

BUILDING HOUSES, FRAMING CONCEPTS, CONSTRUCTING WORLDS¹

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Abstract : *The thesis proposed here is that architecture exploded in the early Neolithic of southwest Asia as a novel and powerful system of symbolic representation, the scaffolding of a pre-literate mode of external symbolic storage. The ability to construct settlements, houses and public buildings that represented constructs of the world that they inhabited allowed new kinds of human society to evolve. By comparing the long Epipalaeolithic period and the trend towards sedentary village life with the rich architectural symbolism of the early Neolithic, we establish the archaeological grounds on which the interpretations are to be founded. Contemporary architects, anthropologists and respected modern social thinkers agree that architecture is indeed a very powerful form of symbolic representation. However, we need to establish why the capacity of human societies to produce such concrete symbolic forms should arise at the end of the Pleistocene and the beginning of the Holocene period. The answer, it is argued, is to be found in theories of the evolution of the human mind, and particularly in the co-evolution of human cognitive faculties and culture. The work of the psychologist Merlin Donald is of fundamental importance in this regard, especially his ideas concerning external symbolic storage systems. Architecture as a mode of external symbolic storage allowed Neolithic communities to become the first humans to inhabit a "built environment" rich in symbolic meaning, making possible the emergence of new, larger and more complex forms of social organization.*

Résumé : *Cet article de réflexion suggère qu'en Asie du Sud-Ouest, au début du néolithique, l'architecture traduit soudainement un système de représentation symbolique fort puissant, jusque là inconnu. On peut y voir l'ossature d'un système d'enregistrement de symboles et ce, avant même l'apparition des premiers textes. L'aptitude à créer des établissements, à construire maisons et bâtiments publics, structures du monde dans lequel vivaient les Néolithiques, permit aux sociétés humaines d'évoluer vers de nouvelles formes. La comparaison de la longue période Epipaléolithique avec celle qui voit l'aboutissement à un mode de vie sédentaire et villageois imprégné, au début du Néolithique, d'un symbolisme architectural très riche, permet de fonder sur des bases solides les interprétations que nous proposons. Architectes, anthropologues ou sociologues contemporains de renom, s'accordent à penser que l'architecture est un mode de représentation symbolique très performant. Cependant il convient d'établir les raisons qui firent qu'à la fin du Pléistocène et au début de l'Holocène les sociétés humaines eurent la capacité de produire de telles formes concrètes de symboles.*

L'hypothèse que nous proposons doit être recherchée dans les théories de l'évolution de la pensée humaine et en particulier dans l'évolution parallèle des facultés cognitives et de la culture. Nous nous appuyons dans notre démarche sur les travaux du psychologue Merlin Donald qui nous sont apparus être à cet égard fondamentaux et, plus spécifiquement, sur ses idées concernant les systèmes externes d'enregistrement des symboles. L'architecture, en tant que mode de sauvegarde des symboles, permet aux communautés néolithiques de devenir les premières à vivre dans un « environnement construit » riche en significations symboliques, qui rendit possible l'émergence de nouvelles formes d'organisation sociale, à la fois plus vastes et plus complexes.

Key-Words : *Neolithic, Architecture, Cognitive archeology, Religion.*

Mots Clefs : *Néolithique, Architecture, Archéologie cognitive, Religion.*

1. The first version of this paper was a presentation at the 3rd International Congress of Archaeology of the Ancient Near East, in Paris, May 2002. Like that presentation, this paper is dedicated to the memory of Jacques Cauvin. The ideas developed here have moved on from the original conference paper, because theoretical work in neuroscience and cognitive psychology, on which the ideas in this paper depend, is moving very quickly. In that regard, this paper, like its original, should be considered as work in progress, and by no means a fully worked through and finished piece of work.

ties and stored for future consumption. The storage of cereal grains, grass seeds, and a range of pulses meant that people became as sedentary as they wished, living part of the year, much of the year, or the whole of the year in village communities. Being located for part or all of the year in one place, relying almost entirely on the territory that could be exploited immediately in turn involved significant modification to hunting strategies.

As we can see from the site of Ohalo II in north Israel, dated by radiocarbon around 19 000 BP, the end of the Last Glacial Maximum period, some hunter-gatherer societies were developing these new settlement and subsistence strategies at the end of the Upper Palaeolithic and the beginning of the Epipalaeolithic period⁸. On the rich bio-archaeological evidence recovered from Ohalo II, it is suggested that the site was occupied at all seasons of the year⁹. By the last phase of the Epipalaeolithic, Period 1 in the *Maison de l'Orient* chronological scheme, equivalent to the Natufian in Israel and Jordan (12 000-10 200 BC calibrated), some communities had become fully or effectively sedentary, living in permanent village communities and permanent built environments.

There are interesting signs in the final Epipalaeolithic period that presage Neolithic developments. For example, Valla¹⁰ has discussed the large and unique structure 131 at Eynan, and shown how the large buildings of the early period of occupation at the settlement were probably sited relative to clusters of already existing burials at a lower level. However, as Cauvin has argued, there is a relative burst of symbolic activity from the beginning of the Neolithic, Period 2, equivalent to the PPNA of the Levantine region (10 200-8 800 BC). The construction of symbols, however, goes well beyond the female figures and bull representations to which Cauvin drew particular attention. Communities of the earliest Neolithic showed a great deal of cultural concern with the architecture of buildings and the organization of whole settlements. Personal experience no doubt colours our views, and the present author's approach was much affected by the experience of excavating Qermez Dere in north Iraq¹¹.

The whole settlement had been laid out in two contrasting halves that performed complementary functions: in one part, circular houses were excavated into a stiff, red clay, their walls and floors coated with plaster, and in the other part, all the occupation debris was piled up. Part way through its life,

the village was re-formed, but once again in two complementary halves. This time, the southern half of the site was used for houses that were dug into what had been the dumping area, and all sorts of processing activities were carried out in the area that had been residential. The domestic buildings were extraordinary for the care with which they were built and the persistent maintenance and renovation that was lavished on them. They were also extraordinary for the pairs of non-structural pillar-like features. I wrote that these houses reminded me of the ways in which we, in our cultural traditions, have made our houses into "homes". "Home", I later learned, is an example of a social construct¹²: the people of the Neolithic were able to think in terms of the same sort of cultural abstractions as modern humanity. For us, "home" corresponds to the social construct of the family, and we cannot assume that the same correspondence applies in other cultural contexts. The issue in this essay, however, is not the identification of the basic social structure of prehistoric communities, but their new cultural facility in constructing symbolic worlds represented in architecture, the built environment and its fixtures, fittings and furniture.

In southeast Turkey, we have learned of a series of early Neolithic settlements, all showing a concern with the organization of the settlement, and the creation of monumental buildings. For the sake of brevity, we can do no more than mention Hallan Çemi, on the Batman Su¹³, which dates to Period 2, the early aceramic Neolithic, contemporary with the earliest (round house) occupation of Çayönü and, in north Iraq, Qermez Dere, Nemrik and M'lefaat. In the latest of its three building phases, Hallan Çemi had two circular buildings that were different from the domestic structures around them. These special buildings were five times larger than the ordinary domestic structures in this and the earlier levels; they were 5-6 m in diameter, which is approximately 25 m² of floor area, whereas the houses were around 2.5 m across, less than 5 m² in area. They were fully circular (that is, with no opening in the wall for a doorway), and at least semi-subterranean, whereas all the ordinary buildings were built on the ground surface. Each of the special buildings had a semi-circle of stone-built bench against the wall. The floors of both buildings had been repeatedly remade, using sand and plaster over a culturally sterile bed of soil. The special buildings lacked the signs of everyday life, but exotic materials (copper ore and

8. NADEL and WERKER, 1999.

9. KISLEV *et al.*, 1992.

10. VALLA, 1990, 1991.

11. WATKINS *et al.*, 1995; WATKINS, 1990, 1992.

12. SEARLE, 1995.

13. ROSENBERG, 1994, 1998, 1999; ROSENBERG and DAVIS, 1992; ROSENBERG *et al.*, 1995.

structure so far excavated has been found to have been deliberately and completely refilled with the stony matrix material at the end of its "life". The structures range in date from the later aceramic Neolithic, comparable to Nevalı Çori, back almost to the beginning of the Neolithic (at least 9 500 BC). The latest structure is the smallest, and it is generally similar in shape, construction and fittings to the "shrine" at the centre of Nevalı Çori. The latest structures contain the smallest monoliths with the least amount of figurative decoration. The earlier structures are larger, sub-circular, and contain more monoliths that are themselves much larger (up to 5 m tall) and more elaborately carved. In each enclosure, there is an opposed pair of T-shaped limestone monoliths (and the places where they were quarried can be seen on the eroded limestone surfaces all around the mound itself). In the earlier structures, more of the monoliths were erected around the perimeter of the enclosure, set at right angles to the retaining wall with their bases in a stone-built bench. Some of the early structures can be seen to have been rebuilt. Their second form was erected within the earlier retaining wall, the space between the old and the new walls being filled with stone debris. Some of the T-shaped monoliths seem to have been re-sited, their sculptured animals partly or completely hidden where they have been built into (or perhaps embodied within) a retaining wall. As at Nevalı Çori, there are other sculptured stones that have been found where they were dumped. The T-shaped monoliths were intended to be anthropomorphic, as they share the same features as those from Nevalı Çori, and one or two have arms and hands carved in very low relief. The raised relief sculpted onto the surfaces of the monoliths is almost entirely of wild (and dangerous) animals, large birds, snakes, lizards and scorpions.

While Göbekli Tepe is so far unique, Neolithic settlement sites, displaying structuring of the settlement, architectural care with the design of houses, and the construction of communal, (semi-)subterranean buildings, are not confined to southeast Anatolia. Jerf el Ahmar, on the Euphrates in north Syria, close to the frontier with Turkey, and about 40 km north of Tell Mureybet, was excavated in the 1990s ahead of drowning in another dam-scheme²¹. It belongs to Period 2, the earliest aceramic Neolithic period, coming to an end as Period 3 began. In an open space at the centre of the village in its first phase, there existed a large, fully subterranean building (EA 30). The floor of the structure was more than 2 m below the

surface, and the elliptical building ranged between 6.80 and 7.40 across. Stordeur believes it was "communautaire", a communal or public building, and argues that it was "polyvalent", or multi-functional. Stordeur believes that it was at the same time a communal food storage facility and a building with religious functions, where meetings and rituals may have taken place. At the end of its life, it was emptied, a human head was placed in it, and in the central area a decapitated body was spread-eagled. And then the structure was destroyed by fire, its burning roof collapsing on the decapitated body. Finally, the structure was obliterated as the cavity left by its destruction was filled with soil. Stordeur²² has compared this building with a very similar, large, circular, (semi-) subterranean building at Tell Mureybet, "maison 47", of very similar date. At the very end of the excavations, as the waters were rising, a second, similar, cellular building (EA 7) was found, dating later in the stratigraphic sequence of the eastern part of the settlement²³. It seems to have been the replacement for EA 30. Two human skulls had been deposited in a recess at the base of one of the post-holes for the posts that supported its roof, a foundation deposit that mirrored the skull and corpse that had been placed in EA 30 at the end of its life.

In the western part of the settlement, at a later date again, another large subterranean building was constructed (EA 53) on the same general scale as the earlier buildings, but internally quite different. Like EA 30, it was a complex construction with a double skin of walls, the inner of which included a number of vertical timber posts. The circular interior had a bench running around the wall, and the bench had a kerb formed of large limestone slabs, decorated with a frieze of pendant triangles in relief. Six large roof support posts of fir (*Abies*), which must have been brought from some distance, were set in post-holes at regular intervals in the kerb. Finally, Stordeur²⁴ mentions briefly another, similar structure that was found only as the waters rose into the excavations. It, too, had a kerb great of limestone slabs, each with a frieze of pendant triangles along its top edge. One of the slabs was also carved with an additional design that seems to have been a schematic representation of a headless human body. And that slab was flanked by two, tall stelae topped with vulture-like heads and a "collar" of pendant triangles at the "neck".

Dating shortly after the abandonment of Jerf el Ahmar, at the very beginning of Period 3, the nearby settlement of

21. STORDEUR 1998a, b, 1999, 2000 ; STORDEUR et JAMMOUS, 1995 ; STORDEUR *et al.* 1996, 1997, 2000.

22. STORDEUR, 2000 : 31, 32 et 36.

23. *Ibid.* : 32 et 36.

24. *Ibid.* : 40 et fig. 11.

marked by an emphasis on “focus”²⁹, whereas sedentary “domesticated” societies are distinguished by an emphasis on the “boundary”³⁰. The adoption of sedentism was, he says, “a significant evolutionary event” because it challenged people’s natural, evolved dependence on paying constant attention to one another. On the one hand, the change to living in a village of houses posed challenges, but on the other hand it also opened new possibilities. Wilson³¹ writes: “Architecture is a materialization of structure, and the adoption of architecture as a permanent feature of life introduces spatial organization and allocation as an ordering visual dimension”. People naturally recognized the analogue between built village and community, house and household, and those analogues might readily be extended to further analogues between the built environment that they create and inhabit and the world in which they live. Along with a number of anthropologists, Wilson discusses the frequent examples of sedentary societies whose lives are structured in conformity with the structure of their villages and their houses. Like other anthropologists, Wilson can cite examples of sedentary societies whose ideas about the organization of the cosmos are modelled in the structuring of their houses and their settlement.

This is not the place to expound this matter at length, but there are good examples of anthropologists who believe that the house as architecture is of great significance in the representation of ideas about the structure of the world. Lévi-Strauss has written extensively on the house as a social form, proposing house-based societies – *sociétés à maison* – as an additional category, not based in kinship, in the typology of social organization³². In the view of Carsten and Hugh-Jones³³ Lévi-Strauss’ theory of house societies “appears to represent at once a less deterministic, rule-bound version of his structuralism, a continuation of the general theory of kinship... and an extension of this theory to cognatic or bilateral kinship systems”. Lévi-Strauss developed his ideas about *sociétés à maison* in response to the difficulties that anthropologists had in fitting the Pacific North-West coast people, the Kwakiutl (sedentary hunter-gatherers, we may note) within the accepted kinship categories. He was also impressed by the work of the Annaliste historian Georges Duby on the institution of noble houses in medieval France. As the contributors to Carsten and Hugh-Jones’³⁴ collection show, house-

based societies are to be found in many parts of the ethnographic world. Interestingly, Lévi-Strauss argued that *sociétés à maison* are an intermediate form between elementary types of society and complex, that is hierarchical, societies. The house as an institution provides the social group with a means of avoiding simple unilineal descent, of developing continuity through time, and of accommodating both material and immaterial wealth. In passing, we may also note that post-structuralist and social thinkers such as Bourdieu, Derrida and Giddens also say that the house serves as a structuring instrument. We are clearly in good company. It would be better if we could draw on the support of anthropologists and archaeologists.

Some anthropologists and archaeologists have taken an interest in the physical characteristics of houses and the building process, but few³⁵ have considered the house as an institution, and the interplay between house form, social group and cultural ideas. There is an interesting parallel between the purpose of Carsten and Hugh-Jones³⁶ in stimulating anthropological interest in the social and cultural significance of house architecture, and the collection of essays on the social archaeology of house by Samson³⁷. Architects obviously believe in the importance of architecture, but are mostly concerned with contemporary or recent Western architecture in their writings. One quotation from one of the most eminent of writers on historical and contemporary architecture will suffice. If we want to see how architecture in simple societies can bring together the social, cultural and meta-physical with the physical, we should turn rather to the work of a few distinctive architects. The architect most cited by anthropologists and other architects with an interest in the architecture of simple, small-scale societies is Amos Rapoport³⁸. Having surveyed the disparate recorded information on house architecture among small-scale societies, and having also surveyed the general literature on the subject, Rapoport draws the conclusion that the variety of architectural forms, and the different ways in which they were occupied and used, cannot be explained simply as responses to the need for shelter from the elements in different environments or the availability of potential building materials. Such variety of response can only be explained in terms

29. *Ibid.* : 31.

30. *Ibid.* : 57-58.

31. *Ibid.* : 61.

32. LÉVI-STRAUSS, 1979 [1983a], 1983b, 1984, 1987, 1989, 1991.

33. CARSTEN and HUGH-JONES, 1995 : 9.

34. CARSTEN and HUGH-JONES, 1995.

35. Few, that is, that I have come across, but I am poorly versed in anthropology and read mainly in English. The anthropologist Peter Wilson (1988) is an exception, the more so for taking a cognitive approach.

36. CARSTEN and HUGH-JONES, 1995.

37. SAMSON, 1990.

38. RAPOPORT, 1969, 1982.

We do not need to concern ourselves with most of the process of the evolution of the human mind, language and culture. We can take as our starting point the emergence of a full modern language faculty, that is, the use of language of the same kind and sophistication as all the languages in today's world. Historical and theoretical linguists have major differences of view concerning the evolutionary development of language, but they are relatively agreed that *Homo sapiens* have used language as contemporary humans use language for 50 000 or 100 000 years. The significance of a full modern language faculty is that making speech or comprehending heard statements depend on our cognitive ability to handle systems of symbolic representation. Language involves much more than knowing the relationship between words and their given meanings. Words and the things that they refer to are indexical references, in the terms defined by the American philosopher and semiologist Charles Peirce⁴¹. Symbolic reference, as explained by Deacon, means that the tokens (words in the case of language) are given meaning by reference to and in contradistinction with each other. A statement, in short, is much more than sum of the indexical (dictionary) references of the words. The potential relations among words also help to make a further point about the complexity of symbolic systems. The references among words are at one level syntactic, but there are other kinds of reference, such as semantic relations. The only species that has been shown to be capable of managing the cognitive sophistication involved in language (a system of symbolic representation) is *Homo sapiens*. If linguists are correct in their estimation of the time when humans first used fully modern language, then that is the time at which the cognitive ability to deal in systems of symbolic representation were present.

What we are concerned with is the first recognition that culture, and in particular material culture, can be used to develop other, non-verbal systems of symbolic representation. There are several cognitive psychologists, linguists and neuro-scientists working on the general idea of cognitive and cultural co-evolution – an evolutionary process where human minds/brains are stimulated by developments in culture into new ways of thinking and representing ideas. Cognitive and cultural co-evolution consists of positive feedback loops where human minds develop not just new ideas but new cultural media that in turn engender new ways for minds to think. The most obvious examples of such cognitive-cultural co-evolutionary revolutions are the emergence of a full, modern

language capacity, and the development of writing. In company with a number of archaeologists, I have found Merlin Donald's ideas and arguments on the co-evolution of mind and culture stimulating and very exciting⁴².

The essence of Donald's hypothesis is that the modern human mind has evolved further and further from the primate mind by means of a series of three major adaptations, each of which was driven by the emergence of a new representational system. Language, in the form in which we know it around our world, was the second of the modes of representation. We don't need to concern ourselves with the earliest, mimetic stage in the process, the first step beyond the cognitive faculties of other primates. Mimetic culture, Donald says, depended on mimesis, non-verbal action-modelling. Mimesis was "a revolution in skill, gesture (including vocal), non-verbal communication, shared attention" and mimetic culture could support limited public storage and transmission of knowledge. It was "a slow-moving prototype of human culture". Here, our interest begins when what Donald calls Mythic culture emerges. Mythic culture is the form that is supported by the use of languages similar in general terms to those that we can find around the world today, and most scholars are agreed that full modern language emerged in *Homo sapiens* by or before 50 000 years ago. Mythic culture is oral culture, whose "governing representations consist of a shared narrative tradition". Language, Donald explains, gives us a much more powerful means of explicit recall from memory, the ability to address and organize knowledge, and make it accessible to further reflection.

Evolutionary psychologists, some anthropologists and a number of archaeologists have tended to take the view that, with the development of a full modern language faculty, the appearance of the first "art" (before 30 000 years ago, in the European Upper Palaeolithic) and certain other kinds of behaviour patterns (such as the use of personal ornaments, ceremonial burial of the dead, use of red ochre), the modern human mind can be seen to have emerged⁴³. There are those who have sought to test this notion of a "human revolution" (that is, the revolutionary emergence of cognitively modern humans) against the archaeological evidence, and have found it wanting⁴⁴. Renfrew⁴⁵ has also challenged this view, arguing that "modern" human behaviour did not seem to be evident in

42. DONALD, 1991, 2001.

43. For example, MELLARS and STRINGER (eds), 1989 ; MITHEN, 1996a, 1996 ; MELLARS and GIBSON (eds), 1996.

44. For example, D'ERRICO *et al.*, 2003.

45. RENFREW, 1996.

41. Discussed conveniently, lucidly and in the context of language by DEACON, 1997.

BUILDING HOUSES, CONSTRUCTING WORLDS

The thesis proposed in this final section of the paper is that sedentary hunter-gatherer communities of the beginning of the Neolithic period were the first in human history to construct systems of symbolic representation using their buildings in combination, no doubt, with rituals and prescribed behaviour patterns. The essential framework of these symbolic systems was the built environment of their settlements, which were designed to act as external symbolic storage networks. Architecture is a specially powerful mode of external symbolic storage, for the built environment actually constitutes our way of living, makes concrete our social institutions, frames our perceptions and forms the arena within which social and other relations are played out. The settlements and buildings of the end of the Epipalaeolithic and the Neolithic periods, it seems to me, show clearly that people had begun to realize the symbolic power of architecture. We may appreciate the significance of the academic library as an essential "external symbolic storage" network, Merlin Donald's terms. There, we can each go and consult this book or that learned journal article, and immediately plug our thinking mind into networks of ideas, debate, controversy and references to many other written works in the same library. But then we leave the library and go elsewhere. The people of the Neolithic realized that they could create and then inhabit an external symbolic storage network. They spent their lives, as most of us do, in a richly symbolic built environment that both catered for their needs but also shaped their vision and constrained their actions. As infants, they learned the vital skills of social interaction, as we did, within houses, in settlements, among special, monumental buildings. As developmental and cognitive psychologists tell us is true of ourselves and our own infant development, it would be true also for them, for the first time in human history, that their infant minds grew, developed their neural networks of cultural memory and matured within the context of symbolic built environments.

Another feature of architecture was also of the greatest importance to the communities of the Neolithic. Buildings do more than offer shelter. They can be created to accommodate and furnish what we do within them. In medieval times, the Christian church was perhaps the epitome of this function of buildings. Most people could have read to different degrees the symbolic features of the building. Within the building, its windows, furniture and fittings, art and symbolic objects, together with liturgy, chanting and music enriched the meaningful action and ritual. It was the multi-media enriching of an

already richly symbolic environment. In our day, perhaps the great museums and art galleries perform a similar function of at once being symbolic and at the same time accommodating profoundly important cultural material. Some have even drawn parallels between shrines and museums, referring to visitors as pilgrims.

The idea of museums as architectural places of dramatic encounter with treasured material culture, "theatres of memory", was central to a recent exhibition, *The Museum of the Mind*, at the British Museum⁵³. Mack reflects on the importance of memory to identity, noting that psychologists link memory loss with identity crisis. The museum memorialises something important about our identities. Daniel Libeskind, architect of the Jewish Museum in Berlin and other major museums, has said that it is "the destiny of architecture to communicate and to evoke the conditions of memory"⁵⁴. Mack⁵⁵ describes the extraordinary "amphitheatre" constructed by the sixteenth century Giulio Camillo, Professor at the University of Bologna, which contained some sort of physical representation of the ordering of all human knowledge, realised in such a way that the person exploring it was capable of committing all to memory. In the same century, Paolo Giovio built a villa on the shores of Lake Como, located, he believed, on the site of Pliny's villa. It housed a collection of antique Roman sculptures, coins and medals, arranged thematically through the galleries. The main gallery overlooked the lake, and was dedicated to Apollo and the Muses – hence the villa was called a Museum. Visitors reported that the impact was "miraculous". These were "theatres of memory"⁵⁶, places crafted and furnished to facilitate the visitors' active encounter with important elements in their cultural memory.

In the "theatres of memory" that archaeologists have encountered at many Neolithic sites in southwest Asia, drama and enactment are widely evidenced. These buildings were not simply built to act as passive containers. Buildings were repeatedly refurbished, modified, taken apart and rebuilt in a somewhat different form. Interiors were repeatedly replastered, and the plaster painted and burnished. The massive subterranean enclosures at Göbekli Tepe were excavated (involving the removal of between 300 and 500 cubic metres

53. MACK, 2003.

54. The quotation was recorded by GLASER, 2002.

55. MACK, 2003 : 16.

56. *Theatres of Memory* is the title of a two-volume study of the forging of British identity, by R. Samuel (1994, 1998), whence Mack (2003) obtained his material on the Renaissance examples.

“society’s stock of shared values”, and “a set of informal values or norms shared among members of a group that permits cooperation among them”⁷⁰. He is concerned with the disruptive forces in contemporary society, and the need to create a revised form of social capital in the face of changing technological and economic, post-industrial circumstances, as the industrial revolution needed its new form of social capital. As the industrial revolution and the information revolution have involved transformations in the way that social capital is constructed, so, he supposes, the agricultural revolution in prehistory would also have involved something similar. What we have been considering is the transformation brought about by the adoption of village life, the domestication of our species⁷¹. That transformation depended upon the ability of communities to create social capital, in the form of common memory, common beliefs and trust.

The notions that comprised the social capital of our Neolithic predecessors were no less abstract than our own. Much of the symbolism must remain obscure to us, because we do not have any of the corpus of knowledge that enabled members of those communities to read it and use it. Kuijt⁷² and Verhoeven⁷³ have explored certain aspects of the symbolism and rituals that are to be found in Neolithic communities, arguing that they reinforced social coherence within the household and within the community. Given the architectural contexts for these rituals and symbols, we can see them as physical embodiments of the shared notions of the dramas played out in those “theatres of memory”. Elsewhere I have sought to explicate the significance of the involvement of religious beliefs and ideas of the supernatural in the Neolithic complexes of ritual and symbolism⁷⁴. Boyer⁷⁵ begins his study with the anthropological observation that he knows no example of a society in the ethnographic present that does not have what we would call religious ideas and concepts. He goes on to identify fundamental characteristics behind the apparently chaotic variety of religious ideas⁷⁶. He argues that “cognitive constraints”⁷⁷ determine that there are in general terms four “repertoires” of religious representation that are almost universal. People everywhere express beliefs in super-

natural beings, in the capacity of supernatural beings to effect or affect events and states of affairs in our world, in the idea that some people can make contact with supernatural forces or receive and transmit messages from them, and in the occurrence of religious episodes, whereby the performance of rituals may bring about certain effects, or the participants may be affected by some supernatural experience.

The prehistorian Steven Mithen⁷⁸ uses Boyer’s ideas, applying them to the beginnings of representations that we would consider religious in the European Upper Palaeolithic. In addition, Mithen argues the “material symbols are critical not just to the sharing of religious beliefs but in their conceptualisation within the mind of an individual”⁷⁹. The counter-intuitive aspects of supernatural beings or supernatural events make them hard to grasp and hazardous to transmit to others. Ritual is one way of “anchoring” these ideas through the minds, helping us to retain the ideas and to transmit them. Representing supernatural entities in the form of material symbols likewise “anchors” these strange concepts in the human mind, reminds the viewer whenever the symbol is seen, and greatly helps in the transmission of ideas to new minds and across time. Symbolic representations of supernatural entities need not take figurative form. Mithen cites examples from the ethnographic record of simple, geometric forms that are conventionally accepted as representations of supernatural entities. If religious ideas are counter-intuitive and need “anchoring” in the mind to make them memorable, transmissible and stable through time and across generations, then ritual, while it may gain in value because of its repetitions, seems less useful than physical symbols. Physical symbols are potentially very durable, though even so they require interpretation each time they are viewed or used, and interpretation can be creative.

The last step in the sequence is to consider why the architecture of the special buildings, the symbolism and ritual should be concerned with religious ideas, rituals and the supernatural. We cannot imagine that the “invention” of architecture and the beginnings of religious feelings, beliefs and actions coincide in southwest Asia at the end of the Epipalaeolithic and the beginning of the Neolithic periods. As already mentioned, we begin to find ritualised burial of the dead in the last part of the Middle Palaeolithic in southwest Asia. Among the earliest three-dimensional representations are the carved ivory half man, half lion figure from Höhen-

69. FUKUYAMA, 1999 : 16.

70. *Ibid.* : 17.

71. WILSON, 1988.

72. KUIJT, 2000a, b.

73. VERHOEVEN, 2002a, b.

74. WATKINS, 2003

75. BOYER, 1994a.

76. *Ibid.* : 42-45.

77. BOYER, 1994b.

78. MITHEN, 1996, 1998, 1999.

79. MITHEN, 1999 : 149.

situations that demanded not only new social institutions but also new cultural forms. We modern humans are constrained by our evolved cognitive ability to handle the complex web of social interactions of up to about 150 people⁸⁷, but, in common with our southwest Asian early Neolithic predecessors, we habitually live in social groups that far exceed that cognitive limit. Like us, they needed cultural means of binding communities together, making them socially coherent, and guarding against cheats and free-riders⁸⁸. In particular, they needed new codes of (altruistic) social behaviour and norms of neighbourliness. Bundles of religious concepts need more than icons or images. They need to be located within the fabric of the society that they serve so that they are literally part of people's lives. The organization of the settlement and the architecture of buildings situated those concepts, constituting "theatres of memory" and scenarios for their enactment.

CONCLUSION

This essay has set the key phenomena of the end of the Epipalaeolithic and the beginning of the Neolithic within the framework of theories of the evolution of the human mind and culture. It does not attempt to give an account of neo-Darwinian evolutionary theory or, more particularly, recent theories of co-evolution of mind and culture ; some of these are referenced in the text and listed in the bibliography. In the other direction, the essay does not set out to explicate the meanings that may be embodied in the buildings and sculptures and how those meanings may have changed and developed over time. I have been concerned only to set Braidwood's hunch that "culture was not ready" until the Holocene into a context of theories of cognitive and cultural co-evolution. I would argue that the "reading" of symbolic meaning in the artefacts of the early Neolithic is a quite different task ; it is one thing to talk of the evolution of the English language from the time of Chaucer to that of Shakespeare, and something totally different to write literary criticism of Shakespeare's tragedies.

In summary, therefore, we may conclude that the world's earliest village communities were also the first to develop fully modern minds and a fully symbolic culture. By fully symbolic we do not mean that people were able to construct and decode symbols such as individual sculptures, paintings or signs : that

stage had begun early in the Upper Palaeolithic. Rather, we mean that cultural communities evolved the means to develop and use complex and multi-layered systems of symbolic representation. Such systems of symbolic representation were cognitively and structurally like language, which had been present in its fully modern form for several tens of thousands of years, but were articulated in terms of material culture (accompanied by rituals and other prescribed modes of usage).

The stimulus for this precocious development of systematic symbolic representation beyond language was the novel cognitive environment, particularly as it was encountered in the artificial circumstances of the built environment in the Epipalaeolithic period. The stimulus became the medium : the built environment suggested that people should extend its artificiality and construct buildings that embodied significance and meaning. The adaptive pressure for the co-evolution of cognitive faculties and symbolic material culture was the growing size and permanence of sedentary hunter-gatherer communities, the complexity of whose inter-personal relations was expanding beyond the computational power of human brains. The new, permanently co-resident and larger social groups needed artificial (that is, non-biological), cultural modes to ensure social cohesion and to build social capital.

Architecture in the form of settlement layout, domestic house design and the creation of communal buildings constituted the concrete forms of new social constructs. At the same time, architecture could also provide a syntax-like framework, within which various forms of symbolic objects and symbolic acts (rituals, social practices within the home, norms of neighbourliness) could take their place to build a richly, multi-media drama. Even before farming began to be practised, the hunter-gatherer societies who harvested and stored cereals and legumes lived in permanent villages, and relied on the accessible territory around their village year on year and generation on generation. Long-term time perspectives and continuity were important considerations. The social capital necessary to such communities, and the trust that was vital to such a way of living required powerful symbolic forms. Fundamental to the formation of these codes was the creation of "theatres of memory" that spoke of the community's shape and form, in which the essential dramas, rituals and myths could take their meaning.

We can now see why "culture was not ready", as Braidwood suspected, until the very end of the Palaeolithic and the beginning of the Neolithic in southwest Asia, in the light of advances in neuroscience, cognitive, developmental and evolutionary psychology, and co-evolutionary theories. Others,

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88. DUNBAR, 1999.

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