PART I

INTRODUCTION TO THE THEMES, SITE, AND REGION

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INTRODUCTION TO THE THEMES OF THE VOLUME

Cognition and Çatalhöyük

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Over recent years, a number of scholars have argued that the human mind underwent a cognitive revolution in the Neolithic. This book seeks to test these claims at the Neolithic site of Çatalhöyük in Turkey and in other Neolithic contexts in the Middle East. The volume brings together cognitive scientists who have developed theoretical frameworks for the study of cognitive change, archaeologists who have conducted research into cognitive change in the Neolithic of the Middle East, and the excavators of the Neolithic site of Çatalhöyük, who have over recent years been exploring changes in consciousness, creativity, and self in the context of the rich data from the site.

Cognitive archaeology has focused on ways in which different material worlds afford different potentials of mind. Thus external symbols allow more information to be stored. Or systems of weights allow new notions of value and worth. Or writing and numbering allow more complex quantification. This may all be true, but what is "cognitive" about it? External symbols (including material culture but also later number systems and writing) might mean that a society has more information available to it, but does that mean that a human mind can store more information? Or might it mean the opposite, that the human mind becomes less complex, less able to remember large amounts of complex data? After all, there are accounts of small-scale societies like the Polynesian Tikopia that have prodigious abilities to navigate vast oceans without measuring devices (Firth 1959). Systems of weights and measures might underpin more complex social and economic systems, but might that not mean that a human mind has become less attuned to quantifying weights and making measurements? One might call this the "smart phones, dumb people" syndrome!

Perhaps more important, if we were to make such arguments and in fact suggest that human dependence on material symbols, number systems, and writing (and libraries and computers) actually made the mind less complex, less able to construct abstract thoughts, less able to remember large numbers of social contacts, how would one test these alternative hypotheses as an

archaeologist? It is striking that cognitive archaeology set itself up as a more rigorous, scientifically testable domain (Renfrew 1982), and yet it is not at all clear that there are methods available to test these alternative hypotheses. Certainly it is possible for archaeology to attest to the emergence of abstract symbol systems, and this will be part of the task in this volume. But it is not at all clear that such evidence is telling us anything at all about "the cognitive." Rather, the evidence is telling us about how societies are able to store information, construct abstractions, and develop social memories. It may not be telling us about mind.

Of course, mind is responsive to and constitutive of context, and so presumably in all contexts humans think differently and have different cognitive potential. The notion of the extended mind suggests that the mind is responsive to material context at both the habituated, embodied level of practice (Malafouris 2013) and at more abstract levels. How the mind cognizes the world is a product of the context. But because as archaeologists we cannot access mind or test theories about it directly (rather than through proxies), it is not clear what a cognitive archaeology can contribute except insofar as it is confined to social cognition – that is, to the concepts, abstractions, memories, thoughts of a society. It cannot then be right for archaeologists to separate the cognitive from social meanings and representations.

Something would be added by a cognitive archaeology, of course, if it were argued that the wiring in the physical brain had an impact on how humans cognized the world. And such arguments are made in evolutionary accounts of shifts from modular to generalized minds (e.g., Mithen 2004), or when links are made between tool-making and language (closely connected parts of the brain are involved). It remains unclear that any such limitations provided by brain architecture have influenced the development and history of the mind of *Homo sapiens*. Rather, there is much evidence of brain structure and organization being responsive to contextual changes.

Something too would be added if it was argued that learned patterns of mental action became habituated such that they limited cognitive capacities. Such arguments are the domain of psychology or have long been key to critiques of ideology. In such contexts, most starkly, it would be difficult to distill out a cognitive domain. The mind is thoroughly embedded in psyche and ideology.

The danger in cognitive archaeology is thus that it often asserts something to do with mind, even writing of "the archaeology of mind" (Renfrew 1982), when in fact all it can do is test hypotheses about how societies function in terms of information, values, concepts, memories. These might indeed all be termed aspects of the "social mind," but they do not give insight into the mind itself if by that is meant the workings of individual minds. Cognitive archaeologists often claim to discuss aspects of "the human mind" when in fact all they can explore scientifically is specific social minds embedded within socio-material contexts.

Of course, it might be countered that the notion of a distributed mind makes a nonsense of any attempt to make a distinction between universal characteristics of the human mind and social minds. According to this view, all minds are dependent on and

continuous with the world around them. So there can be no universal human mind separated from context. As discussed by Wheeler in Chapter 4 of this volume, there are two main versions of this distributed connectionist argument. The first, embedded hypothesis is close to the argument presented earlier and states that the introduction of new symbol systems such as language or material symbol systems allows more complex cognitive performance without necessarily causing changes in biological brain capacity. This is because, according to this embedded view, the biological capacities of the human brain are highly dependent on body and world in order to function, but they have generalized capabilities that are not necessarily changed by that functioning. Within such a view, it is difficult or impossible for archaeologists to move beyond the embedded social mind to ascertain biological human minds in the past, except by making assumptions about universal characteristics of the human mind.

Wheeler argues that an alternative extended hypothesis rejects the embedded notion that external elements such as language and material symbols act as noncognitive factors that support and augment the wholly internal cognitive states and processes. Rather, the extended view takes the more radical position that external symbols are themselves part of the cognitive process. From such a standpoint, any change in material symbols involves cognitive change. There are two difficulties here. The first is that because all material culture has symbolic dimensions, the statement that changes in material culture involve cognitive change becomes trivial and self-fulfilling (see Wheeler, Chapter 4 in this volume, for a discussion of this issue). The second is that archaeology itself cannot resolve the argument between the embedded and extended views, for the reasons stated earlier. Archaeologists can explore hypotheses about ancient symbol systems, but they have little purchase on the relationships between those (social) systems and mind.

In this volume we attempt to avoid the confusions of cognitive archaeology by focusing on specific and well-defined aspects of "social minds." We show that specific questions concerned with levels of consciousness, degrees of creativity, and notions of self can be explored by understanding mind as social action, situated in context, and thus as dependent on interpretation as any other form. In this volume the archaeological case studies focus on cognitive change as change in social minds that is distributed within a material–social milieu.

Over recent years a number of scholars have argued that "the human mind" underwent a cognitive revolution in the Neolithic. In my view, this argument results from a confusion between an evolutionary account of the universal nature of a separate cognitive domain (the human mind) on the one hand and a recognition of the context-dependent nature of mind on the other. When tested against detailed data from the Neolithic of the Middle East and Anatolia, and in particular against the large amounts of high-quality data obtained from Çatalhöyük, the confusions are made clear, and an alternative account emerges.

THEORIES OF NEOLITHIC COGNITIVE CHANGE

There has long been an assumption that the modern mind somehow differed cognitively

from the "primitive" or "savage" mind – and here we seem to be talking about universal aspects of individual minds. In *La Pensée Sauvage* Lévi-Strauss (1962) argued that the "savage mind" was in many ways similar to the "civilized mind," and that both had the ability to be "scientific." But he also noted a difference between premodern (including Neolithic) science, which was limited to putting together bits of sensory practical knowledge (in a process he called bricolage) and the more open questioning of modern science. For Lévi-Strauss, the Neolithic mind was not dissimilar from the Paleolithic mind; both were embedded in concrete and sensible things rather than being distanced from them. Over recent years, a number of authors have drawn continuities across the period of the adoption of farming. For example, David Lewis-Williams has interpreted sites like Çatalhöyük in terms of ethnographic parallels with hunter-gatherers and argued that altered states of consciousness are relevant to Neolithic as much as to Paleolithic art (Lewis-Williams 2004; Lewis-Williams and Pearce 2005). Finlayson and Warren (2010) have warned against the assumption that the Neolithic mind suddenly became more like the modern mind, pointing to the undoubted complexity of Upper Paleolithic thought processes in Europe, as indicated in cave paintings and complex tool technologies.

On the other hand, work in cognitive evolution, especially that by Merlin Donald (1991), has encouraged the notion that cognitive changes have occurred in human history, whether genetically linked or not. At the same time, work on the plasticity and distributed nature of cognitive processes argues strongly that mind is embedded in context. For example, for Fuchs and Schlimme (2009), consciousness does not develop in an isolated brain, but only in a living organism enmeshed in its environment. Clark (1997) argues that recent work on cognitive models, neuroscience, and robotics indicates that our thinking comes about as an interaction between brain and world.

Given this notion of a contextually distributed and plastic mind, it might be expected that the Neolithic, with its panoply of new techniques and ways of life, would be associated with cognitive change. For Gordon Childe (1936), the emergence of pottery technology in the Neolithic had great significance for human thought and the emergence of science in that it involved the transformation of substance. Perhaps the clearest early statement on the cognitive changes that may have accompanied the adoption of farming and a settled way of life is by the Jesuit priest Teilhard de Chardin, who argued that the Neolithic was a key moment in the gradual process by which human consciousness, an awareness of personal self, and the horizons of human possibility (innovation and creativity) all increased. In his 1955 *The Phenomenon of Man*, de Chardin wrote a chapter on "The Neolithic Metamorphosis" in which the Neolithic was seen as a "critical age and one of solemn importance among all the epochs of the past" (p. 68). The greater exchange and interaction between people meant that "from Neolithic times onwards the influence of psychical factors begins to outweigh – and by far – the variations of ever-dwindling somatic factors" (p. 68). More specifically, de Chardin argued that the increased spreading out of ideas in the Neolithic meant that people created

more complex thoughts as they converged and integrated. Trade, exchange, movement, and interaction led to what he termed "complexification" – an evolutionary process of increased organizational complexity. The same processes also led to an intensification of mental subjective activity – "the evolution of progressively more conscious mind" – the raising of mental potential.

In a series of important articles, Renfrew (e.g., 1998, 2012) builds on the work of Merlin Donald (1991) and proposes a phase in cognitive development between the phase of linguistic or mythic culture associated with *Homo sapiens* and the phase of theoretic culture associated with urban societies with writing. In this intermediate period associated with the Neolithic, Renfrew describes a phase of symbolic material culture in which information is stored externally, not in texts, but in the complexities of material symbols. The substantive engagement with greater amounts of material culture associated with sedentism (pottery, polished axes, and domesticated plants and animals) led to a nexus of weights, values, commodities, and exchanges that involved cognitive change (more accurate measurement of relative value and the objectification of things as commodities). The substantive engagement with more material culture brought forth symbol and concept. Material symbol preceded concept in that it was the experience and comparison of heavy/light things that led to abstract ideas about weight and metrication/measurement. The large body of work by Schmandt-Besserat (e.g., 2007) argued for a gradual development from the use of tokens into early writing in the Middle East from 7,500 to 3,000 BC, a process described by her in terms of the human acquisition of complex cognitive processes such as abstraction (for a critique of this argument, see Chapter 5, this volume).

Watkins (2010) follows Renfrew in suggesting that the Neolithic saw the emergence of the cognitive and cultural abilities to create symbolic vocabularies and formulate symbolic constructions using material culture (as distinct from spoken or written language), but he follows Wilson (1991) in arguing that in particular the built environment of houses and ritual structures was the driver of rapid cultural development in the first village communities. The steep upward turn in the graph of cognitive and symbolic abilities was associated with the construction of built environments that allowed humans to manage the complex social relations that emerged in the Neolithic. In fact, there are two separate hypotheses within Watkins's account. First, starting in the increasingly sedentary societies of the Late Epipaleolithic in the Middle East, architecture and the built environment provided a stage on which complex ideas and relations could be mapped, expressed, and stored. Second, there is the rather different point that dense settlements required complex organizational skills to manage the processes of living together permanently.

For Mithen (2004), too, it is the dense settlements of the Neolithic that made the biggest difference in terms of cognitive evolution, along with increases in trade and exchange. During the Neolithic, such developments as (a) closer relations with plants and animals and their cycles of reproduction, (b) larger houses necessitating more complex architectural and construction techniques, (c) use of lime plaster involving burning

limestone to temperatures between 750 and 850°C, and (d) the production of textiles, all engendered new modes of thought. In addition there were increases in basketry, brewing, and pottery – all this involved new bodies of knowledge and the evolved propensities of the mind. As a result, a more "scientific" mode of thought emerged in which humans made accurate observations and tested hypotheses about causality, even if scientific cognition at that time was tied up with religious thought (a claim not dissimilar to Lévi-Strauss's account of premodern science and its relation to myth).

While the preceding authors associate cognitive change with sedentism, agriculture, trade, and exchange and the new technologies of the Neolithic, Cauvin (2000) takes the view that cognitive, symbolic, and psychological change must have preceded other aspects of the Neolithic package. Increased intervention in the environment associated with agriculture implies the predevelopment of a human agency obtained from envisaging the power of personal divinities. The birth of agriculture is linked to and preceded by the birth of human-like divinities. Such divinities allowed humans to see themselves as separate from external reality (p. 209) and then to act upon it so as to transform and domesticate. The initial change was "a purely mental development" (p. 32) involving a greater sense of agency and an alienated sense of self (p. 209). However, toward the end of his book, Cauvin takes a more dialectical stance: The symbolic and the economic "are simply two faces, interior and exterior, of a single revolution" (p. 220).

While all the authors in this book describe in broad-brush terms the evidence for cognitive change in the Neolithic of the Middle East and the causes for those changes, there has been little specific testing of the claims made. Scholars have assumed that the cognitive changes they describe are loosely linked to sedentism, changes in technology, trade, and exchange, increases in amounts of material culture in the Neolithic as a whole, without exploring or testing any specific correlations. The dating of sites and events in the Neolithic of the Middle East remains imprecise, and many of the processes involved took place over millennia (e.g., sedentism, cultivation, and domestication) and varied in nature and speed in different parts of the Middle East: The process of Neolithicization has come to be understood as a complex polycentric process (Gebel 2004; Özbaşaran and Buitenhuis 2002; Özdoğan 2010). It has proved much easier to talk about cognitive change in broad-brush terms than to test specific hypotheses against the data from the Middle East as a whole.

All the earlier discussions of Neolithic cognitive change make broad claims about overall evolutionary transformations, although it is not always clear whether changes in universal aspects of human minds or changes in social minds are being proposed. The chapters in this volume seek to test claims for cognitive change in social minds and the causes of the changes by taking a five-part strategy. First, a single excavated site, Çatalhöyük, with large amounts of data that cover part of the Neolithic sequence, will be used as an important laboratory for testing hypotheses about the causes of cognitive change. Second, specific measures of cognitive change will be proposed, building on the work of Renfrew and others (Renfrew 1982; Renfrew and

Bahn 2004; Renfrew and Zubrow 1994; Renfrew et al. 1985), but will be critically evaluated. Third, both at Çatalhöyük and at other sites in the Middle East, careful consideration will be given to the interpretation of the social and economic context within which cognitive change may have occurred rather than assuming an overall "Neolithic" transformation. Fourth, cognitive change will be understood as change in the capacity of social minds, that is, in the ability of a society and its technology to manage information, produce abstractions, innovate, and develop notions of self. Fifth, claims for overall evolutionary transformations will be critically scrutinized.

ÇATALHÖYÜK

The focus of this volume, Çatalhöyük East (7,100–6,000 BC) in central Turkey, is one of the best-known Neolithic sites in Anatolia and the Middle East, roughly contemporary with latest Pre-Pottery and the following Pottery Neolithic in the Levant. It became well known because of its large size (32 acres and 3,500–8,000 people), with numerous levels inhabited over 1,100 years, and dense concentration of "art" in the form of wall paintings, wall reliefs, sculptures, and installations. Within Anatolia, and particularly within central Anatolia, recent research has shown that there are local sequences that lead up to and prefigure Çatalhöyük (Gérard and Thissen 2002; Özdoğan 2002), especially as a result of recent work at Boncuklu (Baird et al. 2018). In southeast Turkey, the earlier villages of Çayönü (Özdoğan and Özdoğan 1998) and Göbekli Tepe (Schmidt 2001, 2006) already show substantial agglomeration and elaborate symbolism. In central Anatolia, Aşıklı Höyük (Esin and Harmankaya 1999) has dense packed housing through the millennium prior to Çatalhöyük. There are many other sites either contemporary or partly contemporary with Çatalhöyük that are known in central Anatolia and the adjacent Burdur-Lakes region (Duru 1999; Gérard and Thissen 2002). Yet Çatalhöyük retains a special significance because of the complex narrative nature of its art, and many syntheses (e.g., by Cauvin 1994 or Mithen 2003) give it a special place.

Much of the symbolism of the earlier Neolithic and later (into historic times) periods of the Middle East can be "read" in terms of the evidence from Çatalhöyük, and the rich evidence from the site enables interpretation of the evidence from other sites.

The site was first excavated by James Mellaart (see 1967) in the 1960s. After 1965, it was abandoned until a new project under my direction began in 1993 (Hodder 1996, 2000, 2005a, 2005b, 2005c, 2006, 2007a, 2010, 2013a, 2013b, 2014a, 2014b, 2014c). Through both Mellaart's and my projects, only 5 percent of the mound has been excavated, but the whole mound has been sampled using surface survey, surface pickup, geophysical prospection, and surface scraping (see reports in Hodder 1996). The main architectural components of the site are densely clustered houses, with areas of refuse or midden between them. The art and symbolism and burial all occur within houses. There is evidence of productive activities in all houses and on roofs of houses. None of the sampling has found evidence of large public buildings, ceremonial centers, specialized areas of production, or cemeteries. The population

of the settlement at any one time has been conservatively estimated (Cessford 2005a) using a variety of techniques and making a variety of assumptions about how many houses were inhabited at any one time.

All of the extensive excavation in the 1960s took place without screening, and with limited recording and no scientific analysis (except radiocarbon dating). The current project (since 1993) has used a range of modern scientific techniques. In the earliest phase of the current project (1993–1995), we concentrated on regional survey and on planning and studying the surface of the mound, conducting surface pickup, drawing eroded profiles of the earlier excavation trenches, and using geophysical prospection. We also undertook a reevaluation of the material in museums that had been excavated by Mellaart. This work has been published (Hodder 1996).

In the second phase of fieldwork and publication (1996–1999), the research aim focused on individual buildings. We excavated in two main areas on the mound (Figure 1.1). In the North area we concentrated on excavating two buildings in great detail in order to discern depositional processes and to understand how individual houses functioned. In the South area we continued the trenches that had been started by Mellaart in order to understand the overall sequence of the site and to see how individual houses were rebuilt and reused over time. At the same time paleoenvironmental work was conducted (Roberts et al. 1999), regional survey continued (Baird 2002), and excavations were undertaken on the later Chalcolithic mound at Çatalhöyük West. Publication of the monographs for this second phase of work has been completed (Hodder 2005a, 2005b, 2005c, 2007a). The methods used by the project were published in an earlier volume (Hodder 2000). Articles have also been published in journals and in the project's own archive reports and newsletters available on the web at www.catalhoyuk.com.

The research aims for the third phase of the project (2000–2008) turned from individual houses to the social geography of the settlement and to the changes in social organization through time. The work from this cycle and postexcavation analysis between 2009 and 2012 led to four volumes describing the results of the excavations and two further interpretive volumes (Hodder 2010, 2013a, 2013b, 2014a, 2014b, 2014c).

The fourth phase of excavation and research at Çatalhöyük (2009–2017) focused on the hypothesis that social organization at the site was based around "history houses" made up of groups of houses centered on a central house in which the dead were preferentially buried and ritual and symbolic markers were amassed (human heads, animal heads, horns, tusks, claws, etc.). The hypothesis argued that religion and history were closely tied in the production of these special houses, and that these houses acted to produce the long-term social relations and structures that are the hallmark of settled agricultural societies. It was hypothesized that we can chart the development of the history house system in the growth and development of the site, and indeed that the whole town of Çatalhöyük and the surrounding landscape were organized so that historical relations and connections could be charted.