system enabled large-scale pasturing of herds on arable during the fallow phase of the two- or three-field rotation system, a crucial feature where grazing was limited (Thirsk 1966). But limited grazing does not explain the emergence of nucleated settlement, which instead appears to reflect localized access to reliable water supply and other topographical and soil factors, alongside the perceived benefits of close neighbours (Williamson 2012: 194-195). Williamson notes a particular association between close communal regulation and problematic environments (*e.g.* poorly draining soils) that could encourage "an obsessive interest in equality and fairness" in land holdings (Williamson 2012: 199). Whatever the spe-cific causes in a given case, nucleation placed constraints on land use arrangements, particularly if there was an emphasis on maintaining equitable holdings among families. Williamson's discussion illustrates some of the options:

"Whether new farms were being created through the division of holdings between members of a family or through the allocation of land to dependent tenants … they could hardly have taken the form of ring-fence properties lying at a distance from the existing settlement focus, as these would have been remote from the farmstead itself and thus inconvenient to manure, cultivate and (in particular) reach at harvest time. The obvious solution would have been to allocate land in the form of scattered blocks of convenient size and land quality – for in many circumstances the land lying closer to the settlement was more fertile, not least because it had received more manure over the years, from byres, yards and middens, than that lying at a distance (hence the old proverb, 'the nearer the church, the richer the land'). Subsequent subdivision of holdings would have increased intermixture; so too would assarting, the taking in of land on the margins of the cultivated area… as those who had formerly exploited areas of common grazing, and who had assisted in its conversion to arable, received their due shares. The clus-tering of farms… would thus naturally have led to the extensive intermixture of properties and thus the eventual emergence of forms of communal agriculture… The additional holdings created as population increased might in theory have been laid out in the form of discrete strips or wedges of land extending out from the settlement, to the edges of the cultivated area, rather than as intermingled strips. Such an arrangement would likewise have served to equalize the value of shares without producing the kinds of practical agrarian problems with intermixed holdings might generate." (Williamson 2012: 193-194)

Sharing of equipment and labour occurs in all of the systems outlined in Table 1 but differs in degree and regularity. Communal systems associated with nucleated settlement offer the advantages of *immediate* access to shared resources, which is important where particular agricultural tasks (soil preparation, harvest) must take place in a narrow time window for climatic and/or pedological reasons (Williamson 2012: 197). Communal herding of flocks around nucleated settlements offers advantages including coordinated folding of animals on arable (Williamson 2012: 204-205) and (if of sufficient scale) local maintenance of viable livestock populations (*cf.* Halstead 1992).

Among dispersed family farming systems, extreme cases of "amoral familism", with minimal to no cooperation beyond the immediate family as in the southern Italian pattern described by Silverman (1968), involve high levels of land rental and dependence on urban markets. Agricultural reforms here have featured the establishment of cooperatives to encourage beneficial arrangements for sharing equip-ment and marketing channels. Where associations between families and the land they work are more stable, as amongst extended families working in the *mezzadria* (share-cropping) system in central Italy, neighbourhood interactions are informal but significant and include reciprocal work exchange arrange-ments among nearby farms at crucial points in the agricultural calendar (Silverman 1968). Share-crop-ping families also cultivate "kitchen gardens" and are not required to share the produce (Silverman 1968). Halstead (1989b, 1990, 2014) has analyzed a series of examples in southern Europe that illustrate the

nature and extent of informal cooperative arrangements among households who generally maintained an ideal of self-sufficiency. Forbes (2000b) notes the association of dispersed land holdings in southern Greece with nucleated settlement, and points out that land fragmentation can effectively reduce potential inequalities among households and act as a risk buffering strategy. Such nucleated family farming systems thus effectively converge with nucleated communal ones, sharing the key feature of dispersed land holdings.

Archaeological Expectations

Table 2 sets out the settlement, storage, crop handling and land use arrangements that would be expected under differing forms of agricultural cooperation. While this summary is highly simplified and can only describe tendencies based on historical and ethnographic examples such as those summarized above, it has relevant implications. First, significant nucleation of households into large communities, especially those practicing simple agricultural technologies, in itself points to a considerable degree of supra-household coordination. Bogaard and Isaakidou (2010: Table 18.2) have estimated the distance of travel to the furthest cultivation plots in settlements of differing scale, and note that even conservative person/ha estimates of population (*e.g.* 100 people/ha) for sites of *c.* 10+ ha would likely entail travel of well over 500 m, leading to significant reduction in land management intensity and hence productivity of outer fields (*cf.* Jones *et al.* 1999). Nucleation thus sets up a situation in which land use rights or "ownership" must be coordinated at a supra-household level, to ensure equitable access to both proximate and distant land. A prehistoric example in which such social mechanisms were evidently absent is Early Neolithic Vaihingen, south-west Germany, where a particular group of households monopolized the most proximate, infield plots, leading to the departure of disadvantaged households and a significant reduction in community size (Bogaard *et al.* 2011).

Secondly, "private" household residence and storage can occur in any kind of system; the mere fact of household storage does not exclude close communal cooperation, or even collective production. Equally, some form of communal storage additional to the household can occur in any of these systems. Thus household storage *per se* is a weak index of the organization of *production*, though spatial arrangements within the house, elaboration *etc.* plausibly reflect attitudes to stored food/consumables (Wright 2000; Bogaard *et al.* 2009; Kuijt 2015). For example, extreme privacy in storage of plant food in the household could reflect a degree of "amoral familism" based on a fully established DMP, or alternatively unwillingness to share the products of a household's labour in a communally coordinated system where fairness was established through equitable land holdings among households or neighbourhoods. Additional data relating to processing/handling of stored produce and food preparation would constrain possible interpretations: for example, piecemeal processing of crops stored in a semi-/unprocessed state would be consistent with an independent household's desire to retain direct control of the harvest, whereas cooperation in processing could allow for negotiations in dividing up a communally/collectively produced crop. Third, supra-household cooperation in production (collective or communal) might be more directly reflected by community-wide decisions in crop choice – though the decisions of independent households would be constrained by available seed corn. Finally, there is an expectation that independent households with simple agricultural technology would manage land intensively, within the constraints of available labour, and especially where households were dispersed enough to allow immediate access to cultivation plots. At the other extreme nucleated communities practising truly collective production without any "private" land ownership or temporary holdings would be expected to invest relatively low inputs of labour per unit area, since farmers do not benefit directly from their own labour investments. The land management practices of communal producers are even more difficult to predict since these arrangements can incorporate long- or short-term household "ownership" [exclusive use rights] of specific plots, but either way nucleated settlement would impose limitations of distance on management intensity, and an appreciable gradient of infield/high-intensity management to outfield/lower intensity conditions seems likely, particularly with [predominantly] manual agricultural technology.

Çatalhöyük: Disentangling Household Independence and Cooperation in Farming

The major case study to be considered here is Çatalhöyük (Figs. 1-2) due to the abundance of archaeobotanical evidence for crop production and handling (Fairbairn *et al.* 2005; Bogaard *et al.* 2013; Filipović 2014). Recent work on the landscape, combined with botanical analysis of dung fuel and isotopic analy-
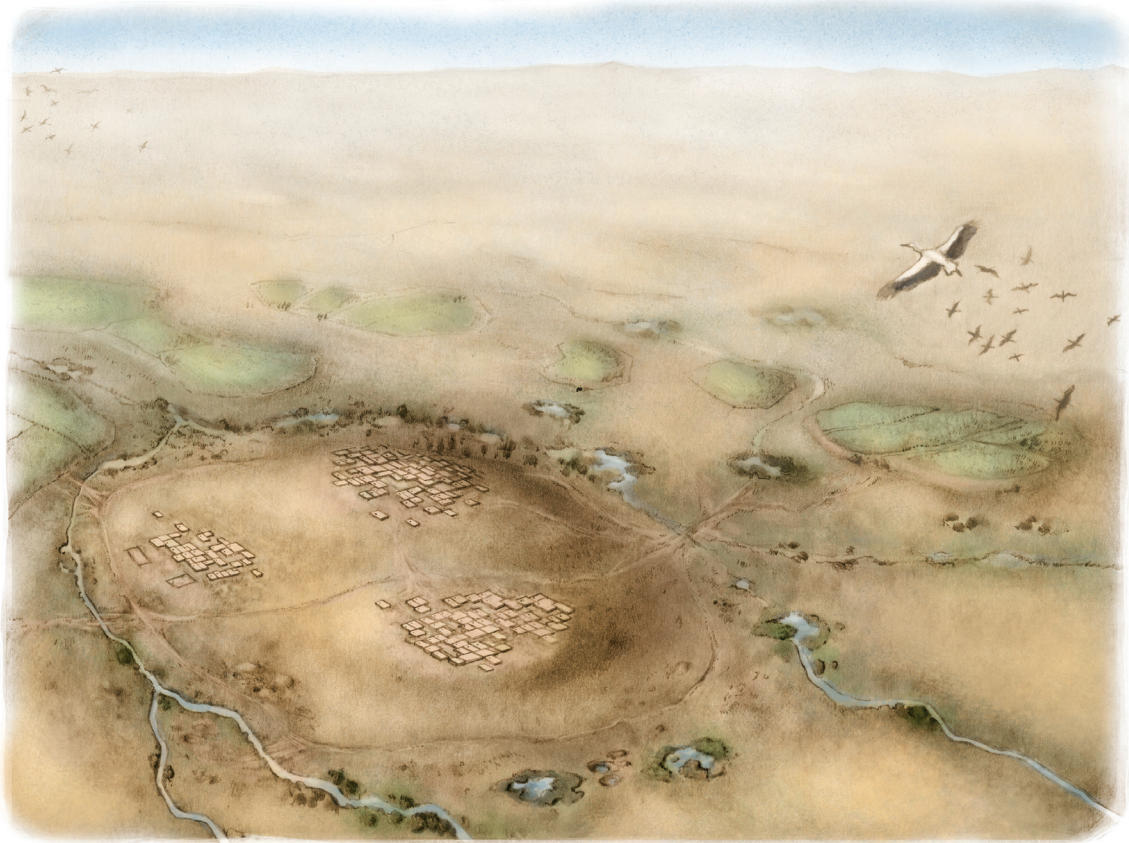
Fig. 2   Reconstruction of Çatalhöyük and its immediate landscape (looking south-west) in the mid-Neolithic sequence, based on recent geoarchaeological and archaeobotanical analysis. (after Charles *et al.* 2014: Fig. 6.8)

sis of faunal and botanical material, suggests that herding and probably also cultivation were centred on the local alluvial landscape (Bogaard *et al.* 2013, 2014a). It is clear that the surrounding landscape offered variable potential for arable farming; even the lower energy style of the Neolithic Çarşamba river suggested by the most recent geoarchaeological work (Charles *et al.* 2014; Ayala *et al.* 2017) would constrain the distribution of areas with the proper balance of water availability and drainage to accommodate winter crop growth to maturity. The evidence currently available suggests that higher, drier areas were available near the site but were interspersed with seasonal pools/channels and wetter areas (Fig. 2). Soil quality likely varied both in water retention capacity and in proximity to settlement; a major concentration of people and animals in and around the settlement would inevitably enrich soil nutrients in the landscape immediately surrounding the site, and this effect would fall off with distance. It appears plausible that the complex ecological "mosaic" of the local landscape fostered concerns amongst farming units over rights to cultivate relatively high-quality soils, and over equitable access to arable land (*cf.* Bogaard and Isaakidou 2010; Williamson 2012: 199).

Çatalhöyük is one of the largest Neolithic sites in western Asia (*c.* 13.6 ha), and during its main phase of occupation was the only settlement in the southern Konya plain (Baird 2005). While its nucleated morphology is clear, its maximum population size in the mid-Neolithic sequence has been estimated to be 8000 or more (Cessford 2005) but using conservative (*c.* 100 people/ha) estimates could be closer to *c.* 1000. Even at the lower end of this spectrum of estimates, the scale of aggregation will have placed significant constraints on land management intensity (Bogaard and Isaakidou 2010: Table 18.2). For this reason, some form of supra-household control over land holdings is plausible (*cf.* Bogaard and Isaakidou 2010: 197). As discussed by Williamson (2012: 193-194; see above), options for ensuring that faming units (whether residential households or clusters of houses) had access to equitable holdings – in terms of both distance from home and soil quality – could range from intermixed holdings to radial "wedges" (*cf.* Bogaard *et al.* 2011). In fact, radial alignments of walls in the South area at Çatalhöyük (Hodder 2014: Fig. 10.1) echo earlier, more explicitly radial clusters of housing in Level II at Aşıklı

Höyük (Esin and Harmankaya 1992: 4-5). Such radial clusters, and/or the terraces in the South area at Çatalhöyük that cross-cut them (Hodder 2014: Fig. 10.1), conceivably represent land-holding units and even boundaries that extended into the wider landscape. Current geoarchaeological understanding of the immediate surrounding of the site (Charles *et al.* 2014: 84) suggests higher ridges of land to the north and south, as well as a higher area to the west (the eventual location of the West Mound) (Fig. 2). A radial arrangement of land holdings would entail division of such areas among house clusters.

Residential units at Çatalhöyük show an intermittent tendency to become larger and more spatially isolated through time (Hodder 2013: Fig. 1.3, 2014), and in the final centuries of the East Mound occupation (not considered here because much of the detail is unpublished) change radically in layout and character (Marciniak *et al.* 2015). Nevertheless, there was demonstrable variation in size within the same mid-Neolithic level: Buildings 48 and 49 (around 12 m^2 each) and Building 59 (*c.* 62 m^2), for example, differ in floor area by a factor of five but occurred in neighbouring building clusters in the North Area, Level G (currently aligned with South Levels L-O = Mellaart VII - VIa, Hodder 2013: Table 1.3) (Green *et al.* 2014). Consideration of all completely excavated buildings documented up to 2008, from all but the latest (TP) phases of the occupation, shows that side rooms tend to account for c. 20-30% of total floor area (Green *et al.* 2014). Side rooms usually contain built storage features (bins), often in clusters in corners, whereas basins associated with food preparation tend to occur in main rooms, positioned so that they were accessible from front and/or sides (Green *et al.* 2014). The tendency toward a typical proportion of around one quarter of the total floor area suggests that side room space was allocated in accordance with building size. Side room capacities, even in the smallest buildings, could accommodate enough staple plant food (cereals, pulses and similarly calorific/storable resources such as nuts) to feed a small-scale family for 1.5-2 years; in other words, they could accommodate a "normal surplus" (Bogaard *et al.* 2009; Green *et al.* 2014).

Three particularly large buildings (5, 52, 59) of the mid-Neolithic in the North area have larger proportions of side room space (*c.* 40-50%) than usual, but the "extra" side rooms they possess are equipped for food preparation/cooking (basins and sometimes additional fire installations) rather than for additional storage (Green *et al.* 2014). The implication is that these particularly large houses with "extra" side room space were designed to accommodate relatively "private" food preparation spaces, not to hoard excess surplus. Thus, while the general trend towards larger, more isolated residential units [with yards] may suggest a tendency *towards* more independent economic activity, the largest buildings excavated thus far, all belonging to the mid-Neolithic sequence in the North Area, retain the normal proportion of storage space or are designed for private food preparation/cooking off the main room rather than for additional storage. The implication is that production for much of the sequence involved supra-household cooperative arrangements that prevented or disrupted a "spiral" of accumulating surplus/debt (*cf.* Bogucki 1999: 205-259).

In the mid-later Neolithic levels where residential households claim their own "private" external yard spaces, large ovens roughly twice the size of the usual indoor ovens begin to appear (Bogaard *et al.* 2014b and literature cited therein). Large-scale baking or roasting at the supra-household level is implied, perhaps in part as a means of making efficient use of fuel, and arguably involving use of the distinctive stamp seals of the later Neolithic levels as bread stamps (Bogaard *et al.* 2014b). Larger ovens could also be associated with large-scale preparation of special foods, though the archaeobotanical evidence associated with their use suggests a similar range of plants to that typically consumed in houses (Bogaard *et al.* 2013, 2014b). The picture that emerges for these later levels is one in which relations among residential households incorporated cooperative use of outdoor ovens.

There are some clear differences among recently excavated burned buildings, concentrated in the mid-Neolithic levels, in the range of crops and gathered plants in store (Bogaard *et al.* 2013). While these differences may reflect household-level crop preferences and thus economic independence, comparison of crops and other food plants represented in "use deposits" (oven rake out, dirty floors *etc.*) linked to [burned and unburned] houses by charring *in situ* shows that a consistent range of cereals, pulses and gathered plants is represented in most well sampled buildings (Bogaard *et al.* 2013). Thus, while individual burned houses contain concentrations of somewhat different cereal, pulse and/or gathered plant taxa, most/all residential households consumed a similar range of plant foods during their use-life. These observations underscore storage arrangements and suggest that co-residential households were units of consumption (see also below) as well as storage. The fact that "complementary" sets of stored plants occur as concentrations in nearby burned buildings in North Area, Level G (*e.g.,* barley and free-threshing wheat in Building 52, "new type" glume wheat in Building 77 – Bogaard *et al.* 2013) is consistent with supra-household pooling of crops but could also be interpreted in other ways (*e.g.* non-representative ranges of crops preserved in burned buildings).

Evidence of crop processing within and among residential houses can shed additional light on the "privacy"/redundancy of food preparation activities. Recent analysis of archaeobotanical residues from indoor versus outdoor spaces suggests that plant food handling was concentrated inside houses; this observation is particularly well documented for the mid- to late Neolithic sequence but appears to reflect the situation in the earlier sequence as well (Bogaard *et al.* 2013, 2014b; Filipović 2014: 104). There are also instances of external food preparation activities in "fire spots" but these occur near house walls and crawl-holes in what may have been private "yards" (Bogaard *et al.* 2013, 2014b). The most consistent archaeobotanical signature of outdoor activities is dung-burning, sometimes accompanying craft activities such as bead-making and wood-working (Bogaard *et al.* 2013, 2014b; *cf.* Filipović 2014: 104). Dung was plausibly burned outdoors to disperse insects as well as for heat and light.

The "privacy" of food storage and handling and lack of evidence for communal storage or processing spaces is consistent with family or communal forms of pooling, but makes collective farming unlikely (Table 2). The predominant component of food processing residues consists of hulled wheat glume bases resulting from dehusking of hulled wheats stored in semi-processed form as spikelets (Bogaard *et al.* 2013). There is direct evidence for the storage of hulled wheats in this way, and for piecemeal dehusking predominantly within houses of material taken from such stores (Bogaard *et al.* 2013). Pulse crops also occur on-site in semi-processed form: mid-sequence Building 1 in the North area contained a lentil store, unusually located in the main room of the building, with many fragments of legume pod and stock (Filipović 2014: 48). Additional evidence for the storage of pulses in semi-processed form comes from a fire spot in the yard of later Neolithic Building 65 in the South area (Level Q), which contained peas, pea pod and stock fragments and large-seeded weeds mimicking peas in size (Bogaard *et al.* 2013).

These instances are illuminating because the climatically imposed tendency in arid regions like the Konya plain would be to process crops in bulk outdoors following the harvest, and to store them in clean form (Hillman 1984). It could thus be argued that storage of certain crops in semi-processed form was a reflection of household-level labour constraints and hence household independence in processing, though in the case of hulled wheat spikelet storage the practice could also be linked with a concern to prevent against infestation in store. In contrast to the hulled wheats, the free-threshing cereals (barley and free-threshing wheat) were stored in a fully cleaned state, with little chaff and very few weed seeds, in at least the mid-late Neolithic sequence (Bogaard *et al.* 2013; Ergun *et al.* in Özbaşaran and Duru 2013). This practice is also reflected in a much greater abundance of hulled wheat glume bases compared to the rachis of free-threshing cereals in "use" deposits and midden accumulations throughout the earlier to later sequence (Bogaard *et al.* 2013; Filipović 2014: 50-52).

It appears likely that threshing, winnowing and sieving of cereals [largely] took place off-site; these processing steps resulted in "clean" free-threshing cereal grain and hulled wheat spikelets (Bogaard *et al.* 2013). Early stage processing of cereals off-site is also suggested by concentrations of silicified cereal awns in the KOPAL trench off the north end of the mound (Fairbairn *et al.* 2005), and by the occurrence of various cereal ear parts including awns in burnt mudbricks, perhaps because crop processing and brick manufacture took place in similar off-site locations (Bogaard *et al.* 2013). A lack of straw through the East mound sequence points to harvesting of ears high on the straw, which would reduce the bulk of harvest requiring transport back to the site (Bogaard *et al.* 2013; Filipović 2014: 136). Off-site processing leaves open the possibility that early processing stages (threshing, winnowing) were conducted cooperatively by supra-household groups, and such a scenario could have included negotiations surrounding the allocation of crop quantities to individual households. There are a few hints that early stage processing *may* have taken place more frequently within the settlement during the later Neolithic occupation, in yards adjacent to houses (Bogaard *et al.* 2013), but further work is needed to confirm such a trend.

As regards land management strategies (Table 2), work to refine and interpret the ecology of the arable weed flora and the stable isotope values of crops across the site, among residential units and

	Collective	*Communal*	*Family*
Settlement	Nucleated	Nucleated	Dispersed (ideal)
Storage	[House] and supra	House [and supra]	House [and supra]
Crop processing	Communal	Communal or household	Household
Cropping system	Communal	Communal or household	Household
Land management	Low-intensity	Variable	High-intensity

Table 2 Predicted characteristics of collective, communal and family farming systems.

through time is ongoing (see Bogaard *et al.* 2013; Charles *et al.* 2014), but pilot work on ecological interpretation of the arable weed flora suggests that growing conditions encompassed conditions more similar to those in intensively maintained gardens than in ard-ploughed fields (Filipović 2014: 136, 143-144). Crop carbon isotope data recently published by Wallace *et al.* (2015) suggest that naked barley was grown under drier conditions than wheats, and hence that the variable hydrology of the surrounding landscape was handled to some extent through cultivation of crop types adapted to different "niches". That such a pattern was apparent among samples deriving from a cross-section of buildings, areas and phases (Wallace *et al.* in 2015: Supplementary Information) also suggests general sharing of agricultural knowledge and practice with regard to the management of specific crops/varieties.

Overall, consideration of the criteria summarized in Table 2 at Çatalhöyük suggests a potential range of family- and/or communally-oriented practices (Table 3). Not only the nucleated form of the settlement, but also its segmented morphology and "challenging" landscape point to communal coordination of production to regulate access to land of varying quality and proximity among and within neighbourhoods, especially through the mid-Neolithic phases when the settlement reached its maximum extent. On the other hand, storage and late-stage processing of crops was clearly a matter for co-residential house units, though some form of communal cooperation in early stages of processing, and possibly in the allocation of stores to individual residential units, cannot be excluded. Intensity of land management was constrained by the degree of nucleation, and was likely highest immediately surrounding the site (giving rise to a "garden belt" – Bogaard and Isaakidou 2010), while growing of barley under drier conditions than wheats likely reflects a key adaptation to the local landscape. The fact that burned houses in the same neighbourhood and of the same level predominantly contain stores of barley (*e.g.* Building 52) *or* hulled wheat (Building 77) could reflect differential access to well watered land, but if so broader pooling of produce is needed to explain the similar range of plants/crops whose processing/consumption is indicated in oven rake outs and dirty floor deposits of all well sampled buildings. A tension between the communal and household-oriented aspects of crop production is implied by the extraordinary displays of animal parts in main rooms, as a counter-weight to the invisibility/privacy/non-elaboration of plant food stores, and in itself suggests social sanctions against excessive hoarding and wealth inequality (Bogaard *et al.* 2009; *cf.* Wright 2014).

	Collective	*Communal*	*Family*
Settlement	Nucleated	Nucleated	Dispersed (ideal)
Storage	[House] and supra	House [and supra]	House [and supra]
Crop processing	Communal	Communal or household	Household
Cropping system	Communal	Communal or household	Household

Table 3 Predicted characteristics of collective, communal and family farming systems with shading to indicate the situation at Çatalhöyük.

The Wider Context

At present the availability of archaeobotanical alongside architectural data needed to sustain comparable discussion of other Neolithic communities is very limited. A partial exception is PPNB-PN (mid-9th to mid-6th millennium cal BC) 'Ain Ghazal in the southern Levant, where architectural evidence suggests a shift from a <5 ha community comprised of "terrace" pier-house neighbourhoods in the MPPNB (Fig. 3) to a >10 ha LPPNB settlement of large two-storey houses with larger, more private storage capacity (Rollefson 2004, 2015; this volume). The implication is that MPPNB terrace/corporate groups of small-scale families, storing crops "privately" but in relatively accessible porch areas, cooperated regularly in crop production, whereas a more developed DMP emerged in the later PPN in larger/more extended households, with more "private" storage and dining (*cf.* Wright 2000). As indicated in the discussion of the Çatalhöyük evidence, architectural isolation and storage privacy do not exclude the continuation of strategic cooperation in aspects of production, *e.g.* within building clusters. While the archaeobotany of 'Ain Ghazal is not fully published (Neef 1997), precluding any detailed discussion of crop choices and handling at this stage, an additional strand of evidence is available through recent carbon isotope

Fig. 3   Reconstruction of terraced houses at MPPNB 'Ain Ghazal. (drawing by Jonathan Mabry; courtesy of the 'Ain Ghazal Archaeological Project)

analysis of barley and pulse remains from the site (Wallace *et al.* 2015). These samples derive from the MPPNB-LPPNB settlement and reveal a remarkable consistency in the moderately well watered status of barley, one of the major crops, suggesting control/management of water resources at a supra-household level. The setting and landscape of the site suggest that control of spring water may have been important (Rollefson 2004). The challenges of water availability in this arid setting (average annual rainfall today *c.* 250 mm; somewhat higher in the early Holocene but still marginal for rainfed farming – Neef 2004) would plausibly favour communal oversight of land use rights. Moreover, stable nitrogen isotope analysis of the barley grain samples from 'Ain Ghazal reveals uniformly modest nitrogen isotope ratios ($\delta^{15}N$), suggesting consistent land use practices and a lack of intensive manuring (Styring *et al.* 2016).

Conclusions

The argument advanced here is that the "atomization" of communities into modular co-residential units ("households") with the dual emergence of farming and herding does not signal the appearance of a fully fledged, competitive DMP. Moreover, the development of very large, nucleated communities through the PPNB is powerful testimony that the interests and productivity of the individual residential household were radically subordinated to communal security. While sequences of development can be traced at disparate sites like Çatalhöyük and 'Ain Ghazal from small, modular households organized in contiguous clusters to looser groupings of larger (more extended?) family residences, there remains a lack of evidence for lasting social inequalities such as would be expected to develop without strong communal controls on land holdings and even surpluses (*cf.* Kuijt 2000; Hodder 2014; Wright 2014).

   A sharp threshold is often implied between the "communal" buildings/extra-domestic storage arrangements of the PPNA (*e.g.* Kuijt and Finlayson 2009; Stordeur 2013) and the internal domestic storage of the PPNB, but emphasis on this shift obscures what is perhaps the more fundamental feature of early farming communities: cooperation and coordination among storing/residential units was crucial to

their establishment and long-term success. The archaeobotanical evidence from Çatalhöyük suggests that co-residential households handled their own crop stores, at least some (especially late stage) processing of crops and were the primary spatial context within which plant food was handled and prepared. All of these aspects suggest that co-residential groups not only assumed the risks of crop storage but also kept tight control on crop handling through to consumption. At the same time, the site's setting in a landscape with highly variable arable potential, combined with larg-scale, dense nucleation and segmented morphology, supports the case for coordination of land use rights and practices among co-residential households.

A closer understanding of how cooperation in farming contributed to the formation of corporate groups at varying scales is beyond the scope of this exploratory paper. It will require integration of archaeobotanical data for crop production and handling with spatial analysis of architecture and other aspects of material culture. Much more nuanced understanding of farming practice and its sociality is needed to understand how the large nucleated communities of the later PPN-PN functioned, and why they ultimately broke down.

Acknowledgements

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Symbols
and
Media

Changing Medialities.
Symbols of Neolithic Corporate Identities

Marion Benz[1]

Abstract: Sedentism not only challenged the economic system of hunter-gatherers, but above all the social and ideological framework of their lives. Larger groups, increasing social differentiation and the potential for accumulating material possessions may have led to a decrease in trust and an increase in alienation, fear and of aggression. Both processes can be counteracted by adjusting ideological and ethical concepts. One option of a society adapting to such stress is to strengthen corporate identities by an increased demonstration and standardization of symbolic praxis, including (communal) architecture as symbols in space, rituals as symbols in action, and systems of recurring signs, with an implied shared symbolic meaning.

The aim of this introductory contribution to the ideological and intangible ideas of corporate identities is to discuss if and how we can track shifts in ideological frameworks from the Epipaleolithic to the Early Neolithic in the Near East. It is suggested that an integrative approach combining anthropological, archaeological and neurobiological research with studies of mediality may be capable of reconstructing the social impact of symbolic systems. Instead of creating a uniform picture of a monolithic symbolic system, we focus on tensions and contradictions of symbolic actions and representations with daily praxis. The observed shift in mediality probably aimed at creating strong social networks with present and bygone generations to counteract fissional tendencies in ever lager communities. However, the increased display of corporate identities seems to be a transitional phenomenon. When living in permanent settlements had become customary, monumental and ubiquitous symbolic representations almost vanished.

Keywords: Symbols, rituals, Northern Mesopotamia, Early Holocene, corporate identities, emotions

Introduction

For many years, the importance of symbolic material culture has been emphasized as a constitutive means for the establishment and promotion of larger permanent societies and for religion (Berger and Luckman 2016 [1969]; Cohen 1985; Sütterlin 2000; Christensen 2010; Wightman 2015). The transformation to permanent living in circumscribed groups and territories and the beginning of farming, and enhanced exploitation of natural resources might prove to be the decisive period for the evolution of the symbolic display of group identities (*e.g.* Hodder 1990; Cauvin 1997; Watkins 2004; Stordeur 2010; Benz and Bauer 2013). The earliest Holocene cultures in the Near East saw an unprecedented increase in symbolic activities, materialised in huge communal buildings, elaborate primary and secondary burials often connected tightly to daily life, highly standardized art and an enhanced impersonal transmission of information and traditions (*e.g.* Köksal-Schmidt and Schmidt 2007; Stordeur 2015). In northern Mesopotamia symbolic systems were so ubiquitous and standardized that H.G.K. Gebel suggested emerging

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doctrinal structures and the commodification of "symbolic territories" ("ideocracy" *sensu* Gebel 2013: 41; see also Gebel 2010 and this volume). The increasing material manifestation of concepts intensified the sensibility and awareness of interpersonal and intergroup differences, demonstrating, enhancing and possibly creating boundaries where none had existed before.

Although it is during the Epipaleolithic that the exchange of rare and exotic raw materials emerged, their importance amplified considerably during the early Holocene (Cauvin 1998; Carter *et al.* 2013; Alarashi 2015), when settlements increased significantly in size and permanence.

This does not mean that symbols and symbolic activities, such as communal rituals in specific places or body decoration to signal identities, had not existed during the Palaeolithic (Ronen 2010; Jöris publ. communication 2015; see also Belfer-Cohen and Goring-Morris this volume). The change observable during the early Holocene was rather a change in quality and scale, but not just in the capacity for symbolic thought or its externalization (Henshilwood and d'Errico 2011: 50). The increase in figurative depictions in Northern Mesopotamia, above all the change in mediality (see below), and the possibility to transmit these symbols over generations and over wide spaces was probably experienced as an enormous change, perhaps similar to the changes of communication by digital media (Sauerländer 2012).

In the *longue durée* this change was not linear, *e.g.* monumental communal buildings in stone, which were so prominent during the early Pre-Pottery Neolithic diminished if not vanished completely during the Pottery Neolithic. Çatalhöyük with its rich imagery and sculptures still appears to be an exceptional site (Hodder 2006, 2012; Özbaşaran 2012). The increased display of symbols and symbolic activities might thus be considered a temporal shift from rather intangible incorporated symbolism to more intensively represented social identities.

In the first section of this contribution, some theoretical and methodological ideas will be presented which might help when approaching intangible corporate identities from the perspective of material remains. In the second section, examples of encoded and enacted ideas of early Neolithic communities according to the presented methodology will be discussed. The first part of the second section investigates encoded ideas in the sense of symbolic depictions, in the second part I will explore enacted ideas, concentrating above all on communal buildings. The separation of both categories of symbols is of course only an analytical device, since both aspects are strongly interdependent. Symbols which are not represented or communicated at all will lose their power in the same way as symbols which are not incorporated and re-enacted. As will be shown below, the symbolic meaning of an object can change according to its enactment or re-enactment on different occasions.

On the Myth of Monolithic Identities

Identity has become a key-word of archaeological research, often used in order to add a social concept to typological clustering of tangible and intangible things. For our understanding of identities, it is essential to review some anthropological aspects. From the beginning it must be emphasised that *imagination* and *environments* merge in the human self (Fig. 1). Although imagination can exist beyond factual experiences, and although environments do have a reality without humans, both spheres are closely interrelated and form personal and social identities of individuals and human groups (Merleau-Ponty 1964). In human bodies, perception and memorizing are considered subjective practices influenced by personal abilities and know-how, but also by social experiences and memories (Bauer 2015). Although the creation of personal and group identities are thus subjective constructions, they are also always social relational processes: "Every recollection, however personal it may be […], exists in relationship with a whole ensemble of notions which many others possess: with persons, places, dates, words, forms of language, that is to say with the whole material and moral life of the societies of which we are part or of which we have been part". Paraphrasing Maurice Halbwachs Connerton continues: "no collective memory can exist without reference to a socially specific spatial framework" (Connerton 1989: 36-37). Beside objects and places, which may function as symbols of collective memory, Trevor Watkins has underlined the importance of "shared acts of remembering that are imagistic and affecting" for the creation of community identity (Watkins 2012: 35; see also Sütterlin 2006). Moreover, humans tend to assimilate personal memories to communally transmitted and recalled memories thus creating overlapping experiences and communality (Haun *et al.* 2014).

In our approach, the individual is neither considered as an unwilling victim of its genes nor of society, but as an active subject establishing dialectical relations with its social and natural environments. Infants are forced to accept these environments as given. They accept entering "their world" as it is and they are thus considerably influenced in their cognitive and bodily capacities by these environments.
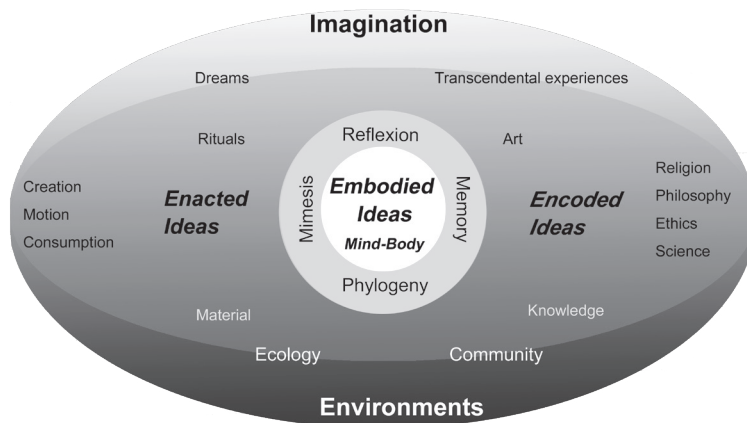
Fig. 1   Interdependence of incorporated, enacted, and encoded symbolic systems for the creation of personal identities. Almost all areas are linked by dialectical relationships influencing people in a more or less stronger manner. The incorporation of enacted and encoded ideas does not only depend on external influences, but also on personal dispositions of body and mind.

New-borns realize and form their self in a dialectical process of mirroring emotions and actions (Bauer 2015: 61-71). With increasing cognitive capacities they are enabled to reflect about these relationships and can either accept, doubt about or reject them (Tomasello 2000: 62-89). By this constant dialectical process of accepting, creating or shaping and being influenced by such relationships and borders – or to speak with Donald Norman (1998: 82, cited in Knappett 2005: 52) of affordances and constraints –, identities emerge. Identification is considered a continuous process of assimilation with certain ideas and groups, implying – *vice versa* – distancing oneself from other ideas. Identities, especially group identities, are therefore multi-layered, contextual and relational, but never coherent or static (Knappett 2005; *cf.* Berger and Luckmann 2016 [1969]: 36[2]). Corporate identities can be considered a "melting-pot" of different overlapping ideas, sharing common basics but with possibly very different individual and cultural expressions and different forms for incorporation ("internalisation") of these ideas. The "borders", which are represented in Fig. 1 between the individual and environments, therefore, should be considered as permeable and fuzzy.

The intensity of the impact of corporate identities on daily practices and ethics depends on the degree to which corporate identities are incorporated by group members. Social conditions, qualities of the symbols themselves, and individual characteristics and choices influence the level of incorporation. Pressure and fear, but also positive attraction, both, can enhance social commitment. If power is exerted, or stigma and fears of the unknown other are evoked, assimilation with the group's ideals will possibly be stronger. Power does not only enhance the fear of punishment in case of misbehaviour. It is a well-known effect that anxious people are more vulnerable to religious and political manipulation, since they fear stigmatisation and seek a "strong hand" for support. They abide more willingly to rules and are generally more loyal (Krohne 2010: 366). In contrast, positive attraction might lead to longer lasting and enhanced commitment.

Similar to group identities, individual identities are also never monolithic. Everybody incorporates different identities. These can either be contradicting or reinforce themselves in positive feedback loops. If economic, social or ideological relationships create largely overlapping synchronous networks, the chance that these ideas influence people's decisions and behaviours is stronger than in contradicting identities (Fig. 2) – we will come back to this point in the next paragraph. Consequently, daily practices might thus reflect ideas about social and ideological relationships, but they might also contradict communal ideas displayed in official symbolism. This holds true, above all, in times of fundamental transitions, when new ethics face long lasting habits and traditions that cannot – and possibly will not – be changed from one day to the next. These contradicting identities represent one of the most difficult challenges for the interpretation of prehistoric symbolism. Accepting and facing the multivocality of symbols requires new methods which can circumvent the lack of written or communicated meanings of symbols, *i.e.* of symbolic actions and objects.

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[2]   The theoretical background presented in this article is in many respects in line with the idea of symbols by Berger and Luckmann (2016 [1969]). However, it is in contrast to their concept of a coherent reality, legitimated and enhanced by a symbolic system. Although they discuss the existence of "antagonisms" or "contradicting subrealities" ("Sinnprovinzen") (Berger and Luckmann 2016 [1969]: 24, 90-91, 106-107), we consider collective identities never to be a coherent totality, but full of ambiguities, compromises and contradictions.
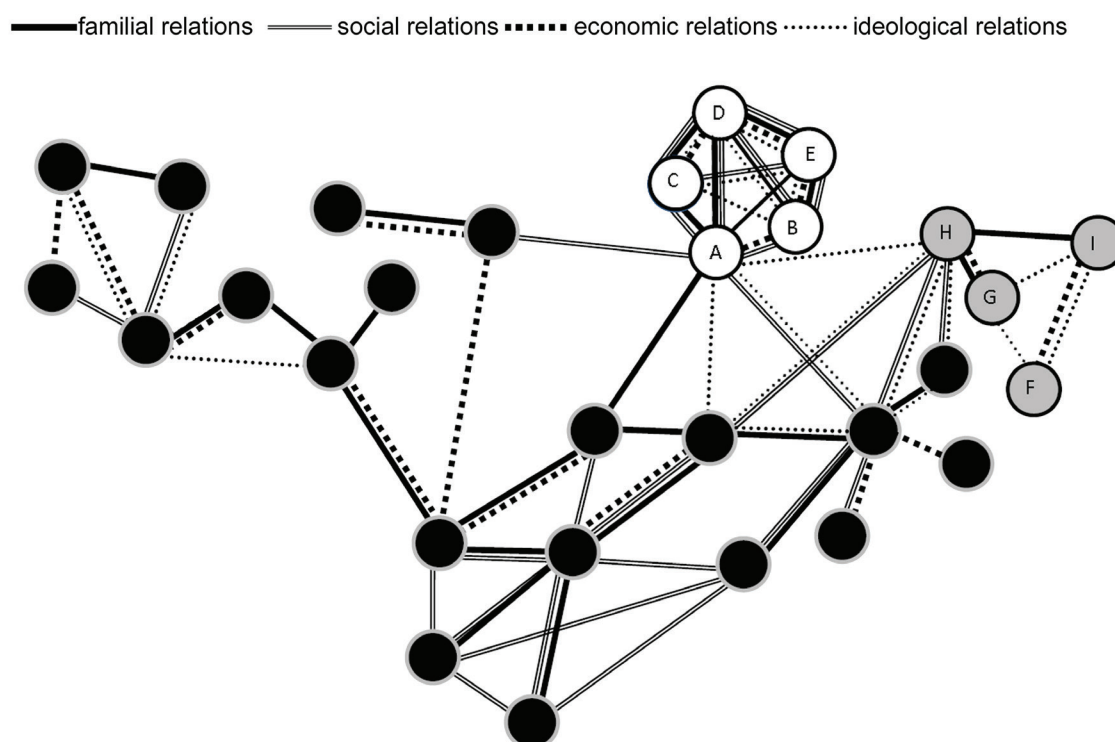
Fig. 2   Mutual reinforcing networks of different domains creating a strong corporate identity in case of the white-dot group (A-E), or contradicting networks as a possible source of tensions and conflicts within the grey-dot group (F-I). Group identities are never monolithic or coherent, but multi-layered.

The task of a holistic archaeology is therefore to develop integrative approaches comparing different layers of identities. In the theoretical – idealized – model, represented in Fig. 2, the white-dot group (every dot may represent an individual, household or subgroup) identities in several fields overlap strongly, enhancing ties between entities *A-E*. All entities seem to form a circumscribed group with only entity *A* holding relations to "outsiders". This means, ideological/religious, familial, social, and economic demands are fairly similar and do not require a constant switching between contradicting realities. Without neglecting duties of one network, it is possible to participate in other networks and fulfil various tasks. In contrast, in the example of the grey-dot group entity *H* has familial ties with *G* and economic and familial ties with *I*, but its social and ideological relations are with others, whereas *G, I* and *F* are closely related by ideological ties. In that case contradictions may occur and it becomes more difficult to create commitment and loyalty of group members. Such a comparison between various fields of social identities, daily practices and intangible ideas of being-in-the-world, might not only assist in gaining a deep understanding of the transition to sedentary farming communities, but might also help to elaborate on the importance of the imaginative for the constitution of Neolithic corporate identities.

The Incorporation of Ideas – an Anthropological Perspective

If we want to understand, how intangible concepts influenced human corporate identities, it is essential to understand biological human characteristics and how social and natural environments shape human developments. Environments influence humans via their body. Body, brain and mind form thus one entity and can only be separated analytically (Wulf 2005: 99-100). The neurobiological capacities of humans and the importance of emotions for the understanding of symbolism have been outlined elsewhere (Bauer and Benz 2013) so a short summary will suffice here. Symbolic communication, empathy, targeted cooperation, teaching and sharing, including sharing of knowledge ("cultural transmission"), seem to be the most successful characteristics and strategies which humans developed to perfection (Bauer 2008; Tomasello 2009; see also Watkins this volume). In what has become known as "social brain hypotheses", Robin Dunbar and others even argued that increasing social demands were the reason for the exponential increase in human brain size (Dunbar 1992, 2013). As mentioned above, due to

the immature brain at birth, infants depend on others for the development of their cognitive capacities. Interpersonal relationships and prefigured spaces in which infants act thus play a crucial role in wiring social brains (Gehlen 1978: 223; Wulf 2005: 98-100; Bauer 2015). Social encounters not only influence our minds, but the functioning of our genes depends considerably on external influences and social experiences (Bauer 2007; Skinner 2015). Social signals are thus transformed into biological processes in the human body. Moreover, experiences are stored – even if unconsciously – in the brain and body, being reactivated if similar situations are experienced (Bauer 2015). Especially during times when neuronal networks are forged most intensively, during earliest infancy and puberty, children are most vulnerable to manipulation of their ideas about society.

Basic emotions are stored in evolutionary, much older parts of the brain shared by all humans, even though reactions might be culturally controlled by top down processes of the brain. Fear/surprise, anger/disgust, happiness, and sadness can be classed as such basic emotions (Jack *et al.* 2014). Unambiguous gestures and depictions, such as screaming or laughing figures, will thus probably evoke respective emotions in most humans, despite highly interpersonal, subjective and culturally ascribed meanings of symbols and irrespective of individual exceptions (Bauer 2005; Rizzolatti and Sinigaglia 2008; Wightman 2015: 22). Therefore, people can be intentionally influenced in their bodily reactions by external stimuli – the so called *priming* (*e.g.* Kay *et al.* 2004; Elger 2012; *cf.* Doyen *et al.* 2012). The extraordinary strength of the impact of pictures on emotions is due to our evolutionary dispositions. More than half of the information transmission and perception is based on the visual system. "This very old system is linked to emotions in a much stronger way than verbal communication. That's why pictures affect us more immediately and more intensively than words" (Sütterlin 2017, translation MB). Since the *iconic-turn,* art theory has continuously emphasised this genuine capacity of pictures and advocated for methods, which go beyond applications borrowed from structuralism and semiotic analyses (Boehm 1994, 2010; Gell 1998).

Moreover, neurobiological studies of the last 30 years have shown that emotions influence our perception and behaviours much more than research since the Enlightenment has wanted us to believe (Salvatore and Venuelo 2010: 59-74; for a summary see Franks and Smith 1999 with further bibliography). Synchronisation of emotions, rhythms and motion enhance the impact on long-term memory considerably (Wightman 2015: 27-30).

The human capacity to reflect about oneself and others (so called *Theory of mind)* fosters the projection of ideas on objects, often conveying anthropomorphic characteristics, intentionality and agency to them. The decisive advantages of symbolic communication via objects transcending time, persons and space have been discussed by many authors (*e.g.* Berger and Luckmann 2016 [1969]; Donald 2001; Renfrew 2005). Whether material culture – in our special case symbols – can be interpreted as evidence for external storage devices or "a part of the extended phenotype of the individual agents that comprises it" (Dunbar *et al.* 2010: 12; see also Watkins 2012), is a matter of perspective. A profound discussion about this question lies beyond this paper's scope. For the moment, it suffices to recall that material objects and locations can become *symbols* of actual identities, but also of a past act or persons, *i.e.* the presence of the object recalls past experiences and all associated thinking and emotions during these situations. Many religious memories are based on such objects (Halbwachs 1967: 157).

Integrating this anthropological perspective, different processes for the emergence of a corporate identity can be envisioned: First of all, top-down processes can intentionally prescribe norms, ethics and symbols by the intentional creation of a coherent symbolic system. This function for symbols is implicit in many functionalistic explanations of symbols (*e.g.* Luckmann and Berger 2016 [1969]: 102-103; for a summary see Brosius *et al.* 2013). However, corporate identities can also emerge by bottom-up processes of contagion and imitation, the wish of the individual to synchronize style and behaviour with others in order to gain social acceptance (for an anthropological basis of these processes see Bauer 2011; Bauer and Benz 2013; Haun *et al.* 2014). In practice, both processes merge. Thousands of people copy – consciously or not – the style of their *idols*, hoping by outward resemblance, some of the skills and strength were transferred too. The production of objects and commodification enhance – or may even become responsible – for such processes of popularization. At first sight, this might seem rather anachronistic for Neolithic corporate identities, but as the examples show, which we will elaborate below, it should not be excluded categorically.

To conclude, conditioning sub-adult brains by cultural ideas, built spaces, objects, material values, or by enacted symbols in rituals are thus most effective means to incorporate ideas and forge people to group identities and social commitment (Halbwachs 1967; Connerton 1989; Assmann 1999; Wulf 2005). Influencing their mood by displaying certain emotionally laden symbols can strongly affect their social behaviour.

This outlined anthropological perspective is a precondition for our methodology and fundamental to the understanding of the following paragraphs about encoded and enacted ideas. The focus of our investigations is on the social and ritual meaning of symbolic objects, without daring to speculate about their content. Before presenting some archaeological examples of encoded and enacted symbols of the early Neolithic, a brief summary of the methodological aspects for the interpretation of symbols is given.

Methodological Aspects

The interpretation of symbols has long been focused on the content of representations. Given the inter-subjectivity of most symbolic meanings (Gillespie 2010) and the fact that the meaning of symbols is culturally ascribed[3], it is almost impossible to decipher the precise meaning, without knowing the emic view or without any texts.[4] The interpretation of prehistoric figurative signs is thus highly dependent on deep knowledge of cultural contexts, if it is not bound to fail completely.

Nevertheless, we surmise, that it is possible to understand the impact of symbols and the recurrent patterns of their use. Changing the perspective in this way means focusing on the common anthropological parameters outlined above on one hand, while concentrating on the specific qualities of the mediality of symbols, including their possible use on the other (Benz and Bauer 2013).

In media studies, the term mediality expresses more than the mere material qualities of the image medium. Mediality includes the choice of raw materials and their specific qualities, as well as ways of procurement and the possibility to interact with the medium, the so-called reflexivity – not only by the creator but above all by the spectators, participants of rituals or audience (Simon 2011). Moreover the ubiquity and standardization of symbols are decisive for their perception, incorporation and memorization. Irrespective of any precise meaning of symbols, the material, scale, ubiquity and standardization of symbols can be studied in material remains and give important clues to their possible impact on the community and indirectly to social and ideological ideas.

The aim of the following two sections will be to compare encoded and enacted ideas of corporate identities with daily practices of the early Neolithic; thereby breaking up the idea of unilineal developments and of a monolithic Neolithic identity, but to highlight tensions and contradictions at the transition to sedentary Neolithic communities.

Encoded Ideas

Encoded ideas can represent philosophical or ethical ideals, scientific explanations, or transcendental concepts of religion/spirituality (Fig. 1). Segregating the four different perspectives would probably be an anachronistic view for the Neolithic. If we apply the more restrictive definition of religion in the sense of Christensen (2007) and Bloch (2008), it is even questionable, whether the term *religion* should be adopted for early Holocene communities at all.

Although the dissemination of a corporate symbolic identity might aim at binding contemporary communities, their symbolic value always also implies diachronic aspects. If symbols should be understood by participating parties, their meaning should be more or less agreed upon by consent or traditions. The recurrent occurrence of symbolic devices and patterned combination of objects and contexts, make it possible to detect such formalized ideas which transcend personal identities and might represent encoded corporate identities.

Encoded ideas can be expressed in imagery, texts and in knowledge. In the case of the early Holocene in Upper Mesopotamia, hunter-gatherers increasingly depicted figurative scenes on various objects in stone and bone. Clothes and body art might have played a similar important role, but they are hardly preserved.

For the studying of encoded ideas the site of Körtik Tepe may serve as a starting point (Özkaya and Coşkun 2011). Körtik Tepe is one of the earliest permanent settlements in Southeastern Turkey (Benz *et al.* 2012, 2015). Its inhabitants were a hunter-fisher-gatherer community, who used a wide spectrum of wild

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[3] For an illustrative discussion on the problems of interpretation of symbols in archaeology see Gallay (1983: 183-200).

[4] In line with observations made by Harvey Whitehouse (2000), it may even be doubted that an "objective" meaning exists, internalized by all individuals, without written consent on an official dogma.

Fig. 3   Possible local adaptations of the Körtik Tepe belly shaped vessel type/decoration (Coșkun *et al.* 2010: Fig. 2): 1- Göbekli Tepe (Schmidt 2011: Fig. 4); 2- Tell 'Abr 3 (Yartah 2013: Fig. 173).
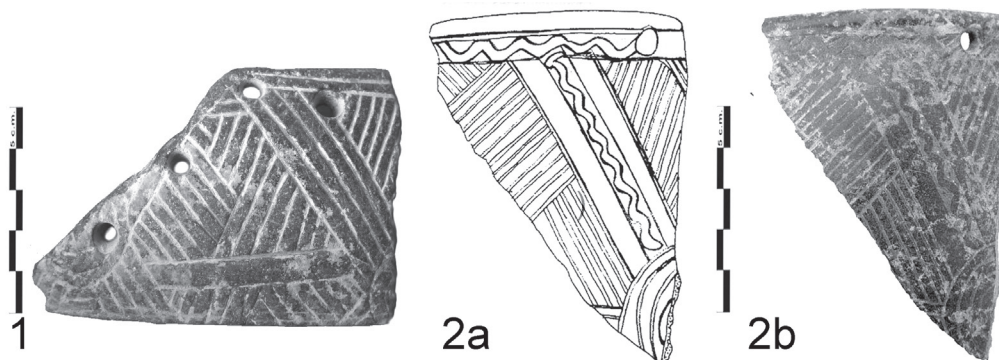

Fig. 4   Examples of possibly kept and reused chlorite sherds with a decoration similar to the belly shaped standardized vessel from Körtik Tepe (Coșkun et al. 2010: Fig. 2): 1- Tell Qaramel (by courtesy R.F. Mazurowski); 2- Tell 'Abr 3 (Yartah 2013: Fig. 34), both in northern Syria.

Fig. 5   Import or copy? Chlorite vessels from 1- Jerf el Ahmar (Stordeur 2015: Fig. 3.1) and 2- Tell 'Abr 3 (Yartah 2013: Fig. 157). A very similar item was found at Körtik Tepe (Özkaya and Coșkun 2007: p. 145).

animals and plants (Arbuckle and Özkaya 2006; Özkaya *et al.* 2011; Rössner *et al.* 2017). They buried their dead beneath house floors. There is a great variety of burial rituals, but this differentiation is neither reflected in the diet nor in the architecture or in the distribution of objects (Benz *et al.* 2016). Some of the chlorite vessels they produced were very elaborate and standardized (Coșkun *et al.* 2010: Fig. 2). As the context and use of these vessels shows, they were esteemed objects, but their ubiquitous repartition over the whole site shows that their use was not restricted to a special group or place. Within the settlement, obviously
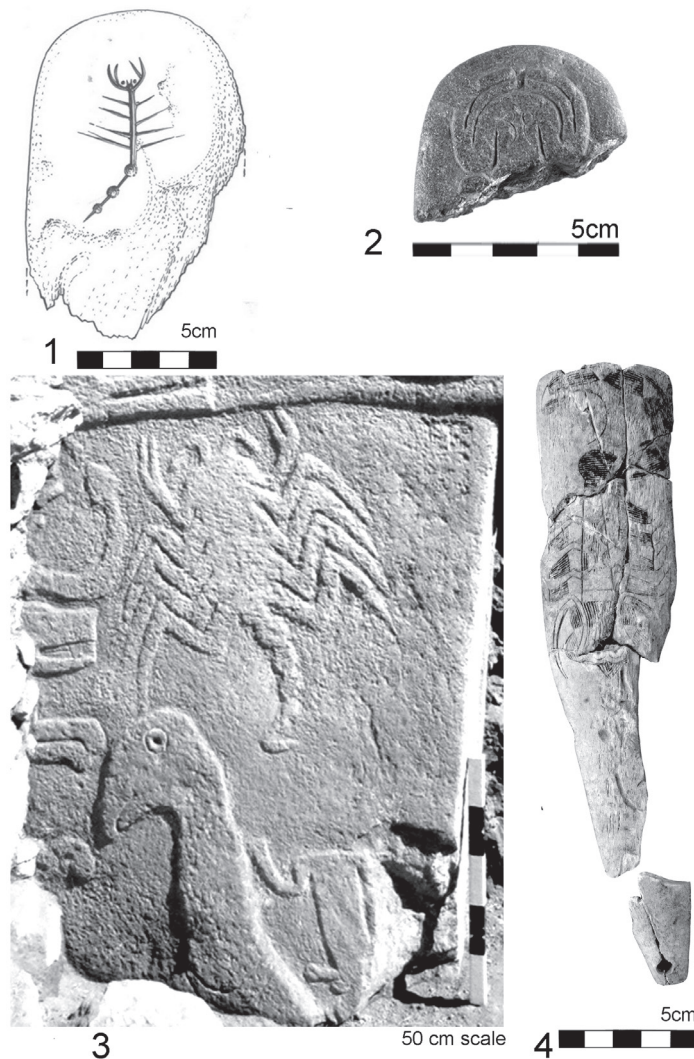
Fig. 6   The ubiquity of motifs was very high. For example, scorpions were represented in various media at different scales: on bone plates, chlorite vessels, stone platelets or in monumental scale on a stone pillar at Göbekli Tepe: 1- Jerf el Ahmar (Stordeur 2010: Fig. 15.13); 2- Gusir Tepe (by courtesy N. Karul); 3- Göbekli Tepe (section of a photo by K. Schmidt); 4- Hasankeyf Höyük (Miyake 2013: 45, Fig. 3). Similar bone objects, a stone plate with a complete scorpion and chlorite vessels with scorpions were found at Körtik Tepe (Özkaya 2005: Fig. 9; Özkaya and Coşkun 2007: Fig. 145 section; Özkaya *et al*. 2013: 68 section).

everybody had access to these objects. Some of the vessels were even repaired, indicating their use in daily life (Özkaya *et al.* 2013). Despite this high esteem they were deliberately destroyed during burial rituals, removing them definitely from daily use or inheritance (Benz *et al.* in press).

The material, chlorite, corresponds with a general trend of an enhanced use of stone during the early Holocene compared to the Younger Dryas, not only in building traditions (*e.g.* Watkins 2004; Karul 2011; Rosenberg 2011; Miyake *et al.* 2012, Miyake 2013; Schreiber *et al.* 2014; Stordeur 2015), but also in jewellery (Alarashi 2015) and art (Hauptmann 2011; Özkaya and Coşkun 2011; Schmidt 2011). In contrast to perishable materials, the use of stone and its decoration, both relief and incised, imply a metaphor of permanence, *i.e.* the reflexivity, the possibility of interaction with the object and built space, is reduced and demands special efforts. Klaus Schmidt was able to show that some of the decorations on the pillars of Göbekli Tepe were erased, but these are rather rare exceptions (Schmidt 2006: 186). The complete destruction of monuments built in stone (Özdoğan and Özdoğan 1998; Stordeur 2015) or of the stone vessels from Körtik Tepe (s. below) required an act of force and probably implied highly arousing, noisy rituals (Whitehouse 2000).

The craftsmanship that the decorated vessels demonstrate is very high (Özkaya and Coşkun 2011: 95-96). Some of the shapes and decorations are so standardized that a strong transmission of cultural traditions is evidenced. However, in none of the other contemporary sites similarly well elaborated stone vessels have been discovered, but instead variations, local adaptations of the motives (Schmidt 2011: Fig. 4; Yartah 2013: Fig. 34; Stordeur 2015: Fig. 3.1) and isolated sherds of the Körtik Tepe model have been recorded (Figs. 3-5, Benz *et al.* 2016: Fig. 3).

Irrespective of their meaning, it is striking that combinations of similar motives were encountered on several contemporary sites from the Upper Tigris Region to the middle Euphrates and on various media (Özkaya and Coşkun 2011; Mazurowski and Kanjou 2012; Benz and Bauer 2013; Yartah 2013; Stordeur 2015). For example, scorpions were incised on bone objects (Özakya and Coşkun 2011: Fig. 37), stone pebbles (Özkaya 2005: Fig. 48.9; Karul 2011: Fig. 21) and in a monumental scale at Göbekli Tepe on pillar 43 (Schmidt 2011: Fig. 29) (Fig. 6). Representations of snakes, birds and concentric circles (sometimes in an almond-like shape) are so ubiquitous that they can be considered the standard repertoire of early Holocene cultures of Northern Mesopotamia (for more such examples see Benz and Bauer 2013).

Before concluding this section, some observations concerning human representations are important for further interpretations: During the early Holocene, the representation of humans is generally

rare. Humans are represented as isolated figures, *i.e.* they are not in a group of other humans, but surrounded by animals and abstract signs (Schmidt 2011: Figs. 15, 29; Mazurowski and Kanjou 2012: Pl. 68.2; Yartah 2013: Figs. 134, 182.3, 185.3; Benz and Bauer 2015) (*e.g.* Fig. 6.3).[5] In contrast, during the Pre-Pottery Neolithic B and the Pottery Neolithic, humans occur in groups (Hodder 2006: Figs. 13, 38; Hauptmann 2011: Fig. 22). The site of Göbekli Tepe is therefore of great interest here (Schmidt 2011): although the stone pillars are definitely anthropomorphic, and thus may represent an assembly (the pillars in the walls), built around a central pair of super-humans (the central two pillars), not a single face is depicted on the pillars' head. The most important part for recognizing personal identities, the face, is deliberately kept anonymous, whereas most of their figurative decorations are animals.

Fragmentation and deposition of destroyed sculpture parts is a recurrent practice during the early Holocene (Morsch 2002, in this volume; Hauptmann 2011). Isolated heads of up-to-life-size human sculptures were found in the backfill of the enclosures at Göbekli Tepe, but their faces are rather abstract (Notroff *et al.* 2015: 74).

To summarize these observations: The reflexivity with the material was reduced due to the permanence of incisions and relief decorations in stone. The alteration of the buildings and objects either demanded some effort or their complete destruction or backfilling, possibly as an impressive event. Craftsmanship at Körtik Tepe created very strong local traditions which were adopted at other sites, but it seems that there was no direct teaching or exchange of artists because local adaptions differ in technique, style and motive combination. Access to the most elaborate "original" objects seems to have been restricted to Körtik Tepe (Coşkun *et al.* 2010: Fig. 2). Yet, the high symbolic value of these vessels is demonstrated by the presence of isolated sherds at other sites and not lastly by the local imitations.

The high ubiquity and wide distribution of the symbolic repertoire shows that it was known within a huge communication network, ranging at least from northern Syria to southeast Anatolia, and that the symbols recalled ideas or narratives on various occasions and places.

Practices of fragmentation and deposition of decorated stone vessels in graves and below benches (Özkaya and Coşkun 2011; Yartah 2013; Notroff *et al.* 2015) stand in strong contrast to concepts of accumulation and inheritance of goods to enhance personal identities by the possession of objects. This practice might point to possible tensions between ethics of equality, characteristic of small-scale communities (*e.g.* Widlok and Tadesse 2007; Borgerhoff Mulder *et al.* 2009; Guenther 2010; Widlok 2013a, b), and daily life in early Neolithic communities, when – due to increasing sedentism – the accumulation of objects had become possible (Benz *et al.* 2016).

The relationship to the natural environment represented in the decoration of these vessels, clearly shows, that humans conceived themselves as individuals within the world of animals. At least in their world-view, they did not dominate the animals, but were clearly integrated within their world, irrespective of the fact that they were hunters and fishers killing a wide spectrum of animals for daily food (though rarely those represented) (Arbuckle and Özkaya 2006; Özkaya *et al.* 2011). As Schmidt (2006; see also Schüttpelz this volume) has convincingly argued, these people were still deeply rooted in a hunter-gatherer way of life. Recent ethnoarchaeological studies of the represented relationship of animals with humans support this idea (Benz and Bauer 2015). With the monumental buildings at Göbekli Tepe this conceived relationship to nature and to human groups starts to change. During the Pre-Pottery Neolithic B humans are more often depicted in the context of group activities and in monumental individual sculptures, partly surpassing animal depictions in scale.

The psychological effects of the specific choice of represented animals (above all snakes, scorpions, birds, foxes, panther/lions, aurochs, boars), of their gestures and of the threatening parts of some of these animals (claws, bare teeth, horns, beaks) remains a pending question for future research. However, the ubiquity of the symbols in different contexts and on different media shows that these symbolic identities were not restricted to special occasions but their frequent presence probably had a strong impact on the mind and memory in daily life. The reduced reflexibility with these objects enhanced this impact, above all on the brains of sub-adults, who grew up in prefigured spaces and the omnipresence of specific symbols. So far, the importance of encoded symbols has been shown for the creation of local and regional identities, but the rituals in which these objects were used and created, demonstrate that they were also constitutive for the enhanced relations with the past. The monumentality and the intensified use of stone contributed to the transmission of traditions over generations. Although many of the huge

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5   Whether the human figures without heads on the front of a limestone bench at Jerf el Ahmar really represent humans is a matter of debate (Stordeur 2015: Figs. 110, 111.4; *cf.* Yartah 2013: Fig. 102.2b).

communal buildings at contemporary sites were rebuilt several times and burnt and backfilled deliberately after some while (Özdoğan and Özdoğan 1998; Stordeur 2015, see below), new radiocarbon data from Göbekli Tepe suggest that they were used for generations (Clare pers. communication).

In a similar vein, the ritual of deliberate fragmentation of chlorite vessels points to relationships with the past. This ritual is discussed in detail elsewhere (Benz *et al.* in press), but it has to be mentioned that some shards were obviously kept, reshaped and decorated functioning as "triggers" to re-present past events (Wightman 2015), *i.e.* the burial of a special person. Given that these "memory stones" were – at Körtik Tepe – found almost exclusively in graves raises the question, whether they contributed only to personal identities or whether they were part of a communal act of ritual commemoration and thus formalization. In other words, did the past become normative for the whole group or were the symbolic objects just used to retain personal relationships beyond death? More research about the context of these platelets is necessary in order to find answers to such questions. However, there is good reason to suggest that the symbolic networks of northern Mesopotamia not only functioned by enhancing territorial identities of contemporary local groups. Through the use of monumental communal architecture of stone and decorated chlorite vessels in high-arousal burial rituals, the keeping of some sherds, including their reworking, past events were constantly recalled, thus possibly influencing present behaviours and identities. The same may hold true for the decorated stone platelets of the Levant (Benz and Bauer 2013). An in-depth study of these items might evidence similar observations, although their exclusively geometric design restricts them from some of the above mentioned conclusions about the represented self-image of humans. This example illustrates the dialectical interdepence of encoded and enacted ideas. The deliberate destruction of the elaborate stone vessels during burial rituals transformed these objects into constitutive part of the ritual. Moreover, it can be surmised that through the enactment the reworked or kept sherds were symbolically laden and served as memory tokens connecting past and present, identifying the owner as a part of the (ritual) community.

Enacted Ideas

The enactment of ideas is essential for their transmission and permanence. Without at least some compliance of the actors in daily or ritual practices, ideological concepts will lose their relevance and will get lost in the long run (Connerton 1989; Wulf 2005; Watkins 2012). Influential ideas are those which are not limited to one area of life, but which affect several areas and thus have significant impacts on decisions and behaviours. Enacted ideas can be manifested in daily routines such as foodways (Twiss 2012), social structures or traditions of craftsmanship of all sorts. As it has been suggested above, integrative studies may help to detect such enacted ideas (*e.g.* Müller *et al.* 2008; Alt *et al.* 2013; Benz *et al.* 2016). Various forms of patterned behaviour, what Bourdieu (2009) called "habitus" or Connerton's "habit-memory" (1989: 34), manifest themselves in the archaeological record in favourable conditions. The field of anthropological research offers a wide spectrum for the reconstruction of such enacted ideas: from a-DNA analyses for the reconstruction of familial relationships to analyses of epigenetic markers and stable isotopes. For example, Bonsall and his colleagues demonstrated that whereas Mesolithic people of Lepenski Vir ate a lot of fish, the Neolithic immigrants did not (Bonsall *et al.* 2004). Similar observations have been made earlier on early Neolithic farmers in Britain (Richards *et al.* 2003). A high consumption of fish did not seem appropriate for early Neolithic farmers. Reconstructing palaeodiets might thus give important clues for social identities (Bickle and Whittle 2013). Comparing several fields of evidence might even lead to further conclusions: Alt *et al.* (2013) found convincing evidence that the early Neolithic inhabitants of Basta, in southern Jordan, segregated themselves from other local groups by rather strict mating patterns akin to endogamy. However, many other objects and imported raw materials clearly show that these people were not geographically isolated. The specific epigenetic traits affected not just a specific task group but a third of all investigated individuals (which is a very high rate, compared to 1-2% in modern populations), irrespective of age or sex (Alt *et al.* 2013). Therefore, the observed mating patterns cannot be traced back to geographic isolation or segregation of a specific task group or elite, but should probably be interpreted as an enhanced commitment to the local community and thereby a strengthening of corporate identities (Gebel 2004: 9).

Beside daily routines, the most obvious evidence for enacted ideas is rituals. Ritual activities are not only a mirror of social relationships, they are constitutive and essential for the introduction, functioning and permanence of social and religious systems (*e.g.* Connerton 1989; Rappaport 1999). Through several effects, such as the synchronisation of activities, segregation from daily life, extraordinary spaces and emotionally affective activities, in rituals, the top-down control of the neo-cortex

is often limited and the brain tends to be reset to basic desires such as social acceptance, cooperation, trust and harmony (Wightman 2015: 28). The given order in rituals promotes automatism and reduces reflexivity of the participants. Impressive modern examples of such effects are concerts or football matches. Irrespective of the profane framing of these modern rituals, fans envision their hero as a super-human (not at least visible in the enormous sums payed for him/her). The finals of championships and the receiving of the trophies are choreographed like religious rituals, either by communal drinking from the "holy grail" or by presenting the trophies like holy paraphernalia. Reflective thinking succumbs to highly emotional reactions – in a positive way for one team, and in a negative way for the adversary team. Emotions, either positive or negative, enhance the memorization of events, *i.e.* highly arousing rituals (s. Whitehouse 2000) will leave a long lasting impression and might even induce life-long bodily reactions (Bauer 2015).

Nevertheless, caution must be exercised, since rituals are never a clear mirror but a distorting one. Rituals create ambiguous situations, they may display equality but by various diacritical means differentiation and possible hierarchies may be confirmed (Benz and Gramsch 2006; Dietler 2006; Hayden 2014); Van Gennep (1909) highlighted the liminal status passage rites create, in order to reintegrate, in the end, participants into the community at a new level. One of the central feelings created by rituals is awe and devotion (Bloch 2010). Although rituals strengthen communal commitment, they always create situations fraught with tensions. Who is allowed to participate, who is damned to watch and who feels excluded? Who are the "masters of the show"? How strong is the framing of the ritual and how much reflexivity is allowed? Can a dogma be distinguished from subconscious synchronisation of behaviour? Can a group dance in which everybody follows the same steps and rhythms be considered a dogma or is it a natural process of synchronization? Are the tracks through the landscape, used day by day, a preconception of a symbolic space or just *habitus* (Wightman 2015)? These questions give a glimpse of the difficulties archaeology has to face when patterned behaviours are studied in archaeological records. It goes without saying that there are no strict borders between habitus and ritual, between profane and sacred, between representations of humans, super-humans, or gods in material remains.

With these ambivalences in mind, we will analyse with the same integrative, socio-anthropological method outlined above what is one of the most outstanding developments during the early Holocene: the emergence of particular communal buildings with Göbekli Tepe definitely being the most impressive example (Schmidt 2006, 2011; *cf.* Banning 2011; see also Schüttpelz this volume). The basic constructional aspects of these special buildings have been published on many occasions (*e.g.* Kenyon 1981; Schirmer 1990; Hauptmann 1993; Yartah 2005; Schmidt 2006, 2011; Stordeur and Ibáñez 2008; Finalyson *et al.* 2011; Abbès 2014; Piesker 2014; Kurapkat 2015; Stordeur 2015); in the following we will only elaborate on the questions we are concerned with: mediality and possible emotional impact.

1. In strong contrast to hunter-gatherer meeting places, which are often at unusual natural locations, such as hill tops, special rock formations or caves, the constructions of the communal buildings are highly standardized (Fig. 7). They were so standardized, that on the middle Euphrates, about 200 km southwest of Göbekli Tepe, where obviously huge limestones were missing, wooden posts were plastered and decorated to give them the appearance of stone pillars (Stordeur 2015).

2. The elaboration and scale of the communal buildings is extraordinary. For group members, awe, admiration and perhaps also pride of being part of this community were evoked facing the monumentality, the logistic performance and the extraordinary craftsmanship. To outsiders these monuments probably demonstrated strength and power, marking territorial claims.

3. Communal buildings were – with one possible exception (Finlayson *et al.* 2011) – at the edge of the sites, but not in their centre. For the first time, communal ritual space was segregated from profane activity zones. It was delimited to a particular space and to special constructions. The preconceived space guided movements and directed attention and gazes (John 2010).

4. It was possible to control and limit access to these buildings.

5. Depending on the kind of roof cover, specific moods might have been evoked (Benz and Bauer 2013; Notroff *et al.* 2015). With a dark room, poorly lighted by flickering fires, in which the animals in relief on the pillars seemed to start to move, feelings of discomfort, awe or possibly of fear were promoted. These effects were probably attenuated when there was no roof cover (Stordeur 2015) and when people became used to the "extraordinary" environments.[6]

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[6] The process of popularization as it can be suggested for the PPNB concerning multiplication of T-shaped buildings may have contributed to habituation and decreasing emotional affection.
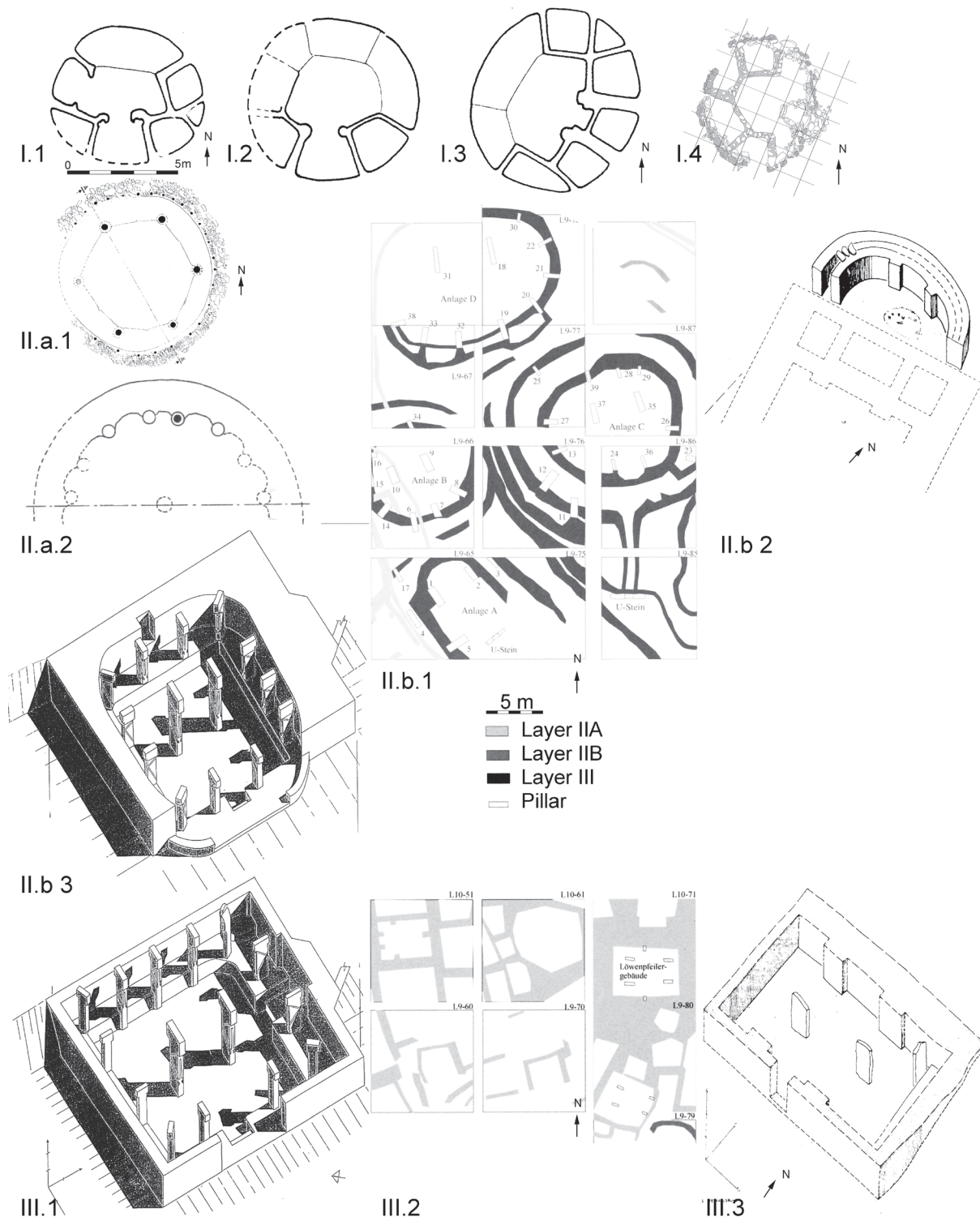
Fig. 7   Types of communal buildings: I. Round with small rooms, II. Round to oval without room division a) with wooden pillars, b) with stone/clay pillars, III. Rectangular with pillars. PPNA-Middle PPNB. I 2-IIa 2 and IIb 2 are reproduced at the same scale as I.1. Whenever possible orientation has been standardized to the north. For figures without a north-flash, no orientation was given in the original publication.

I   1- Mureybet, M 47; 2-3- Jerf el-Ahmar, EA 7, EA 30 (modified after Stordeur and Ibáñez 2008: Fig. 26 and Stordeur *et al.* 2000: Fig. 5); 4- Wadi Tumbaq, EA-6, niveau 4 (Abbès 2014: Fig. 8.2);

IIa   1- Jerf el Ahmar, EA 53 (modified after Stordeur *et al.* 2000: Fig. 9), 2- 'Abr 3 (Yartah 2005: Fig. 8.2);

IIb   1- Göbekli Tepe, Turkey (modified after Schmidt 2006: Fig. 76); 2- Çayönü, BM1 (modified after Schirmer 1990: Fig. 11); 3 Nevalı Çori (after Hauptmann 2011: Fig. 10);

III   1- Nevalı Çori (after Hauptmann 2011: Fig. 10); 2- Göbekli Tepe, Lion-Pillar-Building (modified after Schmidt 2006: Fig. 76); 3- Çayönü, Flagstone Building (modified after Schirmer 1990: Fig. 11).

6. Most of the buildings show several renovation phases and rebuilding in the similar style and often on the same spot. Permanence of space was enhanced considerably and strong building traditions were created by repetitive imitation of the same style.

7. Despite the enormous efforts invested in building, almost all communal buildings were destroyed, burnt and backfilled deliberately after some time (Özdoğan and Özdoğan 1998; Stordeur 2015).

Although we do not know the special nature of the rituals enacted in the communal buildings, several aspects of their mediality give important clues on the social and ideological changes in early Holocene communities. The standardization of the communal buildings made it possible that people who were socialized in one area could easily move to other regions without losing their ability to "behave appropriately" in communal contexts. Movements were preconceived by the repetitive similar structuring of space. As Rappaport has pointed out, "social groups forge cooperative links […] through rituals characterized by the exchange of simple, clear signals and focused on messages that highlight the few commonalities rather than the many differences between groups" (Wightman 2015: 31). Similar spatial structure thus offered security in a foreign place and meant a reaffirmation of common identities ignoring possible local peculiarities.

The joint synchronous actions to build these monumental constructions enhanced the corporate identity of the builders but also their commitment and loyalty to the group. Moreover various task groups merged in one team, including those who provided food, the workers, the organizing team, and the observers as well as possible ritual specialists. Complex interpersonal cooperation emerged and was sustained by the repeated rebuilding of these constructions.

Imitation probably played an important role in the building process since constructions were quite conservative based on a fairly fixed repertoire of constructional details, best evidenced by the reconstruction of communal buildings at Jerf el Ahmar (Stordeur 2015).

Irrespective of the nature of enacted rituals, the communal experience of being excluded in a special place from daily activities meant particular lasting moments. If adolescents or even children participated in special rituals within these buildings, *e.g.* initiation rituals, the social seclusion was enhanced by the symbolic spatial segregation.

The reduced possibility to interact with the media due to the building in stone further enhanced the impression of being part of a preconceived order, hardly possible to change. This feeling is in strong contrast to the very flexible nature of mobile small scale communities (Vitebsky 2001; Wightman 2015).

Last but not least, the closing rituals probably were further high-arousal communal rituals. Seeing the communal buildings being burnt down deliberately was a long lasting memory, especially since hearths inside domestic houses were a constant threat for Neolithic communities where everything could be lost. The deliberate burning thus meant a masterpiece of communal control and "domestication" of one of the major threats of natural disasters.

Discussion

Comparing the enhanced institutionalization and segregation of structured ritual space with the encoded ideas outlined in the first part of the empirical section, several contradictions and tensions occur: on the one hand humans were not represented in communal activities at Körtik Tepe, but they were at Göbekli Tepe, where the layout of the buildings clearly mirrors a communal act of anonymous super-humans. Interestingly, individual identities were not represented. The "faces" of the T-pillars remain anonymous, but the specific attributes of clothes and animals characterizes them as persons with special social roles. Similarly, the human figures on the stone vessels from Körtik and Hasankeyf Höyük represent a specific type with a standardized head gear, dress and body movement (Benz and Bauer 2015). They are often surrounded by animals which are represented in a symbolically enhanced scale. So there is no domination above nature. This is in strong contrast to the architecture of Göbekli Tepe, where the representations of the anonymous "super-humans" are also surrounded by a specific repertoire of animals, but clearly surpass the animals in scale.

It seems that with the creation of specific communal buildings, segregated from domestic activity zones, a communal identity is publicly displayed at a level unknown before. The high ubiquity shows that it was obviously necessary to display the communal identity everywhere and in various materials in order to incorporate it in the mind of the group members and to demonstrate it to others. The enhanced use of stone symbolizes the intention for permanence over generations. As the example of Körtik Tepe has shown, chlorite sherds from deliberately destroyed vessels were kept and reworked with individual figures suggesting that these objects contributed to personal identities by relating them to past events.

Moreover, isolated sherds from these vessels discovered in other contemporary sites of northern Syria, might indicate that these objects had a symbolic value beyond individual souvenirs, but for a larger "ideological" community.

The standardization of symbols and building traditions and possibly also of communal rituals allowed a large communication network and created familiarity despite local peculiarities. It also allowed the impersonal transmission of information, so that members of this communication network at least had an idea what a specific symbol or a combination of symbols meant. The display of the recurrent repertoire possibly recalled the whole narrative, symbolized and activated memories of communal events.

The social advantage of a unified symbolic system, acted out in specific communal rituals, seems obvious and was possibly one of the main factors in creating confidence and in mitigating conflicts in larger communities. However, the standardization also had a significant disadvantage: the prefiguration of communal space and of symbols had a strong influence on the socialization of children. Movements were preconceived and could easily be imitated due to the structured space. Individual flexibility and reflexibility was thus reduced and synchronized activities increased. The display of threatening parts of the animals, of threatening scenes and the monumentality contributed to evoking feelings of awe and possibly fear. With the above mentioned characteristics of fearful people in mind, it can be suggested that this specific emotional mode was provoked deliberately: On one hand it created pride being part of this powerful culture; on the other, in more vulnerable people, such as children, it might have also called for the need to be protected, thus being more willing to behave in a loyal way. Last but not least, monumental markers such as Göbekli Tepe were a sign of power for approaching strangers (Sütterlin and Eibl-Eibesfeldt 2013). Although some of these aspects, such as the preconceived plan of cult-buildings, the monumentality and standardization, might point to top-down creation of a symbolic system, other aspects, such as imitation, miniaturization, and the deep rooting of motives in a hunter-gatherer worldview, rather point to bottom-up processes. However, given the lack of detailed contextual studies on symbolic objects it seems premature to reach a conclusive idea on these processes (see also Gebel this volume).

The evidence outlined above indicates in many respects a community transitioning towards fundamentally new forms of living together with emerging institutionalization and increasing social differentiation. New forms of social interaction with the environment become especially prominent in the emerging dominance of humans and their display in communal activities at Göbekli Tepe and at later sites (Garfinkel 2003; Hauptmann 2011: Fig. 22) in contrast to the isolated depictions as they have been prevalent at Körtik Tepe, Hasankeyf Höyük, and Tell 'Abr 3.

New Perspectives Instead of a Conclusion

The aim of this introduction on the role of "intangible" concepts for the creation of Neolithic corporate identities was to present an integrative anthropological approach in order to find patterned behaviours providing clues to enacted and encoded ideas. The examples given have demonstrated the essential role of material culture in emerging standardization and institutionalization. The permanence and presence of symbols created prefigured (ideological) spaces which influenced socialization and human cooperation. Objects therefore not only promoted dogma and authority but were constitutive elements of their enactment and encoding.

We have suggested that by integrative approaches including anthropological, neurobiological, and archaeological perspectives it is possible to detect tensions, contradictions or positive feedback loops between ideologies – in the widest sense – and daily practices. The above mentioned examples let us surmise that the people of the early Holocene lived in times where the flexible ideas and social structures of hunter-gatherers faced increasing circumscription of group identities and the possible emergence of the institutionalization of social roles. Commitment to the group was enhanced by a symbolic system displaying powerful, poisonous and even lethal animals, probably evoking ambiguous emotions of awe if not fear in weak members and possibly admiration, pride and power in those who identified themselves with the masters of architecture, art and rituals. The monumental scale of cult buildings and highly arousing rituals enhanced these emotions and memories. The increasing importance of the past and of late group members for the corporate identity of Neolithic groups is evident, even though it is not so prominent as in the central Levant where ritual plastering of skulls can be observed (*e.g.* Kuijt 1996, 2008; Stordeur and Khawam 2007; Benz 2012; Khawam 2014).

It has been suggested that studies of mediality can assist in understanding the impact of symbolic systems on political, social and emotional conditions within (proto-) Neolithic communities. The

analyses of medial aspects of encoded and enacted ideas have shown that with the advent of sedentism the formalization, standardization, permanence and demonstration of corporate identities increased until living together was established at a new scale during the Pottery Neolithic. Past events and relationships to the dead, buried beneath house floors, gained in importance not only for individual but probably also for communal identities. The emerging orthodoxy of the early Holocene stands in strong contrast to the flexible, situative, individual and spontaneous social and ritual concepts of small-scale mobile communities. Studies focussing more intensively on the praxis in which symbolic objects were used, will provide further important evidence for the interpretation of their social meaning.

Acknowledgements

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Cultural Memory: Symbols, Monuments and Rituals
Sustaining Group Identity

Christa Sütterlin[1]

Abstract: The transition from semi-mobile hunter-gatherer groups to larger independent communities living together in permanent settlements brought more than economic and social changes. On a cultural level, the emergence of forms that reveal a greater emphasis on the symbolic economy may be observed. This includes forms of norms and customs, of religion, and of monuments and sacred objects. We may observe comparable phenomena in traditional cultures that exist today. The construction of group identity depends on myths that explain the group's identity by means of the cultural creation of common ancestors. This is for the most part territorially defined. Materially, these myths are made manifest by sacred objects that combine stylistic singularity with solidarity of form. Stored in central locations of the community, they are continually ritually re-activated. Through such symbols, the group communicates its "identity". The earlier kinship relationships between members of the group are replaced by culturally defined relations.

On another level, artefacts and monuments that derive their expression from the repertoire of ritual "hostility displays" are used to secure the group's territory. Both forms of symbolic practice serve to maintain group identity internally by binding through common descent and externally by territorial demarcation through agonal symbols. Examples from different cultural contexts will illustrate this discussion.

Keywords: inter-group territoriality, myths of land origin, symbol-identification, indoctrination, evolution of small-group ethos, anonymous large scale society

Introduction

The salience of pictorial signs and structures touches very early levels of human culture. Long before writing appeared in different cultural regions around the world, the evidence of figures and pictorial markings witness the existence of human symbolic dealings with the environment. The messages involved may be difficult to read and understand nowadays. What we compare and analyse are patterns, structures and styles: context is mostly missing, and cultures are complex. But we don't need to understand the meaning of every engraving on a bone or wall to navigate well. As Polly Wiessner (2012) puts it: "Culture can be navigated, because we are all one species. We do have universal behavioural predispositions that are found in all cultures and these can make up sign posts for a map of culture when you come in a new culture". Different cultures repress, elaborate or transform these tendencies via different beliefs and traditions, and we have to ask how any universal tendency is expressed in a given culture.

To look at cultural history from an evolutionary perspective is not new. Studies in evolutionary and behavioural ecology have moved into archaeology in recent years. Humans evolved in small-scale societies and to understand the basic behaviour of small-scale societies it is helpful to understand how the evolution of cooperation and of conflict mediation allowed larger societies to emerge. Small-scale societies are disappearing nowadays, overrun by larger societies and by globalization, and with them ob-

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servable processes are vanishing. Still, small-scale societies arise within contemporary large-scale ones, and it will be interesting to compare the ones studied in the prehistoric past with these new examples.

Cultural comparison is part of the method of human ethology, a branch of the behavioural sciences that investigates human behaviour at the level of the individual, group, population, community, and species, the complex behavioural sequences of individuals as well as interactions between people and groups of people. Data are gathered in a way that allows other researchers to follow the procedure and thus check the results. Filming and sound recording belong to the classical methods that can be analyzed in further steps of comparative studies. Collecting quantitative data is an important complement for feeding models that are conceptualising the evolution of societies.

I was asked to give a contribution from our perspective about what could have formed and sustained cultural identity in traditional societies of the past, and I tried to answer some of the questions by means of data collected within our scientific tradition. The production of arts and the use of symbolic objects form part of the compound of material culture in a given society. Knowing that this approach is different from the one used in archaeology, I have to count on the reader's disposition to consider multiple propositions from a different scientific tradition.

Manifestations of Group Identity

Living at the beginnings of a millennium where the prospects of global communication and exchange are full of confidence and nourished by all means of technical support, we are surrounded by political tensions based on national or ethnic conflicts. Evidently, humans master their rational and physical tasks more easily than social tasks, and it seems that the optimistic focus on economic enterprises worldwide still ignores distinctions that have been accumulated by nations in a long process of national self-discovery and differentiation.

Expressions of group identity are among the oldest manifestations of human social behaviour. Phylogeny gives evidence of group-specific communication in species from insects up to primates that serve the demarcation of group identity. In some closed anonymous groups, where individual members recognize each other from chemical cues (odours), members are tolerated while strangers are attacked. Rats and mice mark each other with their urine so as to be recognized, lemurs and baboons defend the resources within their territory against other groups (Patterson 1973; Eibl-Eibesfeldt 1999: 592; Hrdy 2000: 322), and chimpanzees control their group territories by regular patrols (Goodall *et al.* 1979: 25; Eibl-Eibesfeldt 1999: 522, 614, 2000: 85). Groups of birds and mammals communicate their membership by acoustic signals (songs). Odour and songs are territorial markings as well (Hediger 1949; Eibl-Eibesfeldt 1999: 455, 526).

Territoriality among humans begins with what is called the "individual space" (McBride *et al.* 1965; Hall 1966). In children's groups territorial behaviour can have an organizing and conflict-avoidance function (Eibl-Eibesfeldt 2004: 476), and in general personal space is respected. In the case of fluctuating territories (for instance in towns) a prior occupied space is accepted as a territorial right (Patterson *et al.* 1971).

In prehistory there are of course limits to the identification of spaces marked by physical borders. Earliest finds refer to a place encircled by a series of stones around a fireplace in Olduvai Gorge in East Africa, referring probably to *Homo erectus* (Malmberg 1980: 67). The demarcation of households in traditional and non-traditional societies is observed down to the present day (Eibl-Eibesfeldt 2004: 477).

Group-related Demarcation of Territory

Territoriality refers to any type of land-bound privileges assuring access to resources (Malmberg 1980; Eibl-Eibesfeldt 1998: 525, 2004: 456). In the absence of intrusion by non-group members, evidence of spatial ties to an area can be difficult to detect. However, when such a threat does occur, territorial ownership claims can become apparent. As an example, the Nama (Namibia, South Africa) never demarcated the area of the Namib strip from the coast to the hinterland as their territory. But when the strip was proposed as a nature reserve by government authorities, the Nama protested by hinting at their tribal land rights (Budack, personal communication).

In the 1960s anthropologists debated whether territoriality existed among hunter-gatherer groups. Some denied that mobile societies aggressively defended territory at all (Sahlins 1960; Lee 1968; Woodburn 1968). The peacefulness of some cultures was attributed to the absence of group-specific land

ownership. For instance Richard Lee (1968) and Irven DeVore (1971) denied that the Bushmen of the Kalahari (Botswana) lived in defined territories, but claimed that they were open and constantly changing communities. This contention was based on little field research and conformed to the scientific assumptions of that period. Lee revised his earlier statements (1972, 1973).

M.G. Bicchieri (1973) describes nine out of twelve hunter-gatherer cultures as distinctly territorial. Until recently, the various groups of the San (Bushmen) in the Central Kalahari owned distinct areas in which they lived by hunting and gathering (Eibl-Eibesfeldt 1972; Heinz 1972, 1985). The specific land rights were hereditary, with each individual receiving such rights from the mother as well as the father. Land rights were known and respected by everybody. If members of one community (band) sought to hunt in the territory of another band, they had to ask permission of the headman; otherwise their lives were endangered (Zastrow and Vedder 1930). Territories were maintained and protected largely by social boundary maintenance (Wiessner 2014). In times of famine, partner communities were given temporary access to the area in a complicated system of reciprocal exchange called *!hxaro* (Wiessner 1977).

Social relations within hunter-gatherer groups were egalitarian and ensured that no individual could dominate others. These structures were enforced by levelling behaviours whereby group members regulated the status of successful hunters (Wiessner 1996). Conflicts between groups however were quite common, often caused by disregard for or violation of land boundaries (Lebzelter 1934; Wilhelm 1953; Tobias 1964; Silberbauer 1973). Rock paintings of the Bushmen record armed conflicts between different groups (Drakensberg, South Africa). Similar findings are reported for other hunter-gatherer cultures such as the Pygmies in Central Africa (Schebesta 1941; Godelier 1978; Heymer 1995) and the Hazda in East Africa (Kohl-Larsen 1958). It seems that group identity is linked with territoriality. Peaceful, non-territorial human societies are yet to be documented. Territoriality is a universal ecological adaptation of our species. "Land" as a critical topic in the light of territorial versus geographical concepts was recently discussed by Fabio Pollice (2006).

Myths of Land Origin

Group identity is not only expressed by directing behaviour against out-groups, although inter-group conflict can intensify in-group cohesion. And territorial demarcation is not always linked to the threat of violence. Various Australian clans refer to totem ancestors from whom they originated and who conferred on them their land as property. In this belief the ancestors still spiritually inhabit and protect the territory against intruders. Control of land is a difficult task in the desolate regions where the central Australian clans were still living as hunter-gatherers until recently. Symbolic protection aids this task.

A rock painting of the Walbiri in Ngama, Central Australia, for instance, shows the totem serpent Jarapiri as an impressive long and waved line surrounded by protective signs. The painting marks the holy place of the python and serves as landmark of the territory – symbolically at least (Fig. 1). Local groups or clans explain noticeable geographical structures like hills, rocks, sinks and watercourses as founding tracks of the totem ancestors which they left behind while wandering through the land. During initiation the older men teach young men the legend of the ancestors, and in the process the travelling tracks are designed in the sand. Each of the young men copies the pattern on the surface of a plank or stone (churinga), which makes him a member of the clan, "imprinting", so to speak, his cultural memory (Fig. 2). The churinga stays with him throughout his life as a kind of heraldic emblem and as part of his group identity (Eibl-Eibesfeldt 2004: 470). Similarly a men's house in the highlands of West New Guinea (Indonesia), the native land of the Eipo, is founded by inserting rocks and stones into the marshy earth. This symbolically repeats the way primordial men's houses were founded by the mythical ancestors who came down from the mountains to settle the clan's territory. At the same time they planted cordylines (*cordylina terminalis*, a kind of rosette tree) to make the land fertile (Eibl-Eibesfeldt *et al.* 1989: 140; Heeschen 1990: 22). When a new men's house is completed and initiated, one man comes dancing towards the house with a cordyline above his head, another dancing with a stone. They plant both the palm and the stone into the ground so as to sanctify the place (Fig. 3). The ritual involves singing a short version of the legend, in which the land has become habitable and appropriated by the mythical act (Eibl-Eibesfeldt and Heeschen 1994; Eibl-Eibesfeldt and Sütterlin 2005: 18-20). Holy stones (sinim duk) are also the material of which the first humans were formed (Fig. 4).

The relationship between mythology and the appropriation of land is interesting and extends through the concrete strategies of settlement. Ray Rappaport (1968) reports that for the Tsembaga, horticulturalists of the Western highlands, the cordylines symbolize the presence of the ancestors who protect a certain territory. In cases of conflict, an area is not regarded as occupied as long as the cordylines of the
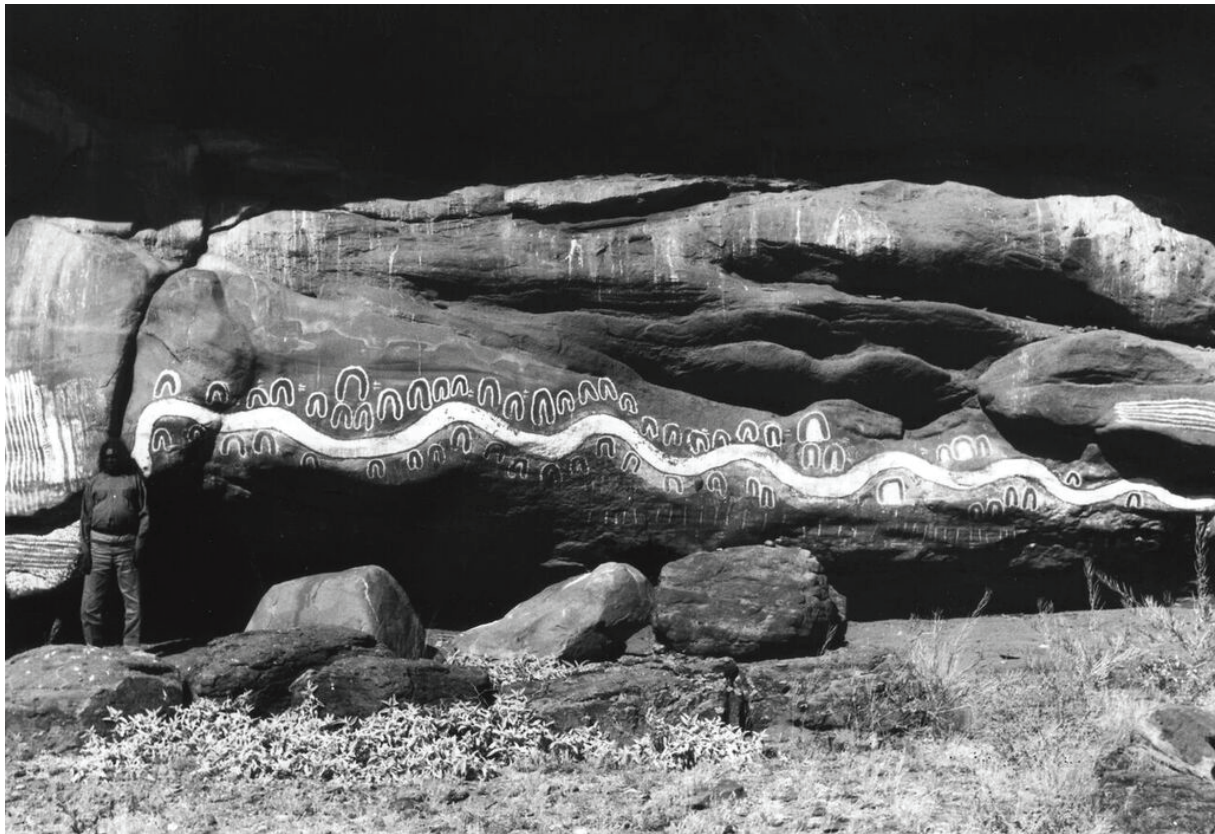
Fig. 1   The rock painting of the Walbiri (Central Australia) marks the sacred place of the totem serpent Jarapiri near Ngama and serves as a territorial sign. (photo: I. Eibl-Eibesfeldt)

defeated group are still on the old site, *i.e.* not replanted. Only then are the ancestors believed to have joined and legitimated the occupation. A cultural strategy of land defence! In the Eipo-Mek Valley, almost each village is hostile with the others. To reduce conflict and bind the different groups together, all boys of the same age group are initiated jointly in the same place (Eibl-Eibesfeldt 2004: 473).

To acquire a territory, the Yalenang (West New Guinea) also use mythological strategies, for example by "sanctifying" particular places within a new region. Single trees, springs or caves are called "sacred sites" – donated by the ancestors – and thereby taken into possession. Mythological ancestors are generally held to emerge "out of the earth" (Heeschen 2010, and oral communication).

In the Trobriand Islands (Milne Bay Province, Papua New Guinea) each adult inhabitant claims the right to cultivate a piece of gardening land, the right being handed down through matrilineal inheritance. By this the inhabitant is entitled only as user, not owner, of the land. Ownership belongs to those clans whose antecedents are ritually recorded to belong to the mythical ancestors. These again came out of the earth in the relevant place (Bell-Krannhals 1990: 104). As farming gardeners Trobrianders cultivate an indigenous exchange network called Kula, comparable to the Bushmen's *!hxaro* (Leach 1983; Sütterlin and Eibl-Eibesfeldt 2014).

It might appear inconsistent with this account that in Bushmen (San) societies no myths about ownership of land are known. If there exist rules of ownership (land rights), they are a subject of shared knowledge exchanged in everyday discussions. As territories have to be shared temporarily due to drought or famine, the correlation between territorial claims and the powers of spirits seems not to be universal.

Fig. 2   Stone Churinga of the Honey-ant Clan (Walbiri, Mount Allen, Australia). The line patterns represent the wandering trails of the ancestors who founded the land and its structures. (photo: I. Eibl-Eibesfeldt)

In a recent paper, Polly Wiessner (2014: 14032), an anthropologist expert in Southern African hunter-gatherer societies, discussed the role of firelight talks in human societies, based on the example of the Ju/'hoansi (!Kung) Bushmen (northeast Namibia and northwest Botswana). She points out that in most small-scale societies, myths and legends are told around the fireplace. Whereas by daytime Ju/'hoansi talks are centred on practical matters like economic issues, on gossip and social control, night conversations expand in story telling. Such stories often "reveal the nature of founding design and of its creators by providing vital links between individuals, group-specific sites, and ancestral beings" (Tonkinson 1991: 78). This refers especially to the Australian Aborigines.

Objects of Identity: Ceremonial and Ancestral Figures

The possession of land is evidently so important that it has been substantiated and affirmed by myths. Ceremonial objects that refer to the ritual of story telling mediate further substantiations. As described in the Eipo and Walbiri examples, the oral myth is ritually told during an act of object transfer or transformation. In one case the story of the ancestors is marked on the ground and in a further step carved into a board called a churinga (Eibl-Eibesfeldt and Sütterlin 2008: 32). In the second case the planting of a cordyline and a stone goes along with singing the founding myth. The stones show impressive patterns of elementary aesthetics. Objects like these belong to the ceremonial household of a group. In this context they also serve as identity markers for that group. Their significance and semantics are known by the members, knowledge that is shared and exclusive.

The history of descent is still visually manifest in some sacred objects, such as the Walbiri designs. In others, faces or lines are invoked as "ancestors". Prominent motifs in the circum-Pacific area are heads or masks at the centre of cult houses or on holy shields (Fig. 5). In the Keram area (East Sepik Province) posts used to support the lateral beams in men's houses show ancestor figures in vertical succession, and in the Maprik

Fig. 3   The holy digging stick and a sapling of the cordyline plant are brought ritually towards the anew-built men's house in Kosarek (West Newguinea) by one of the Eipo in 1975. Cordylines were planted by the holy ancestors to fertilize the ground when they came out of the earth. (photo: W. Schiefenhövel)

Fig. 4   Holy stone of the Eipo (West Newguinea). After the oral myth such stones were brought by the first ancestors to stabilize the ground. They are stored as ceremonial object in the men's house. (photo: W. Schiefenhövel)

Fig. 5   Ceremonial shield (gope, kope) of a men's house near Kosarek (West Newguinea). The head motive represents a guardian spirit. (photo: I. Eibl-Eibesfeldt)

district in the same province the facades of men's houses are decorated with stylized ancestor masks (Eibl-Eibesfeldt and Sütterlin 2008: Fig. 487).

Similar examples, especially for the ancestry poles, are found in the Asmat district (Papua Province), the Cook Islands, the New Hebrides and the Northwest of America (Lommel 1962). The Asmat poles form the substantial centre of rituals and are carved out of a single mangrove trunk. The ancestor poles in British Columbia (Fig. 6) are also famous.

The ethnographic literature more or less insists on a non-personalized interpretation of the term "ancestor" (Leuzinger 1985; Helfrich 1995). According to Helfrich (1995: 179), only some figures of the Central and Northwest Asmat are held to represent distinct forebearers. Some of the figures are even destroyed after use. In general the identification with a personified deceased person is not intended. Leuzinger (1985: 23, 77) argues for a more generalized meaning of first parents ("Ureltern, Urahnen") in the sense of high-power emblems and protection figures; similarly Helfrich (1995: 162). Ancestors in this sense designate belief in common roots. In a similar manner as in the joint initiation of young men of different communities in West New Guinea, it is a fictional relationship based on putative common origins. This ritual kinship enhances group cohesion. The figures are usually presented frontally; they show non-personalized facial features and a rigid expression. Pronounced starring eyes – sometimes with inlaid gem stones – bared teeth or even a protruding tongue often contribute to an appeal that inspires awe and respect rather than identification (Figs. 7 a, b).

Cultural codification is another characteristic of sacred objects. We find a kind of abstract symbolism in the ceremonial shields of the Launenang and other Mek-Speakers near Kosarek (Papua Province). The shields symbolize the ancestors. Multiple red and white parallel lines define two lateral fields. Each line represents a foodstuff: tree-kangaroo, yam, pork *etc.*, and the cross-lines above and beneath stand for marsupials. While carving the symbols the carver speaks significant words for each line, requesting food support from the ancestors. This activity shows all the attributes of a magical act (Heeschen 1994).

As a side effect, this contributes to the hermetic character of the ritual knowledge. The more the semantics of sacred objects is visually codified *i.e.* not evident to an extended community as are figurative representations, the more this knowledge becomes the exclusive mental property of a group and adds to its coherence.

Marilyn Strathern, in a contribution to the Conference of the European Society of Oceanists (1994), expressed her doubts about the exclusivity and persistence of ceremonial households in traditional cultures today. There are too many changes in access and availability to allow exclusive adherence to descended forms. She argues that the trend rather promotes hybrid formations of artefacts and style. Such a trend would include their role as identity markers. The comment of Maurice Godelier on this occasion (1994) defended the persisting presence of traditional ceremonial sites beside a growing market for modern technologies in the profane and private household.

The post-modernist interpretation of fluctuating identities in all cultures (*e.g.* Strathern) includes observable trends in traditional cultures but not their entire substantial repertoire of customs and conventions. And certainly it ignores the factor of *style*.

Style is yet another sensitive marker of cultural difference as well as of cultural unity. Style specific to the group underpins the claim to a unique history and rights to a particular territory. This often combines with a distinctive style in performing rituals and handling artifacts. Adornment, tattoos, dress and hairstyle can be cultural markers. Groups tend to develop not only motifs, but a certain identifiable manner of formulating and refining them. People of the geographical area of New Ireland in the Bismarck Archipelago (Papua-New Guinea) for instance shaped a highly concise type of coloured carvings, called Malanggan, that reveals their provenance. As they regularly accompany funeral ceremonies some of their invariable appearance is due to their protective function. Slight differences in style signal affiliation to particular classes or clans (Helfrich 1973), but the overall look is identified with the whole area. Asmat shields cultivate a very distinguished pattern of stylized motifs that makes them unmistakable within the southern region of Papua Province. The basic motif is a squatting figure piled up into a highly decorative meta-structure (Lommel 1962: Fig. 76). And the canoe boards of the Trobriand Islanders (Papua New Guinea) can be read as a series of letters from an indigenous alphabet of decorative and apotropaic forms (Scoditti 1985; Eibl-Eibesfeldt and Sütterlin 2008: 199).

Style is probably the most refined and flexible visual instrument for expressing identity. This is also true in modern societies in the form of corporate trademarks, such as those of Coca Cola and Shell. They remained – deliberately, as one knows – unchanged for decades so as to transmit the identity of the product or company. Style of course can also convey information about social rank, social connections or individual distinction within a specific group. These messages however are only readable in the context of a basic pattern known to all members (Wiessner 1984). Style communicates affinity with a specific group and at the same time social and personal distinction within the group.

Fig. 6   Ancestor's pole on Vancouver Island (British Columbia). Identification object and meeting place for North American Indians. (photo: I. Eibl-Eibesfeldt)

The Social Construction of Group Identities: Identification by Symbols

To link shared knowledge to the myth of common ancestors represents a universal social technique. The mythical origin and domain of territory serves to establish a fictive kinship system that binds heterogeneous groups. M. Strathern's (1994) assertion that cultures were never pure, is correct, but ignores the fact that individuals voluntarily identify with specific groups or cultures and deliberately "define" these as coherent unities, distinguished by common ritual histories. The unity of cultures is a human concept. And identification often relies on construed symbols (Eibl-Eibesfeldt 1998; Sütterlin 2000).

The technique of collective initiation ceremonies in West New Guinea mentioned earlier functions to affiliate members of different groups to common ancestors and thereby to construct alliances of

Fig. 7   a) Interior of a men's house of the Asmat in Papua Province (West Newguinea). (photo: G. Konrad [with friendly permission], b) Female squatting figure as a ceremonial carving in the Waitangi Meeting House (Maori, New Zealand) in the 20th century. (photo: I. Eibl-Eibesfeldt)

kinship among them. The neighbouring Eipo and Yalenang count themselves among the larger Mek language group. Similarly the Yanomami Indians of the Upper Orinoco in Venezuela cultivate an extended definitional kinship system that relies on real and fictive relatives. Adoption is a customary practice that binds unrelated people into families or clans thereby defining exchange partnerships beyond the confines of kinship (Eibl-Eibesfeldt 2004: 840). Relational terms are used to establish relationships in the sense of reciprocal ties or affiliations. As Lévi-Strauss (1981) pointed out as early as 1955, kinship becomes a kind of symbolic idiom in the service of identification.

Larger societies, too, draw upon fictive kinship as a means to build solidarity. For most of their existence humans lived in small kin-based groups that demarcated themselves from other groups and with which they competed for resources, though alliances did occur (Eibl-Eibesfeldt 2004: 410-415, 839). Within concurring small groups those had benefits that were able to bind more individuals into a solidary community. Groups could benefit from binding with other groups for mutual defence or trade. These alliances were useful in war, exchange of marriage partners and social networking (Eibl-Eibesfeldt 1998). The *!hxaro* system among the Bushmen mentioned earlier shows how altruism can emerge from reciprocity (Trivers 1971). The Himba (Kaokoland, Northern Namibia) cultivate a similar exchange system called Okuumba. In the arid and semi-arid zones access to game resources and plant food is vulnerable to drought. Clan-specific exchange networks provide vital means of risk-sharing equivalent to modern insurance policies (Wiessner 1977; Eibl-Eibesfeldt 2004: 416-418). Likewise Yanomami Indians, who live in the South American rain forest as foragers in transition to horticulture, allow specific clans (and persons) of other groups to use their territory for foraging in case of shortage, and these alliances can be hereditary via father or mother (Herzog-Schroeder 1993). These overarching systems across groups do overcome the weakness of small kin-group organization, but they do not constitute a coherent solidary collective.

When in the transition period to the Neolithic Age arable farming allowed for new and more efficient subsistence strategies, ecological dominance was reinforced and denser forms of settlement resulted. Populations grew and dominance and leadership structures arose to exert social control in place of earlier informal practices based on individualized relationships (Eibl-Eibesfeldt 1998: 91-92). It is generally assumed that preferred group size is limited to around 150 because this allows group members to remain familiar with one another (Dunbar 1993). Yanomami groups reaching that number typically split in two, each with its own headman (Eibl-Eibesfeldt 1998: 92). The new group seeks a new territory.

Group size became a factor for defence as well as for conquest. The advent of farming and herding caused populations to grow, which increased competition among groups. As local numbers surpassed 150, the resulting social anonymity broke down familiarity and fostered ruthlessness. The establishment of laws and legal force mitigated internal strife but new means were needed to create solidarity in larger communities. As the rising ethnic groups were not based on traditions of kinship, dominance structures (hierarchies) were institutionalized to enforce norms (Eibl-Eibesfeldt 1982; Salter 2007). Shared ideologies (indoctrination) or religions could serve to induce obedience and identification (Salter 1998). Social fealty could be high even if belief systems were repressive, as recorded from early regimes in Assyria or Mesoamerica. Readiness for subordination, even fear as a motive for attachment and obedience are old phylogenetic inheritances (Eibl-Eibesfeldt 1970; Rajecki 1978) and derive from nurturing dominance structures (Eibl-Eibesfeldt 2004: 423).

Familial values were relevant in other ways, for loyalty and trust in larger societies can build on the ethos of the family and small groups. In Western societies "fatherland" and "mother country" are terms still in use. Members of ethnic groups are sometimes addressed as "brothers" and "sisters" in order to fuel patriotic affinity among them. Individualized maternal care was a keystone in the evolution of pro-social behaviour (Alexander 1974; Eibl-Eibesfeldt 2004: 235, 845). Drawing on older binding mechanisms can help to overcome mistrust in anonymous societies (Eibl-Eibesfeldt 1994; Atzwanger *et al.* 1998; Salter 2005) and build up identification structures, but with all the dangers of nepotism (Flohr 1994; Butovskaya *et al.* 2000).

The Coherence-functions of Cultural Memory

Building solidarity or social unity on common cultural knowledge and memories has been a theme of an earlier chapter. Evidence of ancestor worship could be found in monuments and memorials worldwide. Egyptian monuments glorify the doings and power of the god-kings, evoking their divine origin and sacral grandeur. The displays of power served to intimidate their own people – by preventing internal rebellions – as well as to ward off external enemies. Furthermore, a strong leader promises good pro-

tection. As mentioned, fear and respect can motivate strong attachment. In ancient Greek and Rome philosophers, poets and heroes were commemorated alongside the emperors, since the emperors were no longer god-like. In all European cultures we cultivate our collective memories in stone up to the present day – Bismarck, Radetzky, Mozart, Beethoven *etc*. – and especially in the national uprisings of the 19th century a boosting memorial culture spread all over Europe (Kapner 1973; Botz 1997; Michalski 1998). In the 20th century also pictures of leaders commonly hung in offices – from Roosevelt, Emperor Franz-Josef, up to Walter Ulbricht – to imprint authority on the minds of employees.

Jan Assmann has explained the connection between cultural memory and self-images of societies that qualify for durable identifications: "Societies imagine self-perceptions and continue over successive generations an identity while developing a culture of memories" (2000: 18). As we all know, memory is highly selective, and what Assmann further calls *mémoire volontaire* circumscribes the construction of a memorial culture apt to establish a coherent self-image with which members can identify. This performs like rituals that confirm parts of myths or history as reality in the present. While monuments reinforce tales and history in urban spaces, rituals invoke them in temporal structures (Boesch 1983; Sütterlin 2000, 2006). As Etienne François and Hagen Schulze (2001) pointed out in their monograph on German memorial sites, these places are first myths in the minds of humans before they are made manifest at specific locations. The localization of the historical and mythical memory may occur in a chosen place – in Aspern, Austerlitz or the Amselfeld –, and for the famous Loreley a prominent spot on the Rhine was chosen. A boom of national symbols and monuments in Germany was evident after reunification, when people of the East and West had to learn new forms of identity. This process seems to be facilitated by myths and objects of a common collective identification. The Brandenburg Gate in Berlin will remain a monument of high symbolic value for the foreseeable future. And memorials can be seen as objects with a topographical claim by virtue of occupying urban or local territory.

It seems that as the growing number of allied communities made personal communication impractical, symbols were needed as intermediary platforms to signify agreement on common affairs and fundamental matters (Bruckmüller 1997: 12). The reunion in former men's houses or meeting places revealed primeval strategies in presenting figures of memorial cults and of identity. Members of a group agreed upon a common understanding of rules and norms that organized social life, and symbols and rituals had a unifying effect based on familial dispositions (p. 161-163). Heraldic emblems, flags, traditional costumes, customs and rituals are more recent inventions for demonstrating conformity.[2]

While the media in modern societies succeed in binding our attention and rational reflection on subjects of common interest, symbols – more effectively but with dangerous potential – bind our emotional attachment through merely hermetic affective symbols. Songs and hymns have a similar effect. They praise the homeland, heroic group values and often attune or indoctrinate against other groups – as the repertoire of battle and soldier's songs indicate.[3] This can escalate into irrational commitment. A Russian saying cited by Konrad Lorenz (1963: 362) says: "When the flag is waving, reason is in the trumpet." The human capacity for indoctrination consists exactly in the ethos of individual self-sacrifice for the culture or group and is exploited in this respect by propaganda: "Die Fahne ist mehr als der Tod" ("The flag weighs more than death")![4] The capacity for indoctrination in values of family cohesion and defence can be a source of exclusion, ethnocentrism and violent intolerance (Eibl-Eibesfeldt 1998). Residents of the Crimea celebrated the political return to Russia in 2014 with Russian folksongs and the raising of pro-Russian flags.

With the increasing size of societies and nations the symbolic repertoire became more abundant. Austria with its multi-ethnic history of empire provides a prominent example of a culture of monuments and different emblems meant to bind diverse peoples (Stourzh 1990; Bruckmüller 1997; Sütterlin 2006).

In Vienna we find as well the corona of the Holy Roman Empire serving as the Austrian Emperor's crown – which was never used to crown a single monarch – and again the crown of the Austrian

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[2] Flags of the enemy are the first things to be burned or destroyed when a nation is defeated after conflict – similarly to the ceremonial objects in traditional cultures. *Vice versa*, flags are hoisted and even kissed in case of victory. And the debate about the ban of wearing a Muslim's headscarf for teachers in some German federal states raises exactly the argument that the headscarf "is not compatible with Christian values" (Official News from 17.3.2015). The scarf then is treated like a symbol.

[3] When the German hymn was played the first time a high German representative (Konrad Adenauer) visited the US (represented by Dwight D. Eisenhower) in Arlington after Second World War (1953), the act was perceived with high emotions and interpreted worldwide as a final symbolic recognition of Germany as an equal partner by the allied victorious powers.

[4] From the refrain in a song composed during the Nazi era. The text indoctrinates the weight of group values against individual values.

Fig. 8   The double eagle (Doppeladler) is known as a heraldic symbol for the Austro-Hungarian Dual Monarchy. It's represented allover the Austrian Republic as a symbolic cultural memorial. Here on a church in Tulln (near Vienna, Austria). (photo: C. Sütterlin)

country, the Dukes-Hut (Bruckmüller 1997). The doubled Eagle (Doppel-Adler) however was the heraldic sign of flags fixed on official buildings (Fig. 8). The emblems became so specific because they needed to be differentiated from other symbols and functions within the same political frame, and the complexity and hierarchy of their meanings are well mirrored in the memorial culture. Monuments with relevance to political issues of European history are usually placed in the inner part of cities, whereas personalities or events with national importance are represented all over the town. Representatives of artistic culture mostly find a more intimate place in parks or near the institutions where they have been active – and there we may even find evidence of people's personal sympathy and identification such as flowers and personal messages (Sütterlin 2006).[5]

Towards Symbolic Communication in Large-scale Societies

If awe and respect are attitudes evoked by ceremonial objects among members of small traditional societies, the same holds true for symbols in post-modern societies. The two bronze lions flanking the royal residence building in Munich are the subject of daily touches by people passing by. The lion's faces are already polished smooth. Asked why they do this, people answer mostly "for good luck". Symbols of identity promise protective effects and the transfer of such by touching is recorded as an old magic practice. However, old documents safeguarding local rights including territorial claims are rather less accessible and locked up in City Halls – not without some parallels to religious practices where the venerable relics of a saint (of the church or region) are stored as untouchable in a most remote sacred place.

Hermetic demarcation can be found in sacred sites worldwide. It is balanced by quite different territorial attitudes to the marking of borders. Again, an interesting example can be found in the rich monumental tradition of Vienna. While ceremonial and official memorials, as mentioned, are placed predominantly in the centre of town, the margins of Vienna are littered with wayside crosses and pious columns that are signs for popular devotion. Often no more than a simple cross or pillar under a wooden roof, they invite moments of prayer and worship. In a wider sense they can also be seen as marking Christian territory and as such – formally as well as functionally – continuing a longer tradition.

On the borders of occupied or legitimized territories a different tradition of monuments took shape in the early history of Europe. As reported in Eitrem (1912) and Lullies (1949/50), simple piles of stones were used to denote boundaries and fields in ancient Greece. In a later form the piles were topped with a figural iconic pillar in the form of a bearded phallic man. Herter (1954) sees their origin in Asia Minor where a phallic figure named Priapos was cultivated as a patron saint for fertility and protection, the latter especially near graves. Its anatomic features combined with its position on territorial borders or places worth protecting nurtures the presumption that the tradition was not a random one. The simple stone piles often took the shape of an erect phallus, and the custom of demarcating borders that way finds parallels throughout Europe and beyond. Phallic stones and pillars were customary symbols in Brittany, Sweden as well as in Ethiopia (Charrière 1970: Figs. 61, 62). As menhirs they served as ritual stones, often near burial grounds (Eitrem 1912) or as demarcations of frontiers (Herter 1954). The perception of a semantic that consistently includes distancing and even intimidating aspects seems to be rooted in older layers of communication (Eibl-Eibesfeldt and Sütterlin 1992). Non-human primates use phallic threat as part of ritualized male dominance behaviour (Ploog and MacLean 1963; Wickler 1966) and human

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[5]   How effectively symbols can bind people into virtual coherence and solidarity may be seen in the emblems of certain clubs (football, dog breeder *etc*.) today. The more an emblem shows an exclusive character as a sign or logo, the closer members probably will fit in. A national flag will bind more people in numbers, but presumably in less intense devotion in daily life. Flags and national symbols usually have their entry in situations of danger, victory or defence.

social rituals and customs seem to have adopted the symbolism of the behaviour (Vanggaard 1971; Fehling 1974). Figures with phallic display belong to a worldwide repertoire of protective apotropaic figures, even on exposed parts of Christian churches (Eibl-Eibesfeldt and Sütterlin 1992).

There are other dominance displays of course serving the symbolism of territorial defence. In many cultures facial expressions of repulsion or threat (like protruded tongue or bared teeth) or gestural signs of resistance and direct aggression (holding up the hands or brandishing weapons) characterize figures that have protective significance. Huge stone idols set around graves near San Agustin (Colombia) with their exaggerated display of teeth serve as guardian statues (Broadbent 1985), and are as impressive as female figures (Rangda) guarding the entrance of Hindu temples in Bali (Indonesia) with their upraised hands, long hanging tongues and bared teeth. Male figures often bear weapons (Fig. 9). All these display behaviours reappear in charm-figures like amulets and talismans (Hansmann and Kriss-Rettenbeck 1966).

Impressive and even awful expressions are features of ritual figures serving the ceremonies of internal worship service. They often show a rigid expression that inspires awe and high respect. Dominance structures and hierarchy certainly play an important part in assembling people of a group to join and even unify in the sense of corporate identities (Salter 1998). Keeping foreign groups at a distance however was the task of monuments at the frontier. And while the symbolism of sacred objects may talk in an indigenous language based on knowledge that is hermetic and learned or even indoctrinated, peripheral sculptures present often a symbolic language that can be understood intuitively by other groups (Sütterlin and Eibl-Eibesfeldt 2013). Unsurprisingly, monuments of identity are often the first symbols to be destroyed by a conquering group, as actually seen in Nimrud (Iraq).

Fig. 9   Female figures like the famous Rangda are posted as protective spirits in front of Hinduistic temples in Bali (Indonesia). They show all kinds of apotropaic gestures like huge teeth, upraised hands and a widely protruded tongue. Here an example from Pura Dalem Sidan. (photo: C. Sütterlin)

The Role of Symbolic Pictorial Language in the Neolithic "Urban" Space

In the Neolithic complexes of Çatalhöyük, Nevali Cori and Göbekli Tepe the presence of sculptures and reliefs representing predators of considerable size is prominent. In Çatalhöyük huge horned heads of bulls are known from shrine VI and VII, and two relief figures (shrine VII), probably female, with spread legs and upraised arms (Mellaart 1967: Figs. 23, 33, 37). Mellaart (1967: 82) points out that these sculptures and reliefs "had a ritual significance and were not purely decorative". In Nevalı Çori a panopticon of sculptured birds with big beaks, and a stone pillar composing hybrid figures of humans and birds above each other are reported (Hauptmann 1991/92; Schmidt 2006). The pillar is perhaps a prototype of the ancestor poles known from the Pacific Northwest American people already mentioned. Certainly, these representations were not arbitrary decorations, but rather served ritual functions. Smaller clay and limestone figurines show a feline (lion's) head with prominent teeth and ithyphallic human beings. The emphasis on wild and untamed animals in a period where animals were possibly seen and held as livestock seems notable. Economic aspects evidently did not play a prior role on the semantic level.

The presence of sculptures and reliefs representing predators of considerable size is even more evident in the early Neolithic site of Göbekli Tepe. There the variety of monstrous and most stunning wild beasts surpasses all expectations. Huge snakes and scorpions, wild boars with bared tusks, foxes and lions belong to the wide range of the repertoire of sculptures (Schmidt 2006: Figs. 59, 60, 64). Human representations are almost non-existent, if we exclude the Urfa statue of a man, excavated near the site (Schmidt 2006: Fig. 93), the engraving of a female person with spread legs from layer II (Schmidt 2010: Fig. 13) and the headless male with erect penis of 40 cm in height on a pillar of layer III (Schmidt

2006: Fig. 28). Another phallic stone-remain, 24 cm in height or length, raises questions of a monolithic construction (Schmidt 2006: Fig. 79). Describing these in terms of decorative representations would indeed be of no help in seeking an interpretation. The site is described as place where the relics imply ritual rather than dwelling functions (Schmidt 2006: 112).

Cultures, as mentioned before, need more than oral myths about land and land origin. They use distinct selected places and monuments for the cultivation of their collective memory. Still, thematic preference for sculptured wild animals of considerable defensive power favours some explanation. Klaus Schmidt (2006: 158) speaks of animals "in an aggressive posture" and classifies them as a "dangerous phenomenon". The impression is reinforced by the many snarling features in the animals, as in the relief of a crouching predator from pillar P27 (Schmidt 2006: 95-99; Benz and Bauer 2013: Fig. 3), the sculpture of an "unidentified quadruped" (Peters and Schmidt 2004: Fig. 22), and other partially damaged sculptured animals like the one shown in Schmidt 2006 (there Fig. 29). Schmidt (2008: 65) speaks of symbolic guardian figures. Similar features are known from other figures as mentioned, and even from Romanesque churches throughout Europe (Fig. 10). They belong to a wide sculptural program of seemingly grotesque representations beyond the classical canon of Christian iconography. For the most part they are placed in the periphery of the buildings, and their averting/protecting function and symbolism has become part of a broader academic discussion (Sütterlin 1989; Eibl-Eibesfeldt and Sütterlin 1992; Schmidt 2013).

The impression of an assembly of power symbols seems inevitable (Benz and Bauer 2013), but the magic quality of powerful, surreal representation is not restricted to sites in Neolithic Anatolia. Palaeolithic caves in southwest France reveal similar representations of highly impressive symbolic value: images of rhinos, aurochs, bears, wild horses, cougars – and furthermore of single hands, vulvas and phallic men (Leroi-Gourhan 1971; Chauvet *et al.* 1995). Magic thinking, fear and the veneration of superior powers are not inventions of the Neolithic Age and neither is the need for defence. The civilizing achievement of larger cities and communities with clear references to territorial borders required not only symbols with a higher potential for social cohesion, but a higher degree of protective power.

Territoriality appears to be still a factor in modern societies (Grosby 1995). Borders of territories might be the result of military aspirations and conquest. They may even inspire new conflicts. They have, however, an organizing effect. Where boundaries are established, new identities and alliances may arise. It is considered a human peculiarity to form alliances beyond and on the base of group limits (Eibl-Eibesfeldt 2004: 412). The Bushmen of the Kalahari are an example. As long as the territorial rights of single bands are respected, exchange networks will operate (Sütterlin and Eibl-Eibesfeldt 2014).

Nowadays, mostly culture decides what constitutes the identity of a group: religion, language or a political conviction. Within political borders Europe may be the result of many of such factors including a long history. Symbols of a higher incorporation emerged like the European flag that is often posted alongside the national flag. Hence each European citizen holds at least two levels of identification. Even more levels are conceivable on the base of a graduated identification (Fig. 11). Such identities can contribute to a worldwide understanding even if the identities on the higher level are less vigorous. At special occasions, Beethoven's ninth symphony is intoned in Japan nearly as often as in Germany. We interpret

Fig. 10   a) Wild beasts (pigs, dogs) serve as protective symbols on facades and other exposed places in churches. Bare teeth are a widespread apotropaic (protective) motive as to threaten away spiritual enemies or intruders. Example from the parish church in Plougonven (Bretagne, France). (photo: I. Eibl-Eibesfeldt, b) Scene from a frieze near the entrance of Nicholas Chapel (ca. 1200) in Freiburg Cathedral (Germany). The motive of bare teeth reinforces the threatening character of the scene. (photos: I. Eibl-Eibesfeldt)

this fact more as a sign of recognition based on common values than of colonization. And this again may contribute to a growing international solidarity. Gradually and finally, the ethos of smaller groups can be transferred to larger groups (Eibl-Eibesfeldt 2000: 101).[6]

The appearance of new rituals, such as the occupation of public places and candlelight chains in larger cities, may appear more popular than political. Symbolic actions demonstrate the union and consensus in non-party concerns of peace and ecology. Their emotional appeal is high and certainly binds even more people than political marches. But the social compound often remains unstable. The alliance of rituals with solid sculptural monuments of cultural memory has proved to be the ones that remain the objects of further investigation.

Fig. 11 Swiss flag and Cuban flag in a hierarchical combination as a personal confession of the landlord. Ticino (Switzerland). (photo: C. Sütterlin)

Acknowledgements

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[6]   The same is true for armed conflicts. War is a cultural product on the base of biological dispositions that emerged on an inter-group level. On the other hand, humans are the first and only species able of completing peace agreements (Eibl-Eibesfeldt 2004: 587).

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Religion and Materialism.
Key Issues of the Construction of Neolithic Corporate Identities

Lisbeth Bredholt Christensen[1]

Abstract: In this article I will argue that the human obsession with things and the projection of super-natural power onto certain of these things is a historical (rather than biological) fact which can be related to the construction of corporate identities in the beginning of the Neolithic. And just as these events happened and were the start of a long development, so they may also have an end. Neither materialism (understood here as the obsession with accumulating things) nor religion are biological features of being human. Contemporary society is witnessing an increasing secularism as well as a post-materialist trend. The article suggests that these tendencies link modern urban society with those of contemporary hunter-gatherers and therefore support the argument that religion may be a passing phenomenon in the history of humanity.

Keywords: post-materialism, corporate identity, Neolithic, hunter-gatherers, origins of religion

Introduction

If indeed – as it was suggested in the outline of the ICAANE-workshop – we can speak of a construction of corporate identities in the (Early) Neolithic, the question is to which degree these can be said to be related to religion. Communally enacted rituals, feasting, and belief systems have played and play a fundamental role in creating and enforcing commitments and loyalties to people and to places in historical times (*e.g.* Rappaport 1999). Archaeological findings point in the direction of feasting on large animals since the early Neolithic (*e.g.* Benz 2006; Hodder and Meskell 2010). Yet, can we speak of religion in Neolithic communities? Did the new forms of subsistence systems and the emerging production and accumulation of things in any way relate to what we today understand by religious concepts (Christensen and Warburton 2002)? Can we suppose the birth of goddesses at the dawn of farming, as Jacques Cauvin (1994) suggested twenty years ago? In order to throw light on these questions, the following chapter will discuss the concept of religion and its relation to collectivities and material culture.

Post-Materialism

In contemporary society, we are virtually drowning in things. From the generations before us we have learnt that possessions means wealth, and more possessions mean more wealth (*cf.* Warburton 2003). As wealth has, for the past thousands of years, equaled societal prestige and status, the consequence is an accumulation beyond measure (Tilley 1999; Fig. 1).[2]

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[2] The photo by JeongMee Yoon illustrates with great humour an exhaustion towards possessions that I think most of us can identify with.

Fig. 1   Since the Neolithic we have produced things in an ever accumulating speed. The world today is full of things and we collect them. Yet, in the period from the origins of the human species until the first settled communities, the possession of things seems to have played a minor role in human life. Materialism seems to be a cultural feature rather than a natural one. (by courtesy: JeongMee Yoon, The Pink Project – Seowoo and Her Pink Things, Light jet Print 2005, Asia).

Yet, more recently, a post-materialist trend goes against the principle of accumulation and consumption. In advanced industrialized societies, where people's basic needs for a home, an outcome, and a future are fulfilled, the new needs and prestige values are immaterial: time, freedom, and close relations (*cf.* Inglehart and Welzel 2005). In large cities where space is costly, the new modern is to live in small apartments with a minimum of personal goods. Sharing cars, gardens, and lawn mowers, doing urban gardening in public space where everybody is allowed to harvest the fruits, and living out the principle of "less is more" seems to be one mark of the future. Interior designers speak about space optimization and urge people to sort out in their possessions and to dispose of everything that has not been in use for the past year.[3] There is an urban longing for a simpler life which some achieve by cutting down on their consumption (a googling of *e.g.* "minimalism", "small living", "simple living", "compact houses" gives some examples).

The photographer Joakim Eskildsen (born 1971) describes his childhood in Denmark in the 1970s as characterized by consumption. Today he lives in Berlin as a celebrated artist. His photos of *i.a.* Romas and of his children show a simple world (not materialistic, but featuring humans in contact and nature). He describes his past and his hope for the future this way:

"My parents lived in a single-family house where the TV turned 10 cm larger every year. When one neighbour bought himself a fountain for his garden, everybody in the street also bought one for theirs. My parents belong to a generation that firmly believes that the world can be saved with more and better machines. I did not experience my childhood as particularly balanced, but I had a grandmother who lived in a small house and cultivated her own vegetables. For me, she is a symbol of the future. The life of my grandmother is what the world needs today." (Joakim Eskildsen 2015; my translation)

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[3]   A more spectacular example of what nevertheless seems to constitute a trend is Jeff Wilson, University of Texas, who lived for a year in a container of $3{,}1\,m^2$. Before moving into the container, he sold his books and furniture for one dollar a piece. He enjoyed the year. See http://dumpsterproject.org/. Another example is Andrea Heilskov, a Danish journalist, who gave up her job, sold her things, and moved with her family into the Swedish woods where they now live self-sufficiently (supplied with income from her popular blog describing their primitive life…: http://andreahejlskov.com/).

"To do without" is the new black. "Hast du was, bist du was" has been changed to "Haste nix, biste was".[4]

A life style characterized by a minimum of possessions is not new but known also from contemporary and past hunters and gatherers. Describing contemporary hunter-gatherers, Wilson (1988: 52) mentions the following characteristics of this particular way of life:

"It seems to be an ideal of hunter/gatherers to strive at all times to achieve and maintain their independence.[…] This will ensure that neither competition nor cooperation will become significant features of social life. It will also generate other regular features of hunter/gatherer life: the prevalence of the exit option, the reliance on affection to sustain and disaffection to terminate relationships, the abandonment of the lame, aged, and infirm, and the making of public decisions by tacit consent."

Although there are several features here that mark a difference between a hunter-gatherer life and a modern, city-life, some similarities spring to the eye: the focus on independence, the possibility for the individual to leave communities and relationships, and that intimate relationships are built on sympathy (rather than on agreement). These features differ from life in settled, rural contexts, as well as in historically earlier, urban contexts, where the options of the individual were to a much larger degree bound to, and determined by, family and tradition.

In several ways, postmodern urban life and post-materialism seem to have more parallels to a hunter-gatherer way of life – always ready to move on, feeling comfortable everywhere, sharing rather than possessing – than to the kind of settled life style that has made up the model of living for the past 10,000 years in many parts of the world. The new freedom from things is linked to other phenomena that also parallel a hunter-gatherer life more than the settled one: serial monogamous or polygamous relationships and patchwork families (rather than lifelong marriage with the same partner of opposite sex), as well as a large degree of individual autonomy (making decisions on the basis of gut feeling and individual drive rather than according to family tradition or predetermined norms). Likewise, we increasingly live in a flow where the world is constantly changing; this means that survival and success depend on being able to drift and to adapt to the environment and on being flexible (like the hunter and gatherer) rather than to insist on permanence and tradition (as are the principles of a settled community).

Spirituality and Religion

When it comes to religion, today people tend to believe in "their own way" and in "their own god" (*e.g.* Riis 2013; Jensen 2014, chapter 7). This way, or these gods or divine figures, do not necessarily correspond to canonical prescriptions but instead mix traditions. The word "spirituality" has come to the fore, as a more including and individually oriented concept, more apt to describe modern relationships to the "other world" than the word "religion". Another popular term among sociologists is "implicit religion", indicating that extraordinary experience today is often found outside those institutional and authoritative contexts where one would traditionally expect them to be (*e.g.* the journal Implicit Religion: http://www.implicitreligion.org/; Lee 2015).

Characteristic for modern spirituality or implicit religions is that people feel something – typically energies or emotions – more than they are being told what to think and do. Experience is in the focus rather than teaching. Likewise, modern spirituality is characterized by being relatively un-organized and taking place in the mind rather than demanding a particular attitude or social action (*e.g.* Forman 2004; Heelas and Woodhead 2005; Riis and Woodhead 2012; Lee 2015). Generally, individuals are their own authority concerning what and how they believe.

This brings to the mind more the mindset of hunters and gatherers than that of settled peoples. Religions, as we have known them the past 5000 years among settled and urban peoples, all evolve around some sort of authority, characterized by special buildings, special feasts at special times, special cultic personnel, special actions (offerings, prayers, other rituals) to be undertaken by worshippers, as well as more or less special teachings to be adopted.

On the contrary, hunters and gatherers are known for valuing independence and autonomy, trusting their own experience rather than what is being taught (*e.g.* Wilson 1988; Ingold 1999; Willerslev 2007). This is the case not only in terms of hunting but also what concerns the spiritual world. When the ethnographer Rane Willerslev asked a Siberian hunter whether he believed in spirits, he answered

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[4]   http://www.spiegel.de/panorama/gesellschaft/minimalisten-haste-nix-biste-was-a-773718.html

that he believed only in those that he had met himself; all others might exist or they might not exist (Willerslev 2007: 160). Thus, the existence of spirits is taken not as an objective fact but as a personal experience. Furthermore, the experience remains personal and is not collectivized. And no cult is being instituted following the experience. What the modern hunter-gatherers show us is that spirits, visions, or extraordinary experience need not be related to the communal and/or to religion. Thus, their example forces us to question whether we in fact project religion onto them because a religious human being is what corresponds to our idea of the world (*cf.* Rappaport, Renfrew, and Donald below). Their example forces us to question whether all peoples in the world actually have religion.

To conclude this brief overview of modern communities: although a generalization, it may be safe to suggest that individual identities dominate among hunters and gatherers as well as among post-materialist city-dwellers, whereas corporate identities is a particularly characteristic feature of settled farmers and traditional urban dwellers.[5]

One central means of constructing corporate identities is religion. And this is where we come back to the Neolithic and the issue of the ICAANE-workshop. In the following, I want to draw attention to two points. One is the beginnings of religion, and the other is the character of religion.

Does Religion and Humanity go Hand in Hand?

One central question in the study of religion and elsewhere is whether religion is simply a part of being human. In fact, this has been the general assumption for generations. The scholar of religion Mircea Eliade coined the term *homo religiosus* and maintained that humans turned human only at the moment they opened themselves for the holy (Eliade 1956). Although the idea of an objective existence of the holy met widespread scholarly criticism, his assumption of a given human relation with supernatural beings was generally accepted. Several archaeologists, anthropologists, and scholars of religion share at least the contours of this opinion, such as for example Roy Rappaport, to whom "[…] it is hard to imagine that religion […] is not in some way indispensable to the species" (Rappaport 1999: 1-2).

With the upsurge of cognitive science and interest in human evolution since the 1990s, the theory of religion as closely linked to humanness as such has achieved further support (*e.g.* Geertz 2013). In his attempt at explaining religion, the cognitive anthropologist Pascal Boyer (2001) suggested religion to be a byproduct of human evolution. In his optic, not everybody is religious, but the cognitive templates for religion – in the sense of the ability to attribute life and agency to non-living things – are hardwired in humanity as such.

It is important to note, therefore, the cultural aspect which is linked to the neurobiological. To Boyer, religion is not a phenomenon *sui generis* and did not appear "fully fledged" or "as itself". Instead, Boyer (2001) maintains that the phenomenon we know today consists of several different building stones that did not all originate at the same time. The linkage of several (but not necessarily all) of them makes up what we now call religion (also Taves 2011).

Likewise, on the basis of *i.a.* Pascal Boyer (2001) and Justin Barrett (2004), the scholar of religion Armin W. Geertz suggests religious behaviour to have evolved gradually, in a cooperation between brain and culture, assuming that the cognitive preconditions for religion were there already with *Homo erectus* (Geertz 2015: 391). With a similar theoretical basis, Colin Renfrew sees the roots of religion in what he assumes were rituals that took place at Blombos cave about 70,000 BCE (Renfrew 2009: 8).

Still, in this evolutionary perspective, prehistoric and modern hunter-gatherers are being put on the same footing, as both having a mythical world view:

"In Paleolithic cultures, and in aboriginal cultures in general, the entire scenario of human life gains its perceived importance from myth; decisions are influenced by myth; and the place of every object, animal, plant, and social custom is set in myth. Myth governs the collective mind." (Donald 1991: 26 quoted in Jensen 2014: 45)

According to Donald, what can be said about aboriginal cultures and modern hunter-gatherers goes also for the Palaeolithic. Although religion and myth are not synonyms, Donald implies in his work that myth is part of religion. Common for the cognitive approaches is that religion is taken as a universal fact linked to humanity.

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[5]   *Cf.* on personal identities as historical constructs *e.g.* Carrithers *et al.* (1985); Mauss (1985 [1938]); van Huyssteen and Wiebe (2011).

Exactly this point of view has, however, been thrown in doubt by others. For example, Talal Asad (1993) criticized religion for being a western construct which does not fit onto oriental or early cultures. Agreeing with this point of view, Maurice Bloch (2010) sees no evidence for religion at Çatalhöyük but maintains that religion as a phenomenon is not older than 5000 years. A similar claim was proposed a decade earlier by Michael Parker Pearson (2001: 217), according to whom: *"One of the least supportable but most frequent claims is that people worshipped gods and goddesses in human form prior to the fourth millennium BCE."*

and

"Organised religion is neither a necessary nor an eternal element of human spirituality."
The implication of these claims of Parker Pearson is that
1) Religion and spirituality, dogma and the collective on the one hand, and experience and the individual on the other hand, should be distinguished (see also Whitehouse 2004, 2005; Whitehouse and Hodder 2010). This distinction was suggested already by William James in his investigations of religious experience (1960) in the very beginning of the 20th century. Parker Pearson does not define the two concepts, yet he seems to imply that whereas religion is a cultural enterprise and relatively recent, spirituality is much older and links with biology.
2) Religion may be viewed as a parenthesis in history. Although a large one, it is nevertheless a parenthesis. It has been present in history at least since the first states in the 4th millennium (as Parker Pearson remarks), and possibly with forerunners as early as the Neolithic communities. Yet, just as religion arose or was constructed, so perhaps at some point, it may be on its way out again.

As for the latter point, we must say that in at least some parts of the world – despite the flourishing of various fundamentalisms – religion has lost terrain. Historian of religion Jeppe Jensen (2014: 155-156) formulates the situation like this:

"The processes of secularization have been robust in some parts of the world and less so in others […]. The potential future developments are of course difficult to forecast, but modern lifestyles could point in the direction of increasing secularization on a global scale […]."

The secularization of western society has been going on since the Enlightenment, promoting an increasing independence of the state from the church. Whereas historically this development has been mainly Christian, the Islamic scholar Rauf Ceylan estimates that also the Muslim communities in Europe will undergo a similar process in the coming years.[6]

Thus, it may not be wrong to hypothesize that religion is on its way out. And that society is able to do without religion (Fig. 2). Yet, whereas a human existence without religion has usually been seen as a modern and industrialized phenomenon, completely new to the world, perhaps there are reasons for arguing that religion, as we know and define it today, was not always there, but was invented or came into being at a certain point in time (Christensen and Warburton 2013). Following Parker Pearson and Bloch, there is no inherent necessity for religion to be in the world, not even as an expression of human creativity. And, similarly to its having appeared, religion may also disappear at some point.

What is Religion?

So, what is religion? I am not going to give a detailed overview of the suggested definitions at this place (but see Christensen 2007, 2017 in press) but just briefly state that anthropomorphism – the ascription of life or a soul to "things" – in itself does not make up religion. To see faces in the clouds or the man in the moon, as Guthrie (1993) suggested for the origins of animism and religion, is often part of religion but do not make up religion in itself. Extraordinary experience, in the form of visions or dreams, is in itself not religion either, but needs to be set within a recognized system, as Eliade (1974) pointed out already.

In order to have religion we need a linkage between the "extraordinary" on the one hand, perhaps in the form of an experience, and a collective, authoritative entity or institution on the other hand (Christensen and Warburton 2013, 2015). Likewise, a set of practices and a particular shared discourse need to be present. Important for religion is that authority is placed outside the human (Lincoln 1994), but represented in an object or a person which can be seen (Albinus 1997; Christensen 2010).

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[6] http://www.noz.de/deutschland-welt/politik/artikel/518767/islamwissenschaftler-auch-moscheen-werden-die-glaubigen-weg bleiben (Kückmann 2014).

Fig. 2   Ritual without religion. Rituals may be organized and performed outside religious frameworks. Here the preparations for a ritual of saying good-bye. (by courtesy: Arne Raap Mehl, Horizonte Bestattungen, Freiburg)

Furthermore, religion is linked to objects. In order to have religion we need material culture. Warmind (2017 in press) cites the Church Father Lactantius for saying that real gods are disembodied and not depicted and cannot be made of earthly material. Yet, Warmind argues, although a god may be claimed to be invisible and immaterial, in order to have an impact, the god needs (a) some sort of personification or individualization and (b) some sort of a material presence. As for the latter, this can be in the form of a statue or an image, but also in the form of a piece of bread and a glass of wine.

"However gods are perceived, they do require some form of material projection. Even a god with no material being requires a cultic focus. Lactantius' idea that only intangible worship is truly religious may be philosophically pleasing, but it has never been true in the real world. Religion and even gods leave a trace and their existence can be deduced from material remains." (Warmind 2017 in press)

As an example, we could point to the Scandinavian Bronze Age where representations of the sun or references to the sun appear in numerous finds (*e.g.* the sun chariot from Trundholm, razor blades with images of the sun, as well as endless ornamental spirals on bronze weapons, razor blades, belt plates, jewelry, and musical instruments). The sun seems to have been the ultimate object of projections. Yet, if we change our perspective and look at it from a more human point of view, this ultimate object – the sun – may not in the end be the most important. What appears central and stands in the focus were those representations of the sun and those tools with which the sun could be "tamed", interpreted, narrated, and instrumentalized: *i.a.* grave mounds whose structure alludes to the circular and the rays (*cf.* Holst 2017 in press), objects of amber able to catch the light of the sun, and golden discs and cups with spiral patterns. Whereas no human can control or take possession of the sun, it is possible to hold or control a grave mound, a mirror, or a golden cup, for which a relation to the sun is claimed.

By claiming a link between the natural phenomenon (the sun) and the object (*e.g.* the mirror), individuals possessing those objects, controlling them, and/or manipulating them, would have been able to exercise that kind of religious authority which Bruce Lincoln (1994: 5) has described:

"[...] the exercise of authority not only involves but often depends upon the use of nonverbal instruments and media: the whole theatrical array of gestures, demeanors, costumes, props, and stages devices through which one may impress or bamboozle an audience."

Similarly, with an example from the ancient Greek world, Albinus (1998) has described how the Homeric poets themselves had no authority but derived their authority from the reference to Homer built into their songs. In the same way, the Old Testament prophets were listened to (and sometimes not) because of their claim that their words were not their own but came from god; they themselves were only god's mouthpiece and mediators between god and the people. Thus, things – here: songs and prophecies – gain authority from their reference in so far as this is accepted by the audience. Parallel to the Homeric and Old Testament examples it seems safe to suggest that the Bronze Age golden cups were able to lend authority to their owners by their reference to the sun.

At this point, the effect of the humanly produced object compared to the natural object enters the discussion. What effect does the humanly made have upon us? Does it require an ascription of meaning

more than natural phenomena do? Is that a reason why it exhausts us so? In a study of colours, Warburton (2007, 2012) has shown that the names for the colours yellow and blue do not come from the natural phenomena "sun" and "sky" but from the traded materials "gold" and "lapis lazuli". Although people had been watching the sun and the sky since the dawn of humanity, what they in the end used as points of departure for language and names were metals that can be touched and handled and that were objects of trade in the Bronze Age. The implication of this is not that nature is not important in human life, but that the social and tangible things are more pertinent.

In so far as the Neolithic saw an "explosion" in the production of things, the above arguments together point in the direction that the Neolithic was decisive for the development of religion.

Paleolithic Preludes and Artification

Having argued for the fundamental correlation of the development of religion and Neolithic communities, we are left with the question how we should understand what came before. What are the paintings of Lascaux, for example, or the statuettes from the Swabian Alps (Fig. 3)? Ellen Dissanayake (2009) sees rock art, as well as most other forms of prehistoric and contemporary art from the non-western world, in the light of "artification", by which she means "making something special by marking it out". This may be done in an elitist framework as well as in an every-day-context. Thus, both painting an elaborate horse on a cave ceiling and placing a flower in one's window can be seen as belonging to this same category.

Whereas many theories are praising the ingenuity of mankind, celebrating its outstanding expressions (*e.g.* Miller 2001; Donald 2009), Dissanayake takes into consideration those loads of material which have been produced for the joy of producing them and for the eye of the beholder, but not in order to bring fame to the creator.

The concept of artifying takes art away from an elitist sphere and gives it (back) to the common population, away from special occasions and over to everyday life. Not everybody is equally skilled, but everybody is able to do something, and often does. To the dancer Anna Halprin, everybody is a dancer (Gerber 2009). To Dissanayake, everybody is an artist. Because of the inclusive character of the concept, it throws doubt on, for instance, the idea of secret societies in the Palaeolithic, as this was proposed by *e.g.* Clottes and Lewis-Williams (1998). Artifying is simple and does not need ritual and myth, but goes also without these. This is an important feature when going back in time, *e.g.* to the Paleolithic where the existence of ritual and myth cannot automatically be assumed but should be critically questioned. Thus, with the concept of artification it is a possibility to see the art of Lascaux and Vogelherd less as ideologically driven, symbol-producing, and meaning-making, and more under the lens of "art for art's sake" similarly to the way some early cave-researchers saw it (*cf.* Ucko and Rosenfeld 1967).

Shamanism

The concept of artifying may also throw light on what is not "just" products of artification but actually part of a system that may be termed, or point in the direction of, early religion because combining extraordinary and authoritative elements. Such examples have been pointed out by Benz and Bauer (2015). In their study of early Holocene material from above all Northern Mesopotamia, they have observed that a specific combination of snakes, scorpions, and birds with human figures builds a motif combination that is repeated so often that they describe it as a canonization. Their demonstration of this repeated pattern builds a strong argument for the presence of a system which perhaps may be called religion.

In their study, Benz and Bauer argue for the presence of shamanism (defined as a specific human relation with animals) or shaman-like religious specialists during the Early Holocene. At the same time, shamanism has often been presented by others as a phenomenon which was already present in the world at the time of the Early Holocene (to mention just a few: *e.g.* Clottes and Lewis-Williams 1998; Clark 2006). This assumption is grounded on a) the idea that shamanism represents early religion or a forerunner of religion, b) Palaeolithic and Epipalaeolithic representations and images of hybrids, such as the "lion man" from Hohlenstein-Stadel (Fig. 3), "the sorcerer" from Les Trois Frères, and the "bird man" in Lascaux. Yet, although these representations all show a hybridity between human and animal, it is a question whether we can allow the methodological jump between the observation of a certain image to the interpretation of this image within a historical (rather than prehistorical) framework. In other words, does "human-animal-hybrid" automatically and at all times mean "religious specialist"?
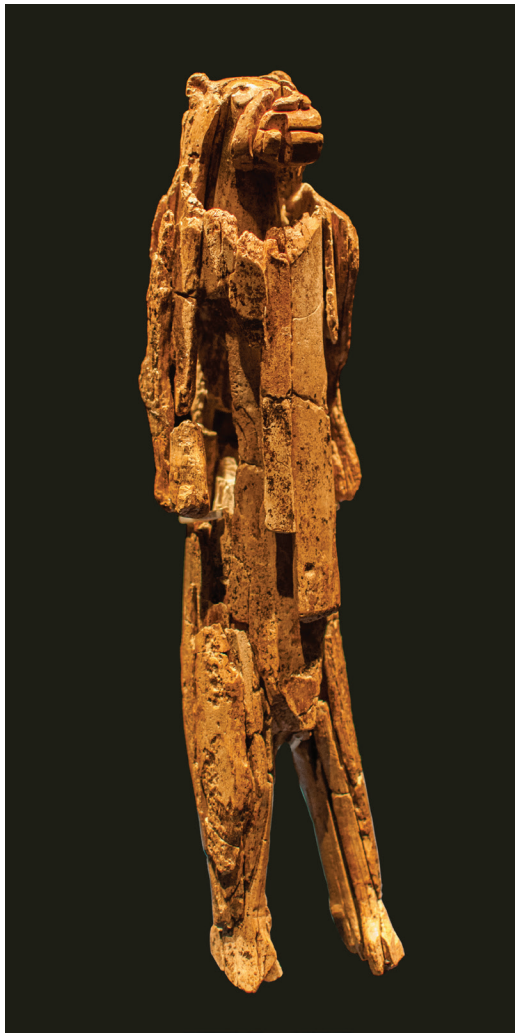
Or is this relation between a sign and its content itself the result of a historical development? Cut short: should we necessarily assume that shamanism is much older than the Early Holocene material presented by Benz and Bauer (2015)?

In a study of Siberian rock art, Rozwadowski (2012) suggests that shamanism in Siberia can be dated back only 4,000 years, to the Bronze Age. And in his work on shamanism, Eliade (1974) suggested that the origins of shamanism lay in the Ancient Near East and that from here shamanism was later diffused to Siberia and the rest of the world.

Shamanism as a phenomenon is a conglomerate of many elements which did not all originate at the same time. Thus, whereas the trance element is extremely old (*cf. e.g.* Samorini 2002 for animals attracted to hallucinogenic plants), just as the healing element is (*e.g.* Clark 2006)[7], the systematic and almost canonic pictorial association with particular animals, as Benz and Bauer demonstrate, may have its origin in the Early Holocene. Is it an establishment of religious specialists which appears systematically for the first time in this material (with singular forerunners or contemporaries, as in *e.g.* Lascaux)?

I think the material and the analysis of Benz and Bauer allows for twisting their conclusion in a more radical direction than they do themselves and yet remaining on the level of the material. What their analysis brilliantly shows is indeed that in this context and material, for the first time the particular combination of a special group of animals (scorpions, *etc.*) are seen with human figures. This specific combination is in later traditions associated with the shaman's journey. The material shows that something decisive for the development of a phenomenon happened in this area and in this time.

Under such a perspective, the material presented by Benz and Bauer is not just an example among many, but actually makes up a crucial co-player in the development of shamanism. This perspective implies that the reason historical shamanism looks as it does may be due to its roots in the area between Euphrates and Tigris. Thus, Benz and Bauer show how one central religious phenomenon originated and evolved.

Fig. 3   The lion man (or: lion human) from the Upper Palaeolithic cave site of Hohlenstein-Stadel, southern Germany explores the boundaries between human and animal. (by courtesy: Dagmar Hollmann)

Conclusion

For some time from the late 19th century till the middle of the 20th century, evolutionism dominated anthropology and the study of religion. According to this point of view, mankind was in the process of undergoing a development from primitive to developed, in terms of society and religion. Modern hunter-gatherers were considered to represent a survival of a primitive stage of mankind as such, whereas Euro-Asians were considered to represent a more advanced stage. In terms of religion, the armchair anthropologist James Frazer spoke of a development from magic, evolving into religion, and ending with science: *"the higher thought... has on the whole been from magic through religion to science"* (Frazer 1994: 804). Modern hunter-gatherers as well as the Palaeolithic hunters were assumed to represent the

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7   Note, however, that although healing is one of the central features of shamanism, this element is only rarely "found" in the archaeological material. When shamanism is suggested as interpretation of prehistoric material, it is most often linked to trance (*e.g.* Clottes and Lewis-Williams 1998).

magic stage, the Egyptian and Mesopotamian high cultures as well as Christianity and Judaism, *etc.* were characterized by the religious stage, and our modern industrialized society was finally on the way to the end goal of a scientific stage.

This view was applied to early research on prehistoric art, and thus Abbé Breuil (1952) interpreted the Palaeolithic cave paintings in terms of magic, whereas the more recent Scandinavian Bronze Age rock art was considered by Almgren (1927) to represent religion.

The natural counter-movement to this depreciating view of many peoples in the world reacted against what was obviously wrong in the evolutionistic world view. Yet, eager as it was to restitute the dignity and equality of all peoples in the world, it was also so scared to see differences that it ignored human variety. Thus, religion came to be seen as a feature characterizing humans as such, prehistoric as well as historic people, and hunter-gatherers as well as settled and industrialized people.

Yet, perhaps it is time to look at things from another angle. In so far as it may be possible today to see more similarities between postmodern, post-materialist urban dwellers and hunter-gatherers than between post-modern, post-materialist urban dwellers and traditional urban dwellers and settled farmers, perhaps it is also possible to look at the modern hunter-gatherers in a different way. Just as religion plays a small role in modern society, so also among many contemporary hunter-gatherers. In fact, many of them never adopted religion.

Perhaps we should see religion as a phenomenon that began in the early villages of the Near East, came to flourish in the states, and was part of the state building in many parts of the world for thousands of years, yet that not everybody in the world adopted this model and that large parts of the world are now leaving it again (Christensen and Warburton 2013; 2017 in press).

The construction of corporate identities in the beginning of the Neolithic was a historical event, just as the human obsession with things and the projection of supernatural power onto certain of these things. And just as these events happened and started a long development, so they seem also to have an end. Neither materialism (understood as the obsession with accumulating things) nor religion, are biological features of being human.

Acknowledgements

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Dress Code, Hairstyles and Body Art.
Markers of Corporate Identities in T-Shaped-Pillar Sites of Upper Mesopotamia?

Michael G.F. Morsch[1]

Abstract: The Pre-Pottery Neolithic A (PPNA) and B (PPNB) of Upper Mesopotamia reveal a cultural phenomenon, called Nevalıçorien or T-shaped pillar sites. In their significant settlement pattern and structure, as well as their architecture and statuary, numerous markers for corporate identities and developed organization structures can be detected, suggesting a complex intra- and intersite group consciousness.

Keywords**:** Religion, ritual, cooperation, social evolution, architecture, figurines, statuary, PPN

Geographical Setting and Cultural Frame

T-shaped pillar sites are a phenomenon limited to the western part of Upper Mesopotamia (Schmidt 2006; Çelik and Moetz 2012), a region in the zenith of the Fertile Crescent divided by the Karacadağ Mountain into the Euphrates and the Tigris Basin where a high abundance of wild species of domesticated plant and animal forms can be observed and which can be seen as the area of origin of agro-pastoralism (Braidwood 1952: 11-13; Braidwood and Howe 1960: 3, 183-184; Peters *et al.* 2005). They belong to a horizon of sites defined by a special settlement structure, architecture and figurine art which was defined as Nevalıçorien by Klaus Schmidt (1997: 78)[2] and has been discussed recently as an extensive cultural complex by Çelik and Moetz (2012: 701). The geographical area of the sites extends from the slopes of the Karacadağ mountain including the Urfa region and the surrounding hills of the Harran plain to the Euphrates Valley, the Adiyaman and Kâhta Plain in the Taurus foothills. It is possibly bound to Miocene limestone ridges of this region that provided the natural resources (Çelik and Moetz 2012: 701). Reinterpreting data from Çayönü, Klaus Schmidt suggested an extension of this phenomenon into the Tigris Basin. Due to the fact that the terrazzo building at Çayönü (Fig. 2c) has a similar architecture, he proposed a reconstruction of the building with T-shaped pillars in the middle (Schmidt 1997: 73).

The discovered sites include Göbekli Tepe, Karahan Tepe, Kilisik, Nevalı Çori, Sefer Tepe, Taşlı Tepe, Urfa Yeni Yol/Yeni Mahalle (Çelik 2006, 2011, 2015; Çelik *et al.* 2011; Çelik and Moetz 2012) and possibly Çayönü (Erim-Özdoğan 2011). Until now only Göbekli Tepe, Nevalı Çori and Çayönü have been investigated on a large scale while at Urfa Yeni Yol/Yeni Mahalle only limited salvage excavations were possible (Çelik 2000, 2011). The latest, still ongoing survey activities in the province of Şanlıurfa point to a high settlement density at least during the PPNB (Çelik 2015).

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[2]   Klaus Schmidt defined only the PPNB-phases of the sites as Nevalıçorien. Hauptmann (2011: 106) also included PPNA-sites. Therefore I suggest to distinguish an early PPNA (Göbekli Tepe) and a late PPNB phase (Nevalı Çori) of the Nevalıçorien.

Architecture and Settlement Structure

Characteristic for most sites mentioned above are monolithic T-shaped limestone pillars decorated with reliefs. At the excavated places, they have been found in special buildings, so called sanctuaries (Schmidt 2010) or cult buildings (Hauptmann 1993). These structures are characterized by two central pillars, surrounded by smaller ones, often show a terrazzo-floor, sculptures in the form of figurative sculpture or reliefs and probably served a public, possibly cultic purpose (Schmidt 2006: 168, Fig. 76, 2011: 42-43, Fig. 2; Hauptmann 2011: 95-100, Fig. 10). Edward Banning (2011) also discussed a use as residential buildings. Both the T-shaped pillars and the connected architecture, limited to a geographically contiguous region, can be seen as a marker of corporate identities as well as the complex settlement structure found in Nevalı Çori and the contemporary levels (ch 1-3 to cp 1-3) and the later ones (c 1-3) at Çayönü (Bıçakçi 2001: 146-149, 153; Erim-Özdoğan 2011: 199-201, Figs. 32-36) which is probably representative for settlements of the Nevalıçorien (Fig. 2). Both sites show a clear differentiation of architecture such as public, residential and storage buildings in a context of a super-ordinate settlement pattern with common zones for working, storage, residence and public activities. Following such an organized settlement pattern – be it voluntary or involuntary – means giving up individual autonomy towards a common administrative structure, and therefore, creating a feeling of identity for the group sustaining it.

The orientation of the special buildings also provides information about an inter- or intrasite group consciousness. At Nevalı Çori, the cella of the older phase of the Cult Building II in Level II (Hs. 13b) is oriented to the southeast (Hauptmann 1993: 53, Figs. 4-5, 2011: 95-98, Figs. 3, 8, 10), pointing precisely to Göbekli Tepe (Figs. 1, 3a). This could mean a direct relation between Göbekli Tepe as a central sanctuary and Nevalı Çori as a subordinated village. Similar considerations about religious centers and subordinated PPN sites in the Harran plain were made by Çelik *et al.* (2013) suggesting a regional system of ritual centers and subcenters for T-shaped Pillar sites in Upper Mesopotamia.

In the succeeding Cult Building III (Hs. 13c) which is contemporary with Level III and IV and Level IIa of Göbekli Tepe, the ritual axis is rotated 90° (Figs. 1, 3b) extending from the entrance to a niche in the north-eastern wall where a sculpture of a human head with a snake was found (Hauptmann 1993: 53-54, Figs. 9-13). The different orientation away from Göbekli Tepe suggests that not only the religious structures but also the group identity had changed during the time of Level III and IV, possibly concentrating more on intrasite relations. One reason for this might be that Göbekli Tepe had lost its regional meaning at this time, which is indicated by the decline of quality and size of the
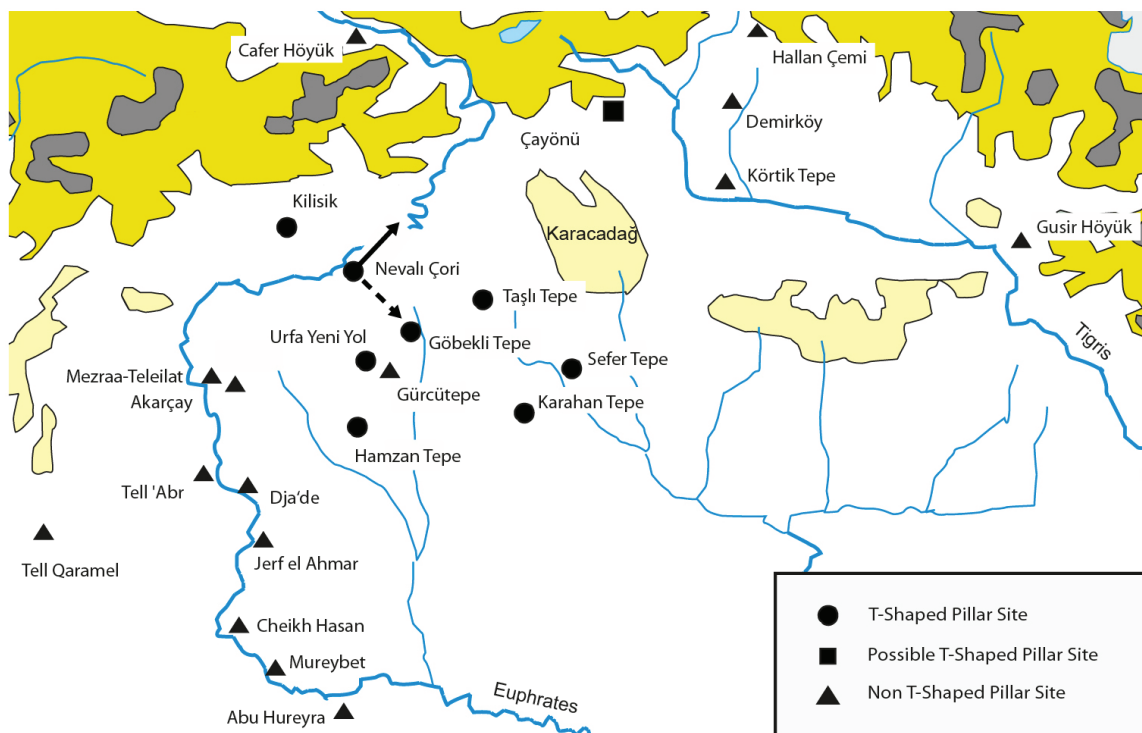

Fig. 1   Map of main Neolithic sites in Upper Mesopotamia and northern Syria.
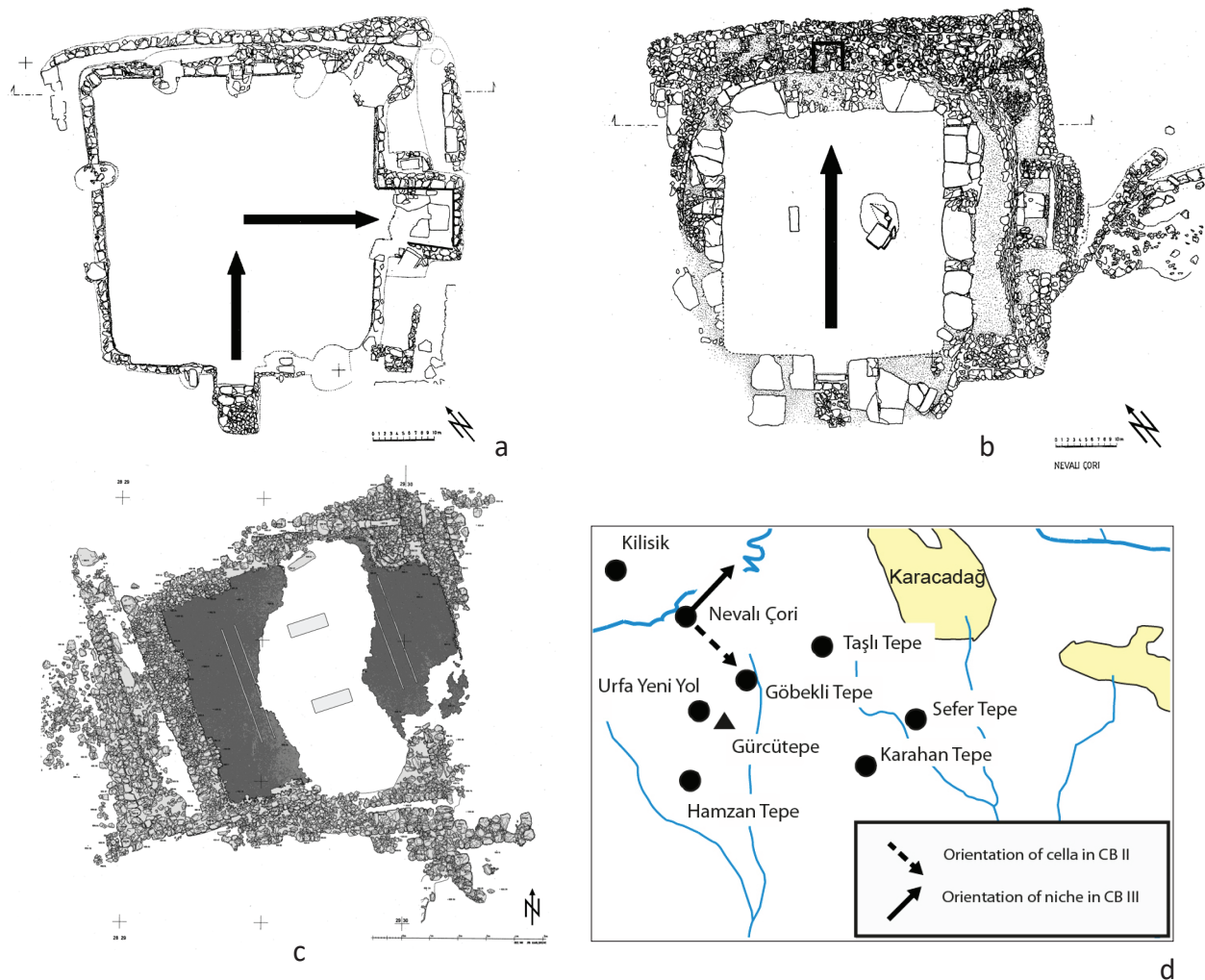
Fig. 2   a) Nevalı Çori, CB II (after Hauptmann 1993), b) Nevalı Çori, CB III (after Hauptmann 1993), c) Çayönü, Terrazzo Building with possible pillars (after Schmidt 1997), d) Orientation of the cella and niche of the cult buildings CBII and CBIII of Nevalı Çori.

architecture, T-shaped pillars and statuary from Layer III to the subsequent Layer II when the large circular structures of layer III disappeared and were replaced by smaller rectangular rooms (Schmidt 2010: 241, Fig. 2).

Irrespective of the precise nature of such relations, they stress the public or even religious character of these buildings as postulated by Dietrich and Notroff (2015). A direct orientation of a subordinate cult place towards a superordinate one suggests that both sites were part of an extended social and religious community with a distinctive hierarchy – another marker of corporate identity. This recognition made in Nevalı Çori needs further confirmation by research on other T-shaped pillar sites.

The Clay Figurines of Nevalı Çori

At Nevalı Çori along with the significant architecture and stone sculptures similar to the typical motifs of the large stone sculptures and reliefs at Göbekli Tepe (Schmidt 2010; Hauptmann 2011) a total of 1289 clay objects have been found. Of these 665 are figurines, featuring men, women, animals and abstract forms, with over 90% of them being anthropomorphic (Morsch 1997, 2002).

The figurines have been found in almost all parts of the settlement: mainly in pits and in the open spaces between the houses. Interior finds are limited to the round houses, RH 1 and RH 2 detected in Level III and IV (Fig. 3) (Hauptmann 2011: Figs. 3, 4). Additionally almost all the figurines have been found broken, which suggests that the figurines were intentionally damaged and thrown away after using them, evidently because they had lost all their value or were regarded as dangerous (Morsch 2002: 145).
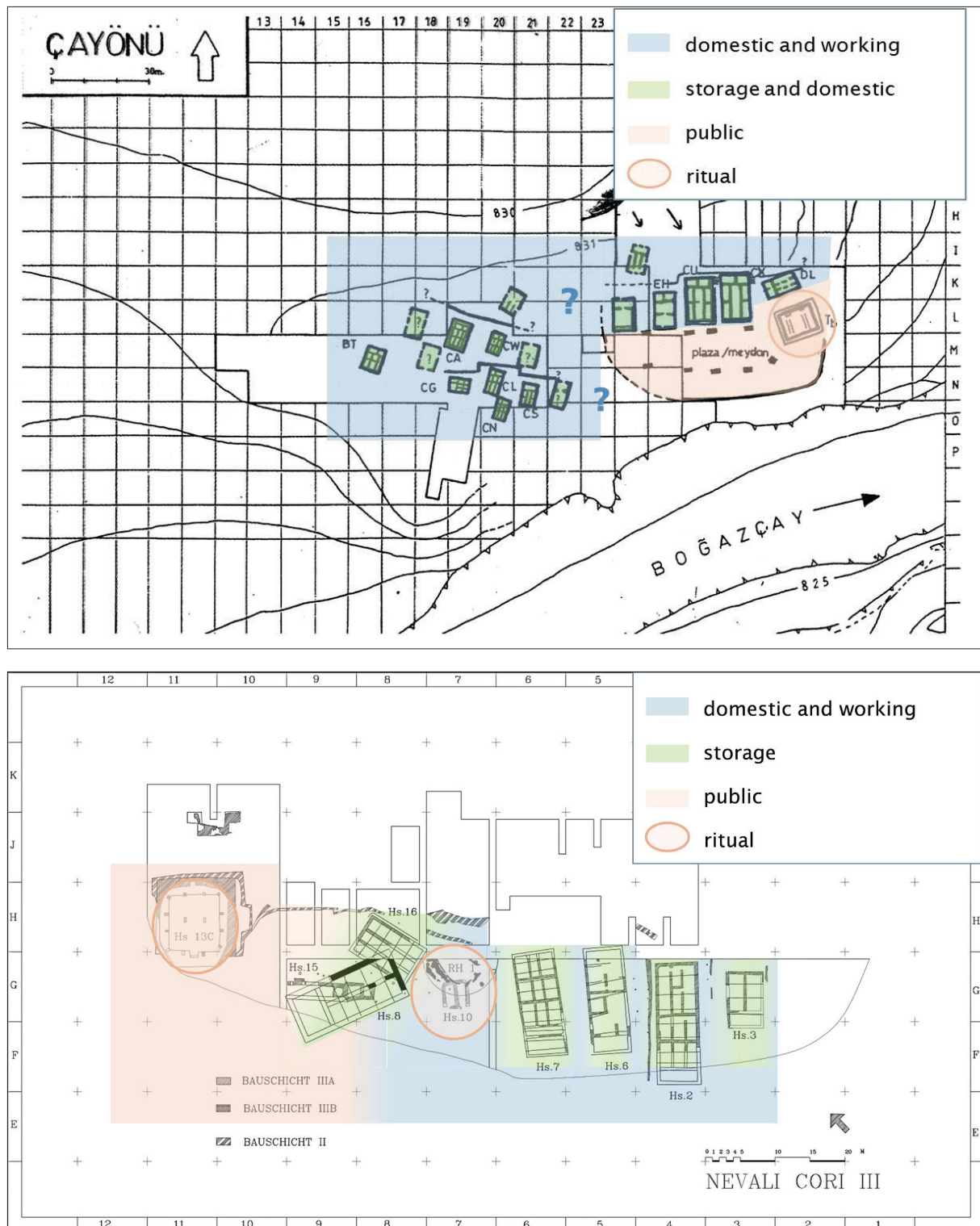
Fig. 3   Settlement plans of Çayönü (c1) and Nevalı Çori, (III) (after Erim-Özdoğan 2011; Hauptmann 2011).

Amongst the anthropomorphic figurines two types of figurines, a male (Fig. 5) and a female (Fig. 6) can be identified in more than half of the figurative material. The female figurines (159 examples) are always shown sitting while the 179 male ones are standing upright. They were modelled by always using the same techniques for each type:

To make a female figurine, the torso was modelled first, including the head. The buttocks were made of two small clay spheres, pressed together and then pressed on a smooth and flat surface. Then the torso was put on top and the clay at the join was smoothed to make it invisible. The legs and feet followed and the joins were smoothed again.
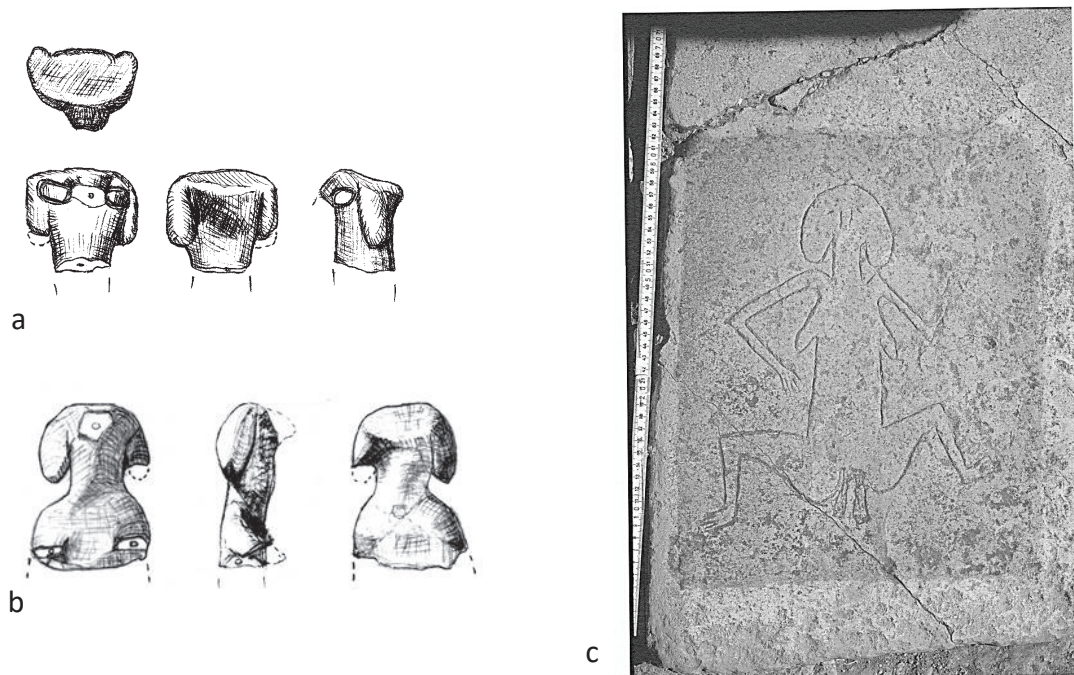
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Fig. 4   a) Head of a clay figurine from Nevalı Çori (schematic drawing), b) Head of a clay figurine from Nevalı Çori (schematic drawing), c) Göbekli Tepe, engraving on a bench in the „lion pillar building" (after Schmidt 2010).

To make a male figurine, the torso was modelled in a way similar to a female figurine, including the head. The legs were made of two clay cylinders pressed together, including the feet at the lower end. The torso was again put on top and the clay at the join was smoothed to make it invisible. Next, small pieces like the genitals and sometimes a sash-shaped belt was applied. Finally, the figurine was smoothed again and sometimes additional decorations such as incisions or punctures were added (Morsch 2002: 148).

This stereotypically repeated scheme of making figurines demonstrate a precise idea about how a human being should be displayed. This convention is intensified by common hair dresses, headgears, dresses and body decoration described in the next sections.

Hairstyles and Headgears

Within the figurines it was possible to distinguish three types of hairstyles or headgear: The first is made of two lumps of clay, hanging on both sides, which may constitute braids (Fig. 4a) (Morsch 2002: Pl. 2: 2). The second is a flattening of the skull, a possible hint to a kind of headgear (Morsch 2002: Pl. 2: 1). The third type is a combination of type one and two (Fig. 4b). While the first type and the third type were limited to female figurines, the second was detected also on two male examples. A representation of a naked woman depicted with a hairstyle of the first type was discovered at Göbekli Tepe IIa (Fig. 4c). This engraving of a female person on a bench of the "lion pillar building" (Schmidt 2010: Fig. 13, 2011: 43, Fig. 15) suggests that this kind of hairstyle had a further proliferation.

Dresses

In addition, the clay figurines show some evidence of garments or dresses. Some of the male ones wear a belt or sash around the hips, decorated with stitches, straight or oval incisions resembling a dotted animal skin, possibly leopard or a simple piece of cloth (Fig. 6: 3.4.6) (Morsch 2002: Pl. 3: 3.4.6). On the female figurines no evidence for clothing could be found. The women depicted are apparently naked.

This feature of men wearing an animal skin around the waist can be found on the pillars at Göbekli Tepe (Schmidt 2010: 245; 2011: 47), in the clay figurines of Nevalı Çori and in the wall paintings at Çatalhöyük (Mellaart 1967: Pl. XIII, Pl. 61-67). It evidences intermediality of motives, possibly also on organic image carriers. The latter would explain an extended use of this motive, over more than 500 km and 1500 years from PPNA in Upper Mesopotamia to the late PPN in Central Anatolia, though their meaning might have changed.

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Fig. 5   Female figurines from Nevalı Çori: 1-2 complete, 3-4 torso fragments, 5-6 fragments of the lower body.
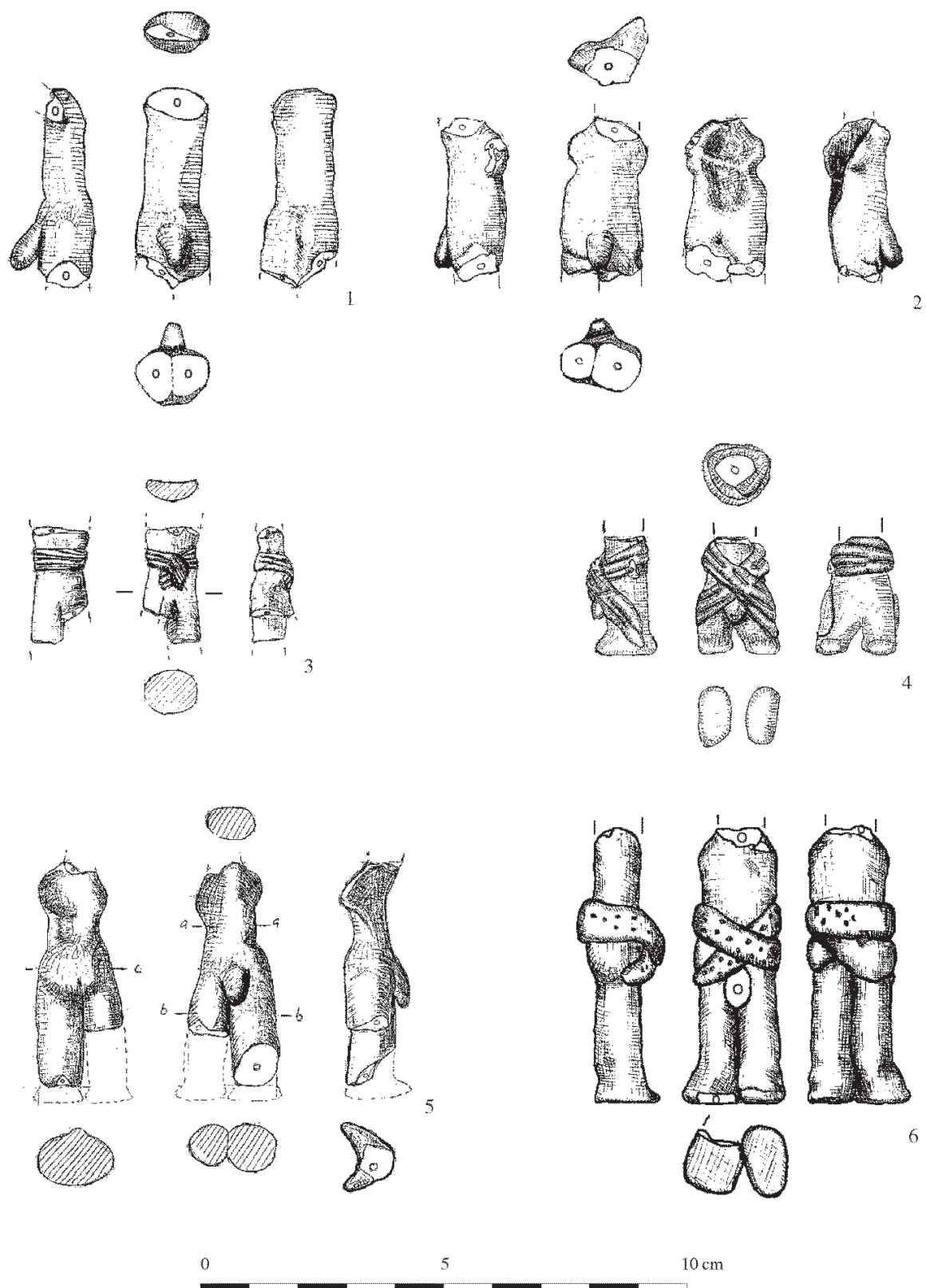
Fig. 6   Male figurines from Nevalı Çori: 1-2, 5 undressed, 3-4, 6 dressed with belt or sash around the hips.

Body Art/Decoration

Furthermore, the decorations found on the clay figurines give a hint at the common use of body art. Many of them, especially the females, have incisions shaped like ovals, crosses or simple straight lines, attached to the thorax, as well as on the stomach, around the waist and on the buttocks. Because the ones on the thorax are arranged like colliers, they could depict both jewelry and body decoration (Morsch 2002: Pl. 2: 1.4). Body decorations like painting, tattooing or scarification are known from various ethnic groups. Aside from a simply decorative purpose and a rarely reported medical use (Dorfer *et al.* 1999), the main motivations for body art are the representation of group affiliation, social status, age or gender. For this reason, body decoration in most instances emphasizes group identity, a phenomenon that can still be observed in modern societies.

Functional Analysis

The meaning and possible uses of the clay figurines of Nevalı Çori have already been discussed elsewhere (Morsch 2002: 150-151, 159). Recent research by other scholars on Neolithic clay figurines of other sites and in general (Voigt 2000; Coqueugniot 2003; Bailey 2005; Kuijt and Chesson 2005; Meskell 2007, 2008; Verhoeven 2007; Meskell *et al.* 2008; Rollefson 2008; Lesure 2011; Martin and Meskell 2012; Ayobi 2014) provide interesting results but no significant additional insights for the purposes of this study. A detailed discussion of all results is beyond the context of this paper, concerned with the observations about corporate identities. In brief, it can be emphasized that hypotheses about the use of Neolithic clay figurines cannot be conclusively proven even in a limited spatial area or cultural phase and therefore cannot be generalized. For the research area outlined above this means that several options for the meaning of clay figurines are conceivable:

One possible meaning of the figurines is their function as toys. The figurines can be used easily for all kinds of role-play exercises concerning the family or the whole society. But this would mean a standardised and specialised production of toys in an hunter and gatherer culture, which has not yet been reported in any other case.

Another aspect is illustrated in figurines, made to express a sudden impression or feeling. Therefore they can be considered narrative images like the "Pieta" of 'Ain Ghazal (Rollefson 1986: Pl. II, 3).

They could also be idols expressing a wish for the future such as pregnancy and children. This would be an explanation for the images of pregnant women or women with children *etc.*

Shamanic practices in the ethnological report include black magic to obtain protection, curses or healing by using figures. In this case, the figurine is a substitute for a human used for transmission of the wished effect. A disease for example could be moved from a human's body into the figure which was destroyed afterwards.

The Nevalı Çori clay figurines could possibly represent human beings in a ritual ceremony. The equal number of male and female images suggests that the ceremonies in which they were used concerned both male and female inhabitants of Nevalı Çori equally. As there are also pregnant figurines or such with children, the figurines played a certain role in important stages of human beings such as birth, initiation marriage or death. In these stages many industrial and non-industrial societies practise so called rites of passage. In non-industrial communities figurines representing the beings are often used for support. Destroying a figurine after a ceremony can be a sign for leaving a stage behind. In this regard also a magic healing ceremony can be a rite of passage. The purpose of such ceremonies, especially of initiation rites, can be to increase feelings of group identity and affiliation (Van Gennep 1909: 2-3; Turner 1969: 96-97).

An important indication of the function of the clay figurines within cultic or shamanic spheres is the fact that interior finds are limited to the round houses of Level III and IV and the surrounding area where more than 200 items have been found. It seems that this zone had a special role in the ritual habits of the settlement because also stone figurines featuring human heads, miniature masks and animals have been found there (Badisches Landesmuseum 2007: Kat. Nr. 105, 106, 109, 110, 128, 130, 134, 136; Hauptmann 2011: Figs. 15a/b, 17, 26, 30).

A site that provides comparable finds is the cave of Naḥal Ḥemar, in the Judean desert. It revealed a conspicuous inventory including beads, a headgear made of linen yarn, masks, decorated skulls and plaster statues which can be seen in ritual spheres as parts that can be used by healer-magicians or other spiritual purposes. Therefore the excavators consider the cave as a site that principally served magic purposes (Bar-Yosef and Alon 1988: 28; Goren *et al.* 1993: 127-130).

It can thus be suggested that the round houses of Nevalı Çori could be a place where shamanistic rituals were practised. Their special role, possibly as a place of interaction between immanence and transcendence, is manifested also topographically, because they are located in an area between the cult building and the living and storage buildings (Fig. 3) where (public) activities of daily life took place. This hints to the existence of two different cult zones with different ritual traditions in one settlement, possibly in interaction. On one side, a shamanic ritual zone and on the other side a cult building where practices concerning worshipping goddesses or gatherings of the community took place.

In this context the role of the clay figurines could be seen as a representation of the beings in shamanic rituals. In fact, so many of them have been found broken that they also might have been regarded as dangerous, especially after healing ceremonies, that it was necessary to destroy them.

As argued elsewhere (Morsch 2002: 150-159; Schmidt 2010: 246; Hauptmann 2011: 102) it can be excluded that the clay figurines of Nevalı Çori represented deities. They differ considerably in material, in size and their possible function from the other figurine art of Nevalı Çori. The latter are stone sculptures with different motives such as animals and combinations of human beings and animals, but also human beings alone, particularly their heads (Hauptmann 2011, Figs. 11a-b, 13a-b, 15a-b, 24-32). In fact the stone sculptures are much larger than the clay figurines and have different motives pointing to spiritual purposes. The fact that they were found in the houses and inside the cult building suggests that they could be regarded as images of deities or representations of a transcendental world on the one side and the real world on the other side (Morsch 2002: Fig. 4) which is confirmed by the sanctuaries of Göbekli Tepe. The combined images of human beings and animals do not interfere with this model.

Whatever the role of the clay figurines was, they stand for a standardized, stereotypically repeated scheme of how figurines should be made and how a human being should be displayed and dressed as suggested by common hair dresses, headgears, dresses and body decoration.

Discussion – Rituals and Rules of Cooperation in T-shaped Pillar Sites

Attempting to trace a system of corporate identity markers in the archaeological heritage, it is necessary to take into account the neurologic, psychological and sociological factors these systems are based on. Because of the numerous studies and reports on these issues, it is only possible to give a general overview, summarizing the most important points:

The emergence of corporate or group identities is favoured by the fact that groups with a high level of internal cooperation but also outwardly aggression have better opportunities in the competition for resources than groups with a low one (Wilson 1999, 2012: 62; Choy and Bowles 2007; Bowles 2009; Nowak 2012). Therefore, cooperation is an important factor for the establishment and maintenance of societies, so the research of CI markers in archaeological evidence as an indication of cooperation processes but also a measure of the level of development of cooperation systems is of particular significance. Cooperation in groups is subject to specific regularities that can be set up consciously or unconsciously, voluntary or involuntary. Regularities of cooperation have been investigated in a number of studies focused on different fields of research like evolutionary game theories (Nash 1950; Axelrod 1984; Boyd and Richardson 1992; Riolo *et al.* 2001; Nowak 2006, 2012, 2013), sociobiology (Dawkins 1989; Wilson 2012), neurobiology (Bauer and Benz 2013; Benz and Bauer 2013; Dunbar 2013) but also ritual (Van Gennep 1909; Turner 1969; Bell 1992, 1997; Assmann 2000).

Groups in terms of modern holistic corporate identities, let them be company, a political group or a religion can be defined comprehensively as socio-cultural systems, realised but also manifested by a number of means or instruments of expression, essentially common design, communication and behaviour with the aim to create a group or cultural identity and represent the personality of a society (Balmer and Greyser 2002, 2003; Birkigt and Stadler 2002: 13-24; Regenthal 2003: 77; Herbst 2006: 58-91). These means of expression relate to all parts of the human memory, the procedural, the episodic and the semantic part which they also influence in their capacity as stimuli. Consequently, a means of expression to create group identity can be a marker for it as well.

Due to the fact that this study is based on the material archaeological heritage in most instances the analytic approach is limited to the corporate design which mainly influences the semantic part of the memory. The corporate design can comprise architecture, dress code, product design, logos and all media used by a society. In fact the learning effect can be enhanced if many (or all) individual components of the memory are involved, processes or institutions that impact on the procedural and the episodic memory hold special significance (Erll 2011: 119-122).

An example for such processes can be found in community rituals. Besides other aspects rituals like rites of passage, calendrical and commemorative rites or rites of exchange and communion (Turner 1969: 95-97; Bell 1997: 94, 102-103, 109) have a strong influence on the sense of community and group identity.

Due to the possibility of combining architecture, dress codes, body art but also other means of expression in a ritual almost all of the human senses are addressed by visual, acoustic, olfactory, gustatory and movement stimuli. Coupled with temporal factors, more precisely the time interval they are repeated and occasions they were carried out, common rituals allow to reach all parts of the human memory, the semantic, episodic and procedural. Another effect of stimuli interaction during rituals can be seen in the enhancement of group identity since a clear distinction between individual and collective memory cannot be made at this point (Assmann 2000: 11-15; Erll 2011). Being combined in rituals the impact of each stimuli can be intensified but also transmitted on another one, or even to a symbol representing all of them as a general signifier.

In summary, cooperation arises through the interplay of several rules (Nowak 2013: 292-299) and manifests itself in various communicative expressions including corporate identity markers or means of expression discussed above. Community rituals provide an essential means to initiate, enhance and maintain cooperation.

Comparing the data of T-shaped pillar sites with modern corporate identities some striking similarities can be noticed. The sites of the Nevalıçorien provide an elaborate and very significant common design concerning settlement structure, architecture, figurine art, hairstyles and dress code with a high degree of recognition. Especially the cult buildings with their T-shaped pillars and the outfit of the population had a great external effect. Furthermore the standardized, stereotypically repeated scheme of the clay figurines suggests the existence of a clearly defined pattern of how a human being should be displayed. Thus, they represent parts of the population, dressed for ceremonies or daily live displaying a certain dress code and representing a corporate identity which all those involved had to comply. As mentioned above, these markers or features of corporate identities are also the instruments (means of expression) that can be used to create cooperation. Whether they are used consciously or unconsciously cannot be clarified in this study. The evidence of other instruments or processes which cannot be found in the archaeological records is very weak. At least some hints to rituals can be found in the dancing scenes occurring on vessels in the Near East since the middle PPNB (Garfinkel 2003: 9), the earliest of them was found in Nevalı Çori (Hauptmann 2011: 100, Fig. 22). But once the visible markers of a corporate identity are noticeable it is very likely that invisible markers also existed – in fact the psychological basics of a corporate identity in the early Neolithic should not differ significantly from present ones because they function according to the same principle. However their material manifestation of course depended on their context.

Summary

The significant architecture, settlement pattern and statuary of T-shaped pillar sites in the Taurus foothills reveal a repeated program of motives, which can be interpreted as markers but also as instrument to create corporate or group identities, pointing at an extensive cultural complex (Çelik and Moetz 2012: 701), namely the Nevalıçorien as defined by Klaus Schmidt (1997: 78; Hauptmann 2011: 106).

In addition, the more intensively researched sites, Göbekli Tepe, Nevalı Çori and Çayönü show a complex settlement structure including a differentiation of architecture like cult, public, residential and storage buildings and a rich sculptural art where corporate identity-markers like the repeated display of human beings with common habitus, headgear, hair dresses and dress codes can be detected, representing a scheme that every member of the community followed. This suggests a more detailed picture of a complex society with a high degree of cooperation and organization. Furthermore a clear indications of a differentiation between public and shamanistic ritual activities can be detected.

Consequently, corporate identity markers can be seen in the accumulation of significant features and therefore common, cultural expressions, like settlement structure, architecture, direct interrelation between sites, statuary, habitus, dress code and possibly tools. Particularly suitable is the increasing emergence of symbolism at the beginning of the PPNA, continuing through the PPNB, which is regularly manifested in the Nevalıçorien of the Taurus foothills. On account of the limited database of three excavated sites, more research on T-shaped-pillar sites remains to be done.

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Hunter into Prey.
Trying to Make Sense of the "Media Revolution" at Göbekli Tepe

Erhard Schüttpelz[1]

Abstract: The essay tries to make sense of the iconography and monumentalism of Göbekli Tepe by way of a comparison with recent "hunting ideologies" in forager situations of abundance or "super-abundance". The article refers to two North American situations of super-abundance (North-West Coast societies based on seasonal aquafaunal abundance; and the seasonal congregations of large-scale Bison hunting groups on the Plains) to demonstrate how foragers coping with a situation of seasonal super-abundance are still able to ritually perform the reversibility of prey and predator inherent in hunting ideologies. The radical iconography of predators at Göbekli Tepe may likewise point to the ritual function of turning "hunter into prey", and the monumentalism of Göbekli Tepe may be interpreted as a ritual setting celebrating the unity of a hunting congregation quite foreign to – and even deliberately pitted against – later regional developments.

Keywords: Göbekli Tepe, hunting ideology, iconography, affluence, Neolithisation

(1.)

Imagine a story by Jorge Luis Borges or one of his doubles:

Archeologists excavated a hill somewhere in the hilly flanks of the Fertile Crescent. After years of documenting and interpreting the evidence, they were able to reconstruct a sequence of events, each step taking a millennium or more:

First, there must have been a seasonal abundance of food, and seasonal communal feasting at a very large scale. The "body mass" of animals, of meat, of food, of people and of remains must have been enormous, if not monumental: the demographic concentration, the abundance of food being eaten, the piling up of skeletons, but also the sheer number of mass slaughter leading to the feasting, the opportunities for killing and harvesting.

But this double "body mass" of humans and animals was organized and controlled by hunting groups; and the feasting was organized and disciplined by a ritual congregation. The communal feasting pacified the groups at a critical time in the annual cycle, after killing and harvesting, by reorganising them in ritual groups differing from the hunting groups. The organisation in charge of hunting the animals each year gave way to an organizing committee in charge of the feast, with spectacular performances and a temporary architecture dismantled each year after the celebrations.

After centuries of feasting, the organizing committee discussed the endless work of erecting and dismantling the ritual "plaza", and decided to make it permanent. The committee organized the communal labour of building a monumental temple city imitating the temporary architecture with its circular lodges, benches, entrances and passages. The "city" or "temple" was built only for the purpose of feasting and, because the builders had the original model in mind, it was erected in one continuous process. It was being partly rebuilt and partly filled, over a very long period of time, to continue the seasonal feasting, and depending on the development of the different groups involved.

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In a very literal and material sense the monumental weight of building this temple city was a "counter-weight" thrown into the scales, to keep the body mass or biomass of animals and of feasting humans and non-human beings in balance, and to keep them "in place". A monumental experience of death and reproduction, turned into a monument of death and reproduction. Building the permanent architecture was an extra measure: to make the feasting organisation durable, and especially to consolidate the peaceful – and egalitarian – relationships of the hunters, by annually dissolving the communal hunting groups into cross-cutting "fraternities" and initiation groups.

For a long time, this was a quite successful endeavour not only to "freeze" the transient conditions of seasonal relationships, but to assert the dominance of ritual reproduction and ritual regeneration, over and against group constitution before and after the feasting. There were at least three forms of social organisation involved: smaller groups dispersed all over the surrounding territory in winter times; the "police organisation" of mass hunting in the period of game concentration near the city; and the organisation of the feasting itself (with some ritual preparations before the mass hunting period as well). Not only the groups, but the forms of their social organisation were seasonally assembled and re-assembled; and the temple city had to be consecrated and abandoned each year. When the "body mass" of animals consumed during the feasting changed drastically, from big gazelles to smaller gazelles, the style of the monuments changed as well: towards a more modest style.

Finally, after one millennium, the temple city was deliberately buried, i.e. filled with the remains of the animal body mass consumed and scattered all around the city, and with pieces of broken rocks and stones. The social organisation of territorial groups all around the temple had changed; and especially in the later period, the feasting community could no longer assert the dominance and centrality of their ritual cycle. The ritual season itself had slowly turned into being only a seasonal complement of emerging political organisations dominating the territory during the rest of the year, and of their alternative forms of subsistence. But the ritual guardians of the fraternities still had the power to close the place and to leave a clean slate. The weight and the counter-weight of the temple city were now joined to seal the site and abandon its rituals, in order to dissolve the old congregational unity. Corporations also die, as they say. But the skeleton of the city was left intact, like an animal waiting for its resurrection. (... or like a city prepared for future archeologists.) And because the end of the city was an act of deliberate burial, unburying it seemed like the call for restituting a last will - but deciphering the script made for enigmatic reading.

(2.)

Mixing fact, fiction and conjecture in this *quasi una fantasia* mode of writing is obviously much easier to do than to argue with all and only the evidence being provided by the excavations, and meticulously separating already established propositions from mere conjectures. For instance, my sentences about the ecological and seasonal abundance of flora and fauna around Göbekli Tepe are at the moment quite uncontroversial (Benz 2010; Gebel 2013); the ideas about feasting and rituals at Göbekli Tepe have been proposed by many archeologists and the one archeologist who excavated the site (Schmidt 2006, 2010), challenged by some (Banning 2011), but supported by strong evidence (Dietrich *et al.* 2012); the end of Göbekli Tepe has been categorized as a deliberate act from the start (Schmidt 2006); the shift from big gazelles and monuments to smaller gazelles and monuments has been documented (Lang *et al.* 2013); but my sentences about the principles of social organisation are bound to appear like one arbitrary conjecture amongst many others.

"How do I know" and "how does anybody know" that the social organisation of the people of Göbekli Tepe was divided into (at least) three forms? Providing all the evidence for this conjecture would take much space and time, and result in a patchwork of anthropological literature. The shortest version runs like this:
– Hunter-gatherer societies are characterised by seasonal variations (Wengrow and Graeber 2015);
– if there is a period of seasonal abundance and "group harvesting" of flora and fauna, the social organisation is rebuilt for this purpose, and quite radically in cases and seasons of super-abundance, and the rest of the year is spent in relative dispersal, in smaller "bands" scattered all over the territory and following their game animals;
– but also in communal feasting, the organisation is transformed according to the changed objectives;
– hunting leadership and ritual leadership in hunter-gatherer societies normally don't go hand in hand; even in very small societies, they evolve into dualisms of "chieftainship" and "shaman's business" (Lévi-Strauss 1967);

– and if the communal hunting and communal feasting were really organised by the same persons and organisations for each hunting and feasting group all year round, it would be difficult to contain and subdue the antagonisms of these groups and their shifting political alliances over the course of many years, or even within one single year;
– especially during the course of building and visiting a jointly used site, which in this case seems to have been a non-competitive and peaceful enterprise.

Thus, there are arguments, and maybe some good arguments for my conjectures, but there is one fundamental conceptual caveat, the "Göbekli Tepe caveat": The excavation came as a big surprise for archeologists and anthropologists, one of the most surprising historical and archeological discoveries in the last decades. All the arguments we employ to interpret Göbekli Tepe follow the bias of making it less of a surprise, otherwise we couldn't convince anybody else of our reasoning. But the unique appearance of Göbekli Tepe in the archeological record was first of all an occasion to doubt and to refute common assumptions about, for instance the origins of sedentarism and cities, of monumental architecture, standardized iconography and naturalistic sculpture (*cf.* Renfrew 2007). Against the grain of scientific reasoning, considering the initial building period of Göbekli Tepe we probably should look for more refutations to come, for more uniqueness, and not for the emergence of later historical regularities (the topic of Morenz 2014).

(3.)

The excavation of Göbekli Tepe and surrounding sites has been welcomed as evidence of a true "media revolution" and as evidence of the first "fully symbolic culture" (Watkins 2006a, 2006b: 2) or even, in evolutionistic terms, as the jump into "a fully symbolic stage of culture" (Watkins 2006b: 5), with capacities of "external symbolic storage" (Watkins 2006b: 7) unknown before – and even remaining unaccomplished some time after, which gives rise to the idea of a transient "medial optimum" (Gebel 2013: 40) achieved in Göbekli Tepe, and only much later to be achieved again.

To a media studies person like myself, this is exciting news, but not without evoking scepticism. Media scholars and media studies people certainly had their own share of "media revolutions", and always have the next one knocking on the door. "Media revolutions" have been proclaimed for the invention or rather, the distinct inventions of writing, for early modern print, and of course for modern media innovations, the latest being the digital age of networks and mobile platforms. And the terminology of "media revolutions" has indeed been based time and again on the idea of an "external symbolic storage", in negative terms referring to Plato's remarks on writing and memory, and in positive terms as well: writing and print as dispositions to enable more and better knowledge, or even history itself.

Nevertheless, during the last decades hypotheses arguing on the basis of a newly-found or newly invented "external storage" in the archeological record or in media history have met with increasing scepticism. There are strong arguments, especially from linguistic anthropology (Goodwin 2000) and the anthropology of skills (Ingold 2001), to question the identification of a "fully symbolic stage" with the emergence of an "external symbolic storage" that had the good fortune – or the technically necessary permanence – to survive into our times:
– First, verbal language and multimodal interaction can be as "fully symbolic" and "external" as any external storage, after all, they are stored in other people, and not only in their minds, but in their bodily and linguistic interaction chains (Goodwin 2000).
– Second, external storage depends on "embodied skills" like any other use or production of artefacts; and whenever there is something "external" about symbols or media, it has to be "internalized" in "embodied skills" as well. For instance, algorithms and computer programming are not "external" to "embodied skills", not even by running automatically; in fact, computer programmers need embodied skills in order to know what the algorithms and programming are all about and what to do next or how to repair them (Knuth 1974). The same applies to "external" or "externalized" architecture and sculpture and its production or reception (as in erecting and interpreting Göbekli Tepe).
– And third, external storage is not bound to the permanence of built environments, it may also be anchored in transient designs, perishable materials, short display periods at a ritual and immediate destruction afterwards, or in natural landscape configurations like rocks, trees or caves (Kramer 2014).

Myself, I find it hard to believe that the architecture and sculptures of Göbekli Tepe were the invention of an "external storage" that hadn't been possible before (and simultaneously) in more perishable materials (for instance in lodges made of skins, or in sculptures made of wood). Of course, an external storage in stone is different from one in wood or skin, and there are convincing comparisons

of monumental and less monumental material cultures (Wengrow 2003). But there is no reason to believe that external storage itself is bound to an optimum of permanence. Many cultures without writing actively negate the permanent presence of ritual objects, by destroying them after the ritual, by letting them rot or by storing them in a secret place and "renewing" them for each ritual. In these cultures, the idea of ritual repetition and the possibilities of aesthetic variation go hand in hand. Thus, if the argument is about the new "permanence" of "external storage" in stone sculpture, it makes sense to expect that the "storage capacities" of the "symbolic repertoire" were not only extended or enhanced, but also restricted and standardised at Göbekli Tepe – but it will be hard to tell from the surviving non-perishable evidence.

Besides these open questions of an increase or decrease in "external storage", the very idea of a "media revolution" too has recently been criticized as being ambiguous. Does the revolutionary change of media result from media innovation as an early "push" or from its being the late sequel of a non-media "pull"? For instance, the media innovations of the 19th and 20th century can best be understood as consequences of industrialisation and its new material possibilities on the one hand, and the escalation of administrative demands in the wake of industrial products on the other, in their combination leading to the byproduct of nearly all the media innovations we know best (Yates 1989). The invention of writing has been framed in similar terms by C. Lévi-Strauss and followers of his "administrative hypothesis" (Lévi-Strauss 1955), and though this idea remains controversial, it certainly does relativize the idea of an autonomous media revolution, and makes the historian look for other "prime movers" than media. Because the archeological literature stresses the ecological and climatic conditions of the Fertile Crescent and its changing human-animal relationships, there seems to be no necessity to opt for an autonomous "media revolution" in this case, anyway; and Jacques Cauvin's idealistic "birth of the gods" (Cauvin 1997) has now been partly "materialized" and convincingly contextualized (Benz 2010).

A last possible revision concerns the very idea of a "revolution". The French Revolution was a genuine revolution indeed, but as historians have shown (Furet 1988), it took 100 years to create this revolution through re-interpreting an event that was originally emerging in the framework of the Ancien Régime, and – like the Reformation – started as an attempt to accomplish the restitution of an "ancient constitution" (Pocock 1957) and its privileges and liberties. My general impression is, that many archaeologists and other scholars have been overwhelmed by the novelty and the unique antiquity of Göbekli Tepe, and been a bit rash to conclude that the inventions (and media inventions) of Göbekli Tepe were innovations for the future, being adopted by surrounding groups and sites, and thus opening the path towards our culture of monumental buildings, stone sculptures, sanctuaries or even symbolic notations and writing proper. Trevor Watkins made this assumption more than explicit: they were "the first people to be substantially like ourselves" (Watkins 2006b: 2).

I am inclined to proceed from the opposite angle. Maybe these people were the *last* people of the Fertile Crescent to be radically different from everything that happened afterwards, and Göbekli Tepe was not meant to be a starting point for symbolic innovation (in spite of the fact that its accomplishments were indeed used as such a starting point by other groups and their sculptors), but – as in my literary sketch above – stemmed from a conservative or even "reactionary" social movement. If this was a "revolution" and a "media revolution", it may well have been – like so many revolutionary moments in history – first of all a "counter-revolution", an apparently quite successful attempt to "freeze" the transient conditions of seasonal relationships, possibly even more or less replicating the size and style of already existing transitory congregational lodges and rituals, and keeping them open for necessary modifications. What's the evidence for this perspective of a "counter-revolution"?

(4.)

Interpreting the media and arts of Göbekli Tepe, there are two ways of building a case: to assemble a (necessarily incomplete) corpus of images, sculptures and artefacts and compare this corpus with other (and necessarily with many historically later) images, sculptures and symbols (Fig. 1); or to try to fit the media and architecture of Göbekli Tepe into a hypothetical process of ritual mediation (Benz and Bauer 2015). Though this latter method is bound to remain as speculative as the first and seems less philological, I will follow this procedure, and try to derive the "media" of Göbekli Tepe from their possible ritual "mediation".

We just have to imagine what this would mean for our own temples and ritual centers and their events, to know how difficult and even outright impossible this operation is. But we don't have much of a choice: the architecture and sculptures of Göbekli Tepe are the most important evidence of the rituals of Göbekli Tepe people we will probably ever get; and later evidence is bound to remain misleading.

In the remainder of the paper, I will focus on just one of the vexing questions of interpreting the evidence – and the media – of Göbekli Tepe, and probably the most spectacular and speculative of them all:

The iconography of Göbekli Tepe is not about prey animals (or only in a few cases of enigmatic animal combinations), but mostly about superior animals: predators, and especially animals that can be harmful to humans (snakes and other poisonous species; but also felines and other fierce animals, bears, aurochs), and animals that transcend human capacities by their motion or their cunning (birds and foxes). The details of this iconography and the height of the pillars, the multi-perspectival, but realistic views, all this combines to create a sense of animal superiority, or of man-animal agonistics – meet the predators, meet your poisonous enemies, meet the tricksters, *i.e.* meet the tricks that you can't do (flying and cunning).

We can at least try to reconstruct some conditions of this puzzling iconography by referring to the historical and anthropological evidence concerning "super-affluent hunter-gatherers", and the best way would be in three steps:
– concerning hunter-gatherers in general
– concerning the ritual (or religious) activities of hunter-gatherers
– concerning super-affluent hunter-gatherers, *i.e.* how do hunter-gatherers cope with situations of super-abundance, ritually, socially, ecologically?

Concerning topics one and two, I shall be as brief as possible. After decades of discussions about hunter-gatherer cosmologies and new debates concerning "animism" and "perspectivism", only one common denominator remains to characterize forager world views or "ontologies" or "ideologies", and it is a common denominator that was already well known in the anthropological literature of the 1930s and 1940s. Hunter-gatherers are deeply concerned with, or even obsessed with, the reversibility of predator and prey, or, in their own case, hunter and prey. A recent summary by Roberte Hamayon:

"L'espèce humaine est partie prenante dans la 'chaîne alimentaire' qui, selon l'idéologie de la chasse, relie les diverses espèces vivant au sein d'un même milieu. De même que les humains se nourrissent de gibier, de même les esprits des animaux sauvages (incluant rapaces et carnassiers dans des positions intermédiaires) sont censés se nourrir de la force vitale qu'ils sucent dans la chair et le sang des humains." (Hamayon 2003: 42, Fn. 27)

This nagging concern with a reversibility of hunter and prey and of "food chains" in general, seems to be pervasive in all "hunting ideologies", and it becomes aggravated in situations of mass slaughter, especially in collective big-game hunting situations. As far as we can tell from the ethnographic evidence, super-affluent hunter-gatherers are not relieved from the troubling questions of a necessary reversibility or reciprocity between hunter and prey, or between the human predator and other species. On the contrary, they are driven to acknowledge some form of reciprocity by special, and sometimes quite radical ritualistic and personalized means.

There are some pertinent ethnographic reports about situations of super-affluent hunter-gatherers, many of them from North America, especially two groups of documents:
– the very rich and detailed ethnographies of the Northwest Coast and their partly permanent (or seasonally recurring) situations of super-abundance in the 19th and early 20th centuries (Goldman 1975; Walens 1981);
– and the annual bison (or "buffalo") hunting by large groups of hunters in the 18th and 19th centuries, and their rituals before and after the communal hunt (Weltfish 1965; Lawrence 1993).

Of course, North America is a special case with innumerable special cases, and so is everything related to hunter-gatherers – people who very often want to be as different from each other as they can get. And of course, there is no chance to capture the "spirit" or the "spirits" of Göbekli Tepe in North America, because the social and historical situations are totally unlike the PPNA. But we may be able to compare some of the most important traits of the "hunting ideologies" of super-affluent hunter gatherers with each other, and try to distil some general options from their rituals and iconographies, as long as we account for their social and ecological divergences. Super-abundance may or may not have been a rare phenomenon amongst hunter-gatherers historically, in modern times it certainly was, because most hunter-gatherers lived in the marginal zones of empires and postcolonial states, and under precarious ecological and political conditions. Even so, some of the exceptions to this rule provide well-documented evidence how hunter-gatherers could cope with situations of super-abundance:

Ritually, each group or "society" of hunter-gatherers depends on the seasonal vegetation cycle, and it acknowledges the necessity to care for the source of material abundance, and especially for the source or the sources of its regeneration. The rituals of caring for, or taking the responsibility for making regeneration possible, vary a lot, from purifying a "mistress of animals" or killing and symbolically resuscitating a "master of animals", to personifying the common ancestors of both specific groups of
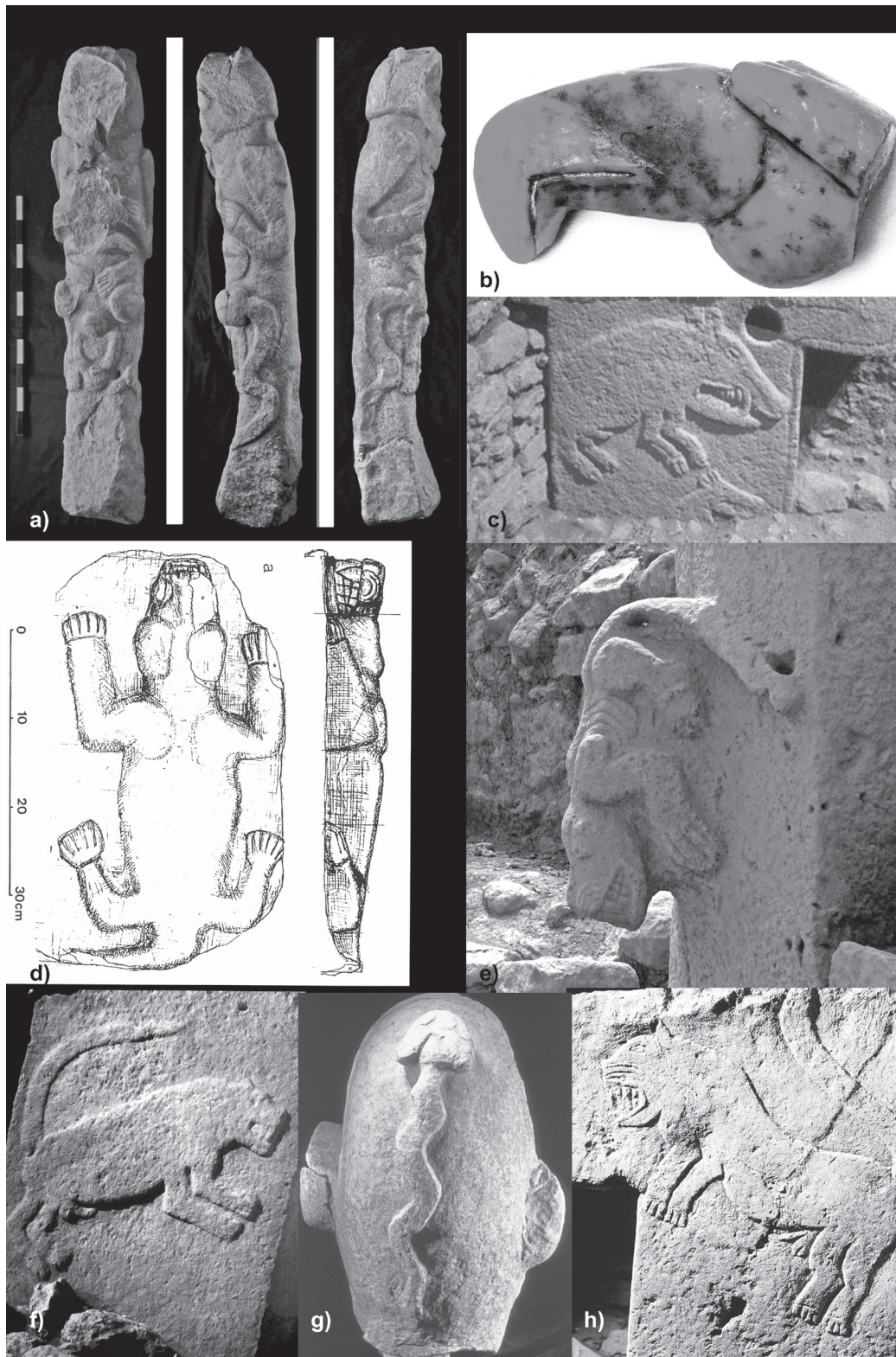
Fig. 1   An Iconography of inescapable oral greed: Göbekli Tepe (and Nevalı Çori): a) so-called "Totem Pole", Göbekli Tepe. (photos: N. Becker, DAI); b) red limestone miniature of a prey bird, possibly a vulture. Göbekli Tepe (Schmidt 2011: Fig. 16); c) depiction of a boar and a fox. Pillar 12 (lower part), Enclosure C, Göbekli Tepe. (Schmidt 2011: Fig. 8); d) relief of a reptile, Göbekli Tepe. (Schmidt 1995: Fig. 1a); e) Pillar 27, Göbekli Tepe. (photo: N. Becker, DAI); f) Pillar VI, Lion Pillar Building, Göbekli Tepe. (Schmidt 2011: Fig. 10); g) Limestone head with snake. Nevalı Çori. Şanlıurfa Müzesi. (photo: By courtesy of Euphrat-Archiv, Berlin-Heidelberg); h) Pillar II, Lion Pillar Building, Göbekli Tepe. (photo: N.Becker). Unless otherwise stated, figures were published without scale.

humans and specific animals to multiply or "reincarnate" them anew, or re-affirming a marriage alliance with one most important animal species. It doesn't make sense to homogenize these rituals, and it is misleading to treat their paradigmatic cases as "prototypes" – all they have in common is, that they make the regeneration of their fauna and especially of their prey animals ritually possible, and in doing so, that they acknowledge the possible reversals of "food chains" or of "being hunted".

In comparing the rituals of hunter-gatherers under conditions of super-abundance, it remains striking, that there seems to be one possible shift of emphasis in these rituals: from prey to predator, *i.e.* from the "Master/Mistress of prey animals" to figures of Master Predators, and the ambivalence between a "bad conscience of regeneration" and an "agonistic regeneration fight", or even forms of spiritual warfare. Of course, the techniques and specialists of spiritual warfare are not missing in non-affluent hunter-gatherer societies, and "masters of animals" can be predators elsewhere, for instance in the bear-complex of the Northern hemisphere (Hallowell 1926). But spiritual warfare is usually confined to one or more prominent persons in charge of that war, *i.e.* "doctors" or "shamans"; and usually, the role of predators being "master of animals" is confined to one privileged animal species only.

At least in North America, in different settings of super-abundance, we observe a confluence of "spiritual warfare" (or "shamanism") and public rituals of regeneration (sometimes in a "totemistic"-form), and a multiplication of predators or even the making of new "super-predators" (Fig. 2). In both cases of hunter-gatherer super-abundance, as a seasonal ritual of bison hunting, and as a stable ecological situation and ranking society in the North-West, there seems to arise a prominent link between the agonistics (or religious competition) of ritual groups and individuals, and the agonistics between human and non-human beings, the latter being symbolical representatives of their animal species or super-human species (Goldman 1975; Weltfish 1965).

One possible conjecture for Göbekli Tepe would be, that the iconography of Göbekli Tepe points in the same direction: an "agonistic regeneration fight" with the Master Predators (and other superior powers). And, if we assume that kind of ritual, we should also expect a kindred agonistics between ritual groups, but an agonistics that pacifies and civilizes the groups and individuals involved, and that puts them to ritual purposes and endeveaours of ritual redistribution. My conjecture is, that this is as close as we can get to the general thrust of Göbekli Tepe iconography: not a cult of the dead, no ancestor cult (as in later monumental architecture), but an agonistic situation between ritual groups (dedicated to ritual labour in preparing and sustaining their rituals, including the building of the architecture), and between human and non-human beings.

(5.)

Why is the situation of super-affluent hunter-gatherers agonistic of some sort? Or why does it become agonistic? Foragers coping with abundance may be characterized by several paradoxes:

An abundance of flora and fauna offers the possibility that there is enough for all members of a forager society to eat and to share. But in seasonal harvesting, access has to be regulated to maximize success for all, and to make sure that each party and each individual can get their respective share; *i.e.* access has to be organized and even policed, with para-military discipline (MacLeod 1937) and heavy sanctions for trespassers during seasonal abundance (Llewellyn and Hoebel 1941: 112-118); or, as on the Northwest Coast, access to food resources – and increasingly to all other resources – is controlled by a totally new form of organisation, *i.e.* in this case: by ranking (Goldman 1975).

The consequence of this organisational challenge and its self-imposed seasonal discipline is a first paradox: Because of (seasonal and/or stored) super-abundance, access becomes a "scarce ressource": not only for some people, but for each and everybody. This is a sea-change compared with small groups of hunter-gatherers roaming through their territory: access for them is not a scarce ressoure, but abundance there isn't, or only in the sense that their wants are few, and may be easily satisfied.

In the case of the bison hunt and the NW coast – and possibly Göbekli Tepe –, there was an "embarras de richesse" entailing a necessary scarcity of access rights to quantities of meat and other food that exceeded each individual's wants. That means, all groups (hunting groups, storing groups, ritual groups in charge of dealing with the seasonal cycle) find themselves in a situation of having to justify their "access rights", either to counter-balance inequalities or to live with them.

The categorization of equal or unequal access to legitimate resources of abundance gives rise to the question of equal or unequal access to the means of accumulating value or reputation – the situation becomes either competitive, or competition has to be diverted and "channelled" by new measures of distributing access, value and reputation. One way of regulating these measures would be to go through a
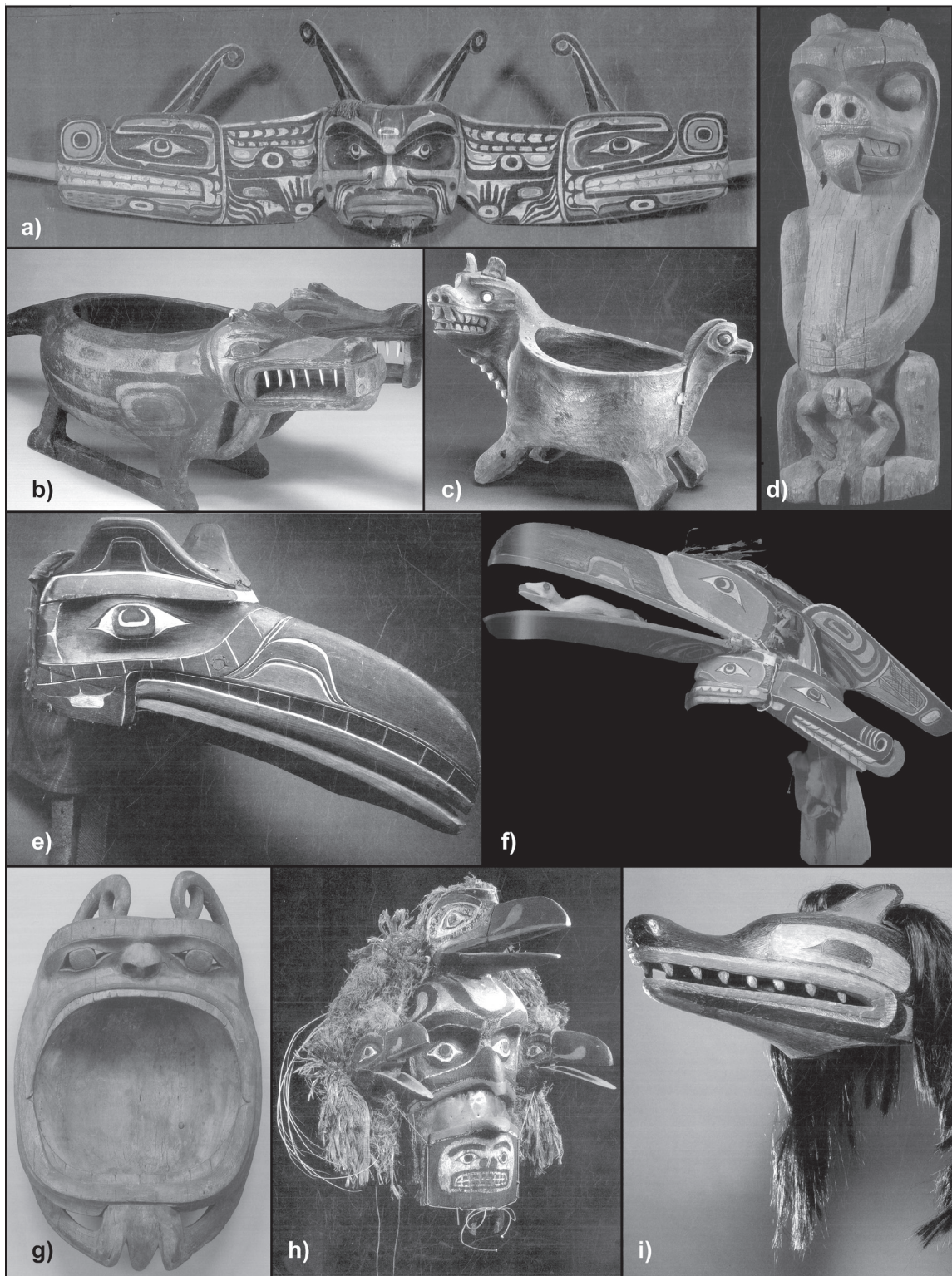
Fig. 2   An iconography of inescapable oral greed: Kwakwaka'wakw: objects collected by George Hunt for Franz Boas and the American Museum of Natural History, with the exception of 1.33. a) Mink's sisiyutl mask, Fort Rupert, collected by George Hunt, 1899 (4.7); b) Double-headed wolf dish (2.8). Quatsino, collected by George Hunt, 1898; c) feast dish (wolf or grizzly bear?) (1.9), collected by George Hunt, 1901; d) grizzly bear figure (2.43). Quatsino, collected by George Hunt, 1900; e) raven mask (3.28). Fort Rupert, collected by George Hunt, possibly created by Bob Harris, 1901; f) Raven and ermine headdress (1.33), confiscated in 1922, returned in 1979; g) devilfish dish (2.42). Quatsino, collected by George Hunt, 1900; h) mask (3.17). Wood, cedar bark, copper, collected by George Hunt, 1904, (cannibal bird, three birds, companions of Cannibal-of-the-North-End-of-the-World); i) wolf mask (2.30). Quatsino, collected by George Hunt, 1900 (Jonaitis 1991).

whole series of ritual re-distributions, in a cycle of invitations and counter-invitations, until the resources of feasting are spent and each and every ritual group has gone through all the necessary reversals of relationships – there is no reason to assume that permanent inequalities of rank and status are necessary corollaries of hunter-gatherer abundance or of their ritual congregations (as demonstrated on the Plains of North America) (Lowie 1954). And even for the Northwest Coast, it has been demonstrated that potlatching had the effect of maximizing the re-distribution of food within the territory.

But the easiest way to control the political factionalism of hunting parties would be to organise the necessary steps of ritual re-distribution via a completely different principle, and this is what happened before and after the bison hunt in many locations of North America (and may well be what made Göbekli Tepe emerge in the first place). The period of feasting would then transform the hunting groups into cross-cutting ritual "fraternities" that are pooling food, labour and knowledge for and during the event, and thus isolating the order of the ritual organisation from the territorial organisations before and after the event. This contrast would not be confined to the ritual center; in fact, there would be preparatory rituals to confirm the pre-eminence of the ritual organisation, and groups participating in the ritual organisation would be allowed or even obliged to make themselves accountable by symbolic media circulating across the congregational network (for instance by forms of "money" or rather "shares" that materialise their rights of access, in stylistic miniatures of some monumental motifs).

The second consequence concerns the transformation of the "hunting ideology" summarised by Roberte Hamayon. A situation of super-affluence that exceeds all capacities of consumption for more than some months, for most hunter-gatherers is a topsy-turvy world, and to restitute a forager sense of realism, there has to be a ritual reversal that sets things straight: to prove that hunter and prey are still on reciprocal terms. And there do not seem to be many options of re-installing a convincing reciprocity of hunter and prey after a mass killing that proves the chilling superiority of the hunting party.
– One option we find in the North American Plains, in the legitimation of bison hunting, would be to stress the "voluntary" character of being killed, for instance by referring to a mythological marriage alliance (Harrod 1987).
– A quite different option we find on the North West coast consists in counter-acting the asymmetrical hunting (or rather fishing) situation, by escalating the superiority of animals as hunters or killers of humans. The animals that one encounters in rituals of seasonal regeneration are then no longer peaceful "masters of animals" or benevolent predators, but become dangerous super-predators, or at least deadly superior to humans by any terms. The ritual quest for regeneration turns into horror and terror – the horror that becomes necessary to re-dress the precarious balance between foragers and the animal world (Goldman 1975; Walens 1981).

In North America at least, this leads to a new and quite paradoxical attitude: to be able to deal with such powerful beings that regenerate and sustain such an overwhelming super-abundance, you have to be strong, cunning and confident indeed, but also modest (like a good hunter), peaceful and even submissive at the same time. Possible ritual sequences for acting out this contradictory attitude are:
– transforming humans into the prey of superior symbolical predators (representing their species), and then turning the initiated humans into personifications of these predators (or into allies of them), to be pacified and civilized by the ritual group (Walens 1981);
– (as in some cases of bison hunting and their harvesting ritual sequels) making a ritual war on the powers that are outside, within a ritual precinct (Weltfish 1965: 260-265);
– staging spectacular shows of "spiritual warfare" and animal mimicry by ritual specialists, and visiting each other in their respective lodges (Weltfish 1965: 276-280).

A slightly fuzzy shorthand expression for these three ritual situations would be the expression that the collective situation turns out to be "shamanistic", but that all performances involved have to be representative not only for curers and their patients, but for corporate groups of hunters. The enhancement of an imaginary reversal of prey/predator relationships remains in focus, especially in some of the impressive anthropological discussions of Kwakwaka'wakw ritual and iconography. The aesthetic escalation and media virtuosity of the Kwakwaka'wakw resulted in rituals full of illusionistic tricks and mimicry: becoming "one of them", initiates behaved like super-predators only to be pacified and civilized by their companions and to behave with perfect etiquette ever after.[2]

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[2] But even the most extreme forms of Kwakwaka'wakw ritualism do not deviate from the general framework of hunter-gatherer mimetic drama; *cf.* Hamayon's summary concerning mimetic play, the entertainment of non-humans, and the objectives of regeneration: "Les participants ordinaires 'jouent' comme les animaux, mais ils 'jouent' entre eux. Leurs 'jeux' respectent des conventions communes, comme tout ce qui se passe entre humains. .... Leurs danses sont un modèle humanisé d'ébats animaux,

(6.)

If this is one of the possible roads of super-affluent hunter-gatherers and their ritual accomplishments of prey/predator-reversals, could this strange road have any relevance for Göbekli Tepe?

We would have to find not only similar designs and images, but a society of super-affluent hunter-gatherers suffering from a similar obligation to consolidate their reproduction (but with quite different social consequences). And though at first glance it seems more than unlikely, the Northwest Coast of North America is a good territory to compare with Göbekli Tepe, exactly because it is so unlike the Fertile Crescent: a dominantly aquatic culture, designing sculptures of wood instead of stone, but also building permanent sites and "points of access" in their landscape (weirs and dams, especially), and developing a quite monumental and illusionistic ritual style, especially developing standardized animal motifs that were repeated, varied, miniaturized, blown-up and recursively incorporated into each other.

It remains striking that both Göbekli Tepe and the ritual network of Göbekli Tepe, at least the most important of these traits were also developed:
– standardized motifs,
– miniaturization (and mobility) of motifs,
– and even some forms of recursive incorporation, even with the superficial resemblance between one Göbekli Tepe "totem pole" and NW "totem poles" (which I shall not go into) (Schmidt 2006: 77-80).

The most striking trait for a stylistic comparison is the standardization and elegant simplification of animal motifs. And there is one more trait that could be relevant for a comparison: on the North West coast, one of the most puzzling visual traits is the symmetrical arrangement of surfaces and the strange trait of "x-ray views" into the interior of an animal. There is a strong and pervasive manipulation of spatial dimensions in looking at visual artefacts, and thus, these motifs are able to endlessly play on possibilities of visual, metaphoric and corporate "incorporation", of food-chains being turned into corporate power relationships, and organic incorporations split open in X-ray fashion for the bewildered gaze (Walens 1981).

Göbekli Tepe, of course, we don't find this "x-ray incorporation" aesthetics.[3] But we do find a pervasive and quite irritating playing with the spatial perspectives built into the pillars and their sculpted animals. They are monumentalized by spectators looking up to them, but they are also sometimes miniaturized and shown as if from above or sideways; they emerge from the walls, often in a menacing posture and with protruding fangs or teeth; and though all of the animals are stylized, they demonstrate a surprising variety of possible views and angles. Going from one animal sculpture to the next – which may or may not have been the case in Göbekli Tepe for visitors or insiders – the sense of realism remains the same, but the sense of perspective changes all the time, from one animal to the next, which is no big deal for modern museum visitors like us after cubist art, but may have been a quite disturbing – or indeed, in more than one sense a "perspectivist" experience – for ritual participants. Thus, comparing North-West coast art and Göbekli Tepe art, it may be fair to say that both combine stylistic standardization and spatial (*i.e.* perspectival) irritation in a most elegant manner. North-West coast art dwells on the recursive incorporation of body outlines as exteriors and interiors; while the Göbekli Tepe combination of realism and changing perspectives makes each animal "jump" into view and at the spectator. These characteristics may in both cases have been part of the agonistic (and cunning) character of visual displays, and of a self-confident illusionism. After all, on the North West coast at least, not only monumental architecture, but also monumental rituals were meant to adress large groups and their representatives, and non-human beings were represented in the rituals by masked performers, seducing and persuading the non-human beings in order to make them acknowledge the equality or even superiority of their human hosts (Walens 1981).

For Göbekli Tepe, we can only assume that the feasting and especially the iconography and sculptures were linked to such kinds of agonistic situations. But guessing from the animal personnel manifested in the sculptures – predators, poisonous animals, dangerous species, cunning foxes and sovereign

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leurs luttes, de combats animaux. ... C'est une sorte d'assurance mutuelle que la participation de chacun donne à tous. Elle s'accompagne d'une sorte de garantie symbolique fournie par l'image que les jeux des humains sont censés renvoyer aux animaux et à leurs esprits, image en miroir qui, dit-on, leur 'plaît', les 'réjouit' car elle stimule aussi dans leur monde la perpétuation. Les esprits animaux ne sont pas, en effet, que des spectateurs à divertir, ils sont surtout, implicitement, les protagonistes indispensables des jeux humains. Là est la raison latente du devoir fait aux humains de 'jouer' pour assurer le renouveau saisonnier du milieu naturel dont ils se nourrissent." (Hamayon 2003: 43)

[3] But there are some animals depicted with protruding ribs, *i.e.* showing what's inside the body on the outside (Schmidt 2013).

masters of flying – and the irritating shifts of perspectives – from above, from below, sideways, minia-turized, blown-up – the ritual encounter with these animals in all probability was not an act of modesty or veneration, but an act of courage and bravery (*cf.* Benz and Bauer 2013).

Not only in North America, moreover, but in all hunter-gatherer societies and their initiation cer-emonies (and especially in shamanism), we can expect ritual inversions of technical hunting sequences, turning hunters into divine prey, making initiates "fall prey" to divine forces and super-human animals or even super-human beings transcending the distinction between men and animals. If hunting opera-tions (Widlok 2015) can be categorized by sequences of:

prey needed – weapons needed – tracking down prey – approaching prey – shooting prey – killing prey – breaking open the corpse – dismembering prey – transport – cooking – consumption of meat

... ritual sequences of initiation, or of turning hunter into prey and into "super-hunter" (Bloch 1992) may well use parts of these sequences to let non-human beings (symbolically)

– track – approach – shoot – kill – break open – dismember – transport – cook and/or – consume humans (initiates).

On the North-West Coast, as in shamanistic initiations, this certainly was the case: ritual sequenc-es of "being hunted" or "becoming prey" were the basis for the ritual sequences of initiation, and the ritual encounters were filled with figures of predators (bears, killer whales *etc.*) or even with imaginary "super-human/super-animal predators" (for instance the "Cannibal of the North" and other North West Coast creatures of horror, splatter and gore). Indeed, on the North West Coast, the "super-human/su-per-animal predators" ranked higher than their companion animal predators; only by ritually falling prey to them and mimetically becoming "one of them" initiates could attain the highest ranks in the ritual and social organisations (Walens 1981; Wolf 1999).[4]

And it seems that bison hunting on the North American Plains too, was both mediated through ritual activities of "acting like a bison" and with a torturous way of "falling prey" to the forces of sea-sonal regeneration and bison regeneration – at least this seems to be one possible interpretation of the ritual Sun Dance in the context of its seasonal position and in the historical context of early 18th cen-tury's bison hunt (though always mixed with expectations of warfare and revenge in the 19th century) (Lawrence 1993: 33-34).

Of course, we will never know what the poisonous, deadly and terrifying animals of Göbekli Tepe – its "horror picture show" or "pandaemonium" or "inferno" – meant for the ritual participants. But from the zoological details (Peters and Schmidt 2004) we can generalize that humans living around Göbekli Tepe did indeed live with the imminent danger of falling prey to the animals depicted, and that hunters sometimes turned into prey encountering them, and avoided this reversal of roles by practically acknowledging their partial inferiority. It remains striking that modern visitors (and virtual visitors) of Göbekli Tepe find the experience menacing and uncanny too, after so many years. And indeed, the me-diascape of Göbekli Tepe is a "viewing machine" as good as any cinema or video installation, carefully directed as a "mise-en-scène" of animal depictions "jumping" at the spectator from many angles, or of turning spectators into the potential prey of animals. My proposal is to take this common denomi-nator seriously: that the animal iconography of Göbekli Tepe was part of a ritual sequence of turning "hunter into prey" (Bloch 1992), in order to re-balance the cosmic "food chain"; and in order to pacify and civilize a congregation of diverse hunting groups, being ceremonially re-shuffled after weeks of mass-slaughter and in the midst of feasting and re-distributing food. To turn the meeting-place of the congregational site into stone, to make it partly unalterable, was but one additional way of "hammering home" the superiority of the ritual organisation, and the superiority of the non-human beings that were able to redress the cosmic balance of a persistent "hunting ideology" in full bloom.

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[4]   A short summary of the cosmological foundation: "The Kwakiutl world is one where countless varieties of animals all kill and destroy to satisfy their hunger, united in a common bond of becoming food for each other, all active participants in an intricately interdependent system of resurrection. It is a world filled with the gaping maws of killer whales, the fearsome teeth of wolves, bears, seals, and spawning salmon, the tearing beaks of eagles, ravens, owls, and hawks, and the unending voraciousness of rodents, lizards, frogs, and snakes. It is a world filled with images of mouths, and of the death they bring to the creatures of the world. ... Mythical extensions of animals ... are always carnivorous. ... The Kwakiutl stands in a special relationship to one class of animal in particular, the predator, especially those predators who, in some way, feast off either hu-mans or salmon. ... In point of fact, most crest animals actually do eat humans, either live humans (killer whales, wolves, and bears) or dead humans (eagles and ravens). Thus, because these animals are all direct links in the cycle of resurrection for both humans and salmon, they are themselves by definition humans. Like all animals, they are considered to be humans who have donned magical masks and blankets (skins), which transform them into the animals seen in daily life." (Walens 1981: 100-101)

(7.)

Even if this speculation helps to elucidate some of the most striking features of Göbekli Tepe, other aspects are bound to remain as puzzling as before. I can only address two of them, the "realism" or "naturalism" of animal representation, and its apparent contrast with the T-shaped pillars in their midst.

It seems that at least some groups living on historical and archeological sites of abundance or "super-abundance" – and no others? – have created "viewing installations" that were explicitly geared for the surprising effects of life-likeness and illusionistic sleight-of-hand (as in naturalistic cave painting; or in full-blown dramas with "special effects" for a ritual stage, for instance with the Kwakwaka'wakw; in Nature Morte painting; and, of course, in modern cinema and chronophotography). Leaving aside all other forms of naturalism, it seems that a close link between material super-affluence and hyper-realistic art is consistent with what we know about hunter-gatherers.

First, naturalistic art may have been used as a "lingua franca" for quite diverse social and linguistic groups meeting at a seasonal cross-roads of abundance, an artistic idiom that ignored differences of culture, ancestry and social status and focused on the retinal and faunal "world in common".

Secondly, in hunter-gatherer art, artistic reasoning may be directed towards the urge to lure and seduce the non-humans by erecting a pleasing but ambiguos "mirror image" (*cf.* Walens 1981). To re-quote R. Hamayon (2003: 43): "Les jeux des humains sont censés renvoyer aux animaux et à leurs esprits, image en miroir qui, dit-on, leur 'plaît', les 'réjouit' car elle stimule aussi dans leur monde la perpétuation. Les esprits animaux ne sont pas, en effet, que des spectateurs à divertir, ils sont surtout, implicitement, les protagonistes indispensables des jeux humains." In historical times and spaces of super-affluence the task of pleasing the non-human guardians responsible for the well-being of humans and non-humans may escalate into specialized art forms; and rendering the exceptional state of faunal abundance via illusionistic "mirror images" of faunal abundance *and* faunal realism may be one way to please and seduce human and non-human beings alike. After all, in situations of abundance, human and non-human groups of predators have the same seasonal objectives or "congruency of relevances" and even a certain "interchangeability of standpoints". For instance, on the NW Coast, bears and humans prepare for months in advance to be in time for the salmons arriving on the coast and up the rivers; a similar rhythmic interweaving of human and non-human predators preparing for gazelle and other game must have been characteristic for the region around Göbekli Tepe – which may have made it necessary to ritually honor, invite and incorporate their spirits before and after the harvesting season.

Of course, any comparison of recent hunter-gatherer cultures and Göbekli Tepe is bound to remain oblique at best, and offers only a "diagonal" perspective across very different and even diametrically unlike social organisations. Judging from the archeological evidence, I do recommend the "horror and terror" comparison with the North American NW Coast (and especially Kwakwaka'wakw iconography and ritualism), but I remain unconvinced of looking for a similar social organisation, *i.e.* ranking and all that it implied on the NW Coast. Instead, a democratic Plains and Prairies organisation entailing a strict "hunting police" and disciplined seasonal feasting (before and after the hunt) seems a possible candidate for explaining the congregational organisation.

And even in iconographical terms, my interpretation is bound to remain incomplete, because I do hesitate to include the most important element of Göbekli Tepe architecture and sculpture in the "horror and terror" realm, *i.e.* the anthropomorphic T-shaped pillars. After all, these anthropomorphic figures – and in spite of their abstraction they are characterized by anthropomorphic features and clothing – don't show any mouths, *i.e.* they seem to be exempt from surrounding prey-predator-relationships. Whatever their status – are they abstracted super-humans? Are they the true "masters of animals" ruling the animal and predator realms? Are they the true, *i.e.* human appearances of the predator animals when "being amongst themselves", turned into humans and only appearing to be animals to humans? Whatever their unknown status is, I would argue that this "absence of orality" is their most striking feature, and may be in one sense or another their "function". The ritual precinct is dominated by figures that are "beyond predation", because they are "beyond orality". There seem to be three realms of beings: outside, the mass killing and ritual feasting on prey animals; inside, initiation procedures centering on being turned into the prey of predators (with no zoological overlap between the prey animals outside and the predator animals inside); and ruling these initiation procedures and their multi-perspectival iconographies, strictly vertical beings "beyond orality", beings that "do not show their mouths" (differing from the prey-predator world around them drastically showing teeth, fangs and ribs).

And to follow the lure of comparisons, one more time... "Not to show one's mouth while eating" is one of the central tenets of Kwakwaka'wakw etiquette (Walens 1981: Ch. II), *i.e.* within a culture and icono-   graphy obsessed with oral greed and eating, etiquette consisted in accomplishing the symboli-

cal negation of eating and especially the avoidance of any sign of oral greed. The representation of oral greed and aggression was ubiquitous, but corporate persons, individuals included, were supposed not to succumb to any kind of greed and to perform aggression artfully to have it ritually tamed. In Göbekli Tepe, the representation of oral greed and aggression is ubiquitous too, and this may point to a quite similar split between the representation of oral greed and a ritually sanctioned corporate morality. Maybe the T-shaped beings epitomize this split? Obviously, at the moment this question is bound to remain a matter of speculation.

(8.)

Being an amateur, writing this essay has been quite a challenge for me, feeling compelled – against my best intentions – to follow the idiosyncratic options of super-affluent hunter-gatherers I didn't find in the archeological literature, but that I was familiar with from anthropology. Following this lure, I had to go against the grain of traditional "media revolution" assumptions too, and stress the priority of ritual mediation, and of transient ritual practice – in spite of the uncomfortable fact that at least some of the ritual media of Göbekli Tepe are well-documented and seem to have been crucial historical inventions leading to all sorts of media innovations indeed, and that their initial rituals are bound to remain obscure. Because this line of reasoning led me to write a media anthropological *tour de force* and transformed all my arguments into the *quasi una fantasia* mode I initially wanted to avoid, all I can do is to return to the "Göbekli Tepe caveat" spelled out above.

The world-wide centers of initial domestication have recently been identified with affluent or rather, super-affluent hunter-gatherer formations (Zeder 2015), though this new development corroborates old ideas about "harvesting people" ("Erntevölker") as the intermediate step between foraging and domestication. The historical road now does not seem to have led from scarcity to initial domestication, but from affluent to super-affluent hunter-gatherers or "harvesting cultures" to initial domestication, with or without a bottleneck of diminishing returns in between, with or without the sequels of full-blown domestication and farming. The area around Göbekli Tepe seems to have been one of these centers of initial domestication, and one of the most important for later Eurasian and world history. But in Göbekli Tepe itself, up to now at least, there are no traces of domestication – and thus, there is no possibility to conclude anything from later developments of domestication concerning the foundations of Göbekli Tepe – and the other way round as well, because the radical predator iconography of Göbekli Tepe doesn't seem to give much of a clue for the development of initial domestication in the Fertile Crescent. (After all, we wouldn't expect much of a clue concerning domestication from old North West Coast ritualism, though, of course, we could learn a lot about cultivating a landscape for seasonal abundance by studying the context of those rituals.)

In this sense, I do agree with H.G.K. Gebel's strong argument against a "Göbeklisation of Neolithic research" (Gebel 2013: 39), and, if I understand him correctly, against a normalised "Neolithisation" of Göbekli Tepe in return. The initial constitution of Göbekli Tepe was probably not a Big Bang of things to come, but gives us a monumental glimpse into an exuberant past, and if thousands of years can be but one wink of the eye: provides us with a monumental "freeze frame" and "jump cut" (between the different layers of Göbekli Tepe) reaching back into a transitory past or even a *Longue Durée* of "hunting ideologies" *before* any emergence of domestication. And it seems that the monumental architecture of Göbekli Tepe was meant to "freeze" and to pacify the ritual relationships of human, animal and non-human beings, before these relationships finally broke apart and Göbkeli Tepe was deliberately "buried" and made unusable. Of course, Göbekli Tepe can be read both ways, pointing towards a future, "our future", and hinting at an unknown past. But in the last resort, because theirs was the first step to initiate so many unforeseeable things to come, what we are dealing with is a crucial moment – and apparently, a quite deliberate denial – that could not have shared our understandings of animals, social reproduction or monumental media.

Acknowledgements

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