Structured Deposition and the Interpretation of Ritual in the Near Eastern Neolithic: a new methodology

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Abstract

Ritual is an issue of wide importance in archaeological discourse and interpretation of the past. An understanding of ritual connects the traces of activities preserved in the archaeological record to the embodied experiences of human practice. Very few theorists have proposed methods to approach ritual, and those methodologies that do exist (*e.g.* Renfrew 1985; Richards and Thomas 1984) suffer from irreconcilable weaknesses. One of the primary methodologies for looking at ritual in prehistory -called Structured Deposition- has been developed in conjunction with evidence from the British Neolithic, and has barely been applied beyond this narrow field. The lack of models available for archaeologists studying ritual must be rectified, and, as previously proposed models and definitions have been inadequate in scope, there is a real need for a new method and model.

This thesis introduces a new methodology in the archaeology of ritual, using the Neolithic of the Near East as a case study. Through a focus on the methodological element of studying ritual, a subsidiary goal of a better understanding of ritual in the Near East can be reached. Other subsidiary goals are to provide a logically valid basis from which to attempt interpretation as well as a better definition of ritual as it is used in archaeology, in order to solidify an approach to ritual that can take into account symbolic activity without succumbing to subjectivist criticism.

The starting point for the new methodology is the idea of Structured Deposition, one way British archaeologists have tried to incorporate discussions of ritual despite a dearth of evidence. In brief, Richards and Thomas (1984) began with the premise that ritual activity involves formalized and repetitive behaviour. They then analysed the spatial patterning of particular forms of deposition, and concluded that certain deposits were too formal to be utilitarian. Just as ritual is not a single category, but a collection of categories with similar attributes, so too is structured deposition polythetic (See Needham 1975). Garrow (2012) places the many kinds of structured deposition on a continuum, naming the poles after the two most commonly discussed forms of structured depositions: “odd deposits” and “material culture patterning.” This conception of structured deposition as polythetic helps to overcome the current theoretical reluctance to differentiate between description and interpretation. Not only does structured deposition cover a great many aspects of ritual activity, it also allows for the correlation of activities that had previously been studied in isolation.

Another advantage to the translation of structured deposition to a useful package to be deployed with respect to Near Eastern evidence is that the concept is only the starting point of the model. Alison Wylie reminds us that the orienting concepts do not determine what is found as analysis progresses (2002: 167). As such, many “odd deposits” or “patterning” events may not be considered as the result of intentional, or ritual, activity at the end of the interpretation process according to this new methodology. This reflects upon

the contextual nature of the methodology, especially crucial with the sparse excavation and survey evidence from many Near Eastern sites.

In chapters 2 and 3 of this thesis I explore previous approaches and conceptualizations of ritual and of meaning on the archaeological record. In chapter 4 I introduce issues in Near Eastern prehistory that are crucial to an understanding of the emergence of new forms of ritual activity, as they both frame and support current academic discussions of ritual. The methodologies used to approach these topics are described and critiqued in chapter 5, and a new model is introduced.

The first step of the new model is to *contextualize* the evidence from the site, attempting to understand standard practices during the major phases. Deviation from the standard practices may be the result of intentional *ritualization* of objects, buildings, areas, colours or deposits. *Quantification* of the attributes of the potentially ritualized deposit allows for statistical comparisons, then a consideration of possible avenues of *symbolization*. The final step, *interpretation*, ties together all of the previous elements of the methodology to arrive at a conclusion as to the ritual significance of a deposit.

In chapter 6, this new model was applied to 640 deposits spanning the time contemporary with the Pre-Pottery Neolithic from Anatolia, Upper Mesopotamia, and the Levant. Statistically significant results were obtained from both inter- and intra- regional comparisons, as well as chronological juxtaposition of depositions. The quantity and depth of the results, described in chapter 7, underline the usefulness and relevance of this new methodology with which to approach ritual in the Ancient Near East.

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Chapter 1: Introduction

1.1 Aims

Ritual is an issue of wide importance in archaeological discourse and interpretation of the past. An understanding of ritual connects the traces of activities preserved in the archaeological record to the embodied experiences of human practice. Very few theorists have proposed methods to approach ritual, and those methodologies that do exist (*e.g.* Renfrew 1985; Richards and Thomas 1984) suffer from irreconcilable weaknesses (to be discussed in Chapter 5). One of the primary methodologies for looking at ritual in prehistory has been developed in conjunction with evidence from the British Neolithic, and has barely been applied beyond this narrow field. The lack of models available for archaeologists studying ritual must be rectified, and, as previously proposed models and definitions have been inadequate in scope, there is a real need for a new method and model.

The major purpose of this thesis is to introduce a new methodology in the archaeology of ritual, using the Neolithic of the Near East as a case study. As such, this thesis will focus on the methodological element of studying ritual, with a subsidiary goal of a better understanding of ritual in the Near East. Throughout the course of this research I hope to be able to provide a logically valid basis from which to attempt interpretation as well as a better definition of ritual as it is used in archaeology. Previous definitions and approaches to ritual have been far from satisfactory (Chapter 2), and one of the more promising approaches to analysing ritual activity despite a dearth of evidence – structured deposition – suffers from both methodological limitations and a failure to fully understand what is entailed by structured deposition (Chapter 3). There is even a possibility to clarify current issues in Near Eastern Neolithic studies through a detailed reappraisal of our approaches to ritual (Chapter 4). The need for a new methodology has been made abundantly clear in the failure to fully and effectively develop a methodology for dealing with ritual generally, and structured deposition specifically (Chapter 5). A final goal of this thesis is to apply and evaluate this new methodology (Chapter 6).

Through the course of introducing a new method with which to approach prehistoric ritual, I hope to be able to provide a broader understanding of ritual activity in the Near Eastern Neolithic as well as a better definition of ritual. I wish also to clarify the role of interpretation in discussions of ritual, and temper this with the inclusion of logical validity, in order to solidify an approach to ritual that can take into account symbolic activity without succumbing to subjectivist criticism.

1.2 The Neolithic of the Near East

I have set the context of this study as the Early Neolithic period in the Near East as there are a great many theories and methods that have been applied to the materials. It has been argued that there is a significant shift in ritual behaviours during this time period (*e.g.* Watkins 2004; Cauvin 1994; Byrd and Monahan 1995; Bar-Yosef and Belfer-Cohen 1991), and also that interpretation of ritual activity is important to an overall understanding of the Neolithic (*e.g.* Verhoeven 2002; Hodder 2006; Cauvin 1994). Finally, the Neolithic of the Near East has a rich data set, thereby offering excellent opportunities for the application of a new methodology.

The Early Neolithic (10,000 to 7,000 BC cal) in the Near East was a time of major social and technological change and experimentation. This thesis focuses on human activity during the earliest, Pre-Pottery, Neolithic (PPN), as the period sees the appearance of cultivation, herding and substantial sedentary behaviours. The PPN describes a changing assortment of behaviours prior to the widespread use of fired ceramics, and after the abandonment of a mobile foraging economy in the Levant, Anatolia, and the Middle East. These transitions occurred in multiple locations, at different trajectories, and included different aspects of the 'Neolithic package' (Gebel 2004; Çilingiroğlu 2005; Thomas 1991); a sedentary lifestyle, the management and eventual domestication of certain plants and animals, striking mortuary practice, household economies, communal structures, and a change in the production of stone artefacts. These background issues are discussed in more detail in Chapter 4. Much has been said about the catalyzing factors for these transitions and their inter-relatedness, traditionally focusing on technological and economic explanations (*e.g.* Childe 1929; Braidwood 1960; Binford 1979; Zvelebil 1989; Perlés 2001). More recent attempts have focused on the causes of these changes, and have included theories concerning a revolution of symbols that set the cognitive table for economic and social changes (Cauvin 1994); a greater communal focus on ritual activity to create social memories (*e.g.* Kuijt 1996; Gebel *et al.* 2002) and palaeoenvironmental considerations (*e.g.* McCorriston and Hole 1991; Bar-Yosef 1998).

Anatolia[1] in particular is an especially fruitful area for investigations of the PPN. Özdoğan (1997) has identified Anatolia as one of two "core regions" from which the elements of the Neolithic package developed. Recently published excavations, both new and ongoing, facilitate analyses of this previously understudied area. In the last fifty years, scholars have been looking to Anatolia to investigate both how palaeoenvironmental conditions shaped early economic behaviours; and how ritual, religion and symbolic expression changed during the PPN. Bound up in these questions is the role of ritual activity and its contribution to – or reliance on - these new associations and changes. Many archaeologists have argued for a causal relationship between the spectacular explosion of ritual activity during the early Neolithic and the appearance of herding and agriculture. Cauvin (1994), Hodder (1990); Thomas (1991); Tilley (1996); and Whittle (1996) argue that new forms of ritual and symbolic activity acted as catalysts for these new methods of domestic production, while others, such as Whitehouse (2010) claim that the increasing reliance on these new economic activities forced the creation of new forms of symbolic and ritual expression. In either situation the florescence of new ritual practices is linked to the appearance of new economic and social practices. Additionally, ritual is an important part of cultural practice as it serves to orient and inform other socio-cultural practices (Gose 1994: 4).

1.3 Ritual

Only recently has ritual activity become a focus of interest in Neolithic studies. Symbolic behaviour, particularly mortuary ritual, is now often included in descriptions of the Neolithic

[1] By Anatolia I refer to those parts of modern Turkey that project past the Black and Mediterranean Seas. That is, Thrace, the Aegean, Pontus, and Central Anatolia. South-eastern Anatolian sites are considered as part of Upper Mesopotamia.

package. Researchers investigating the local variations of mortuary activity can shed light on the potential trajectories of information exchange during the earliest settled communities, and understanding the formal constraints on social behaviour may help to shape our conception of how the transition to cultivation and/or herding occurred. As this is nowhere near comprehensive, a much fuller account of the significance of ritual activity will be provided in chapter 2.

The presence of ritual behaviour during the Neolithic is not contested, and classes of ritual objects are often intuitively identified; particularly buildings, statues, burials, caches, skulls, and figurines without recourse to how or why these items are considered as such. One of the goals of this inquiry is to move beyond description towards a more robust understanding of ritual during the PPN. My conception of ritual, including a "thick description" (Geertz 1973) that takes into account the beliefs of actors, is offered in section 2.2. Descriptions and critiques of previous attempts to invoke ritual explanations are tackled in detail in section 2.4. Many theorists blithely offer criteria for the identification of ritual acts, yet falter at interpretation. As the meaning of these acts is required for a broader understanding of PPN ritual activity, I shall address issues of interpretation in section 2.4 and again in chapter 3. The more we investigate prehistoric ritual, the more we understand how it is entangled with the people and processes from which sedentary lifeways, cultivation, herding and domestication emerged. A comprehensive analysis of the PPN must have recourse to ritual.

1.4 Structured Deposition

One way British archaeologists have tried to incorporate discussions of ritual despite a dearth of evidence is through the invocation of Structured Deposition. This approach is especially interesting because of its immediate impact and continued importance in discussions of British Neolithic activity, yet the idea has barely penetrated analyses of Near Eastern ritual.

In order to investigate the potential ritual character of Late Neolithic henge monuments in Wessex, Richards and Thomas examined the deposition of material culture that, at first glance, appeared to be domestic rubbish (1984). The idea that looking at the patterning, or structure, of deposition could inform studies of ritual activity was made explicit in the 1984 paper that began with the premise that ritual activity involves formalized and repetitive behaviour. They then analysed the spatial patterning of particular forms of deposition, and concluded that certain deposits were too formal to be utilitarian. The upshot, they argued, was that structured depositions can be *one* archaeologically visible aspect of ritual behaviour.

Structured deposits have been identified in many disparate temporalities and geographies (*e.g.* Fontijn 2002; Chapman 2000), yet the approach has not changed with the landscape. Naming an assemblage as the result of structured deposition is not an interpretation, but merely a description that allows for further interpretation (Brudenell and Cooper 2008: 15; Garrow 2012).

Just as ritual is not a single category, but a collection of categories with similar attributes, so too is structured deposition polythetic (See Needham 1975). Garrow (2012) places the many kinds of structured deposition on a continuum, naming the poles after the two most commonly discussed forms of structured depositions: "odd deposits" and "material culture patterning." This

conception of structured deposition as polythetic helps to overcome the current theoretical reluctance to differentiate between description and interpretation.

It is precisely this reluctance to evolve a descriptive vessel into an analytical tool that confounds efforts to introduce structured deposition as a methodological treatment of Near Eastern material which can inform past ritual practice. The relevance of this approach is clear, as many scholars have drawn attention to the intentional deposits and displays of plastered human skulls, caches of obsidian tools, figurines and animal bones as evidence of the changes in symbolic activity during the PPN (see chap 3). The final step, creating a model for the interpretation of certain acts as ritual has been attempted, with varying degrees of success (see chap 5.7, and 7.2), and yet, so far nobody has attempted to render such a crucial tool to the British Neolithic advantageous to the Near Eastern Neolithic. Not only does structured deposition cover a great many aspects of ritual activity, it also allows for the correlation of activities that had previously been studied in isolation.

Another advantage to the translation of structured deposition to a useful package to be deployed with respect to Near Eastern evidence is that the concept is only the starting point of the model. Alison Wylie reminds us that the orienting concepts do not determine what is found as analysis progresses (2002: 167). As such, many "odd deposits" or "patterning" events may not be considered as the result of intentional, or ritual, activity at the end of the interpretation process.

1.5 Epistemological underpinnings of methodological concerns

Having raised the issue of methodological process, the main problem with nearly all models (my own included) is making the esoteric concrete enough to be susceptible to formal logic. Any theorist must constantly explore the methods in use and their validity when discussing ritual. Evaluating the logical structure of arguments for the identification and meaning of ritual acts can shed light on other, entangled, aspects of prehistoric lifeways.

It is implausible to assume that all human behaviour occurs in reaction to functional or environmental necessities, or that it did so in prehistory. As such, any attempt at explanation must take into account the empirically underdetermined attributes (cognition, symbols, culture) of the actors. It is here that strict empiricist and relativist positions find themselves on opposite ends of a spectrum of explanation and interpretation. Neither analytic nor synthetic knowledge[2] alone can help the archaeologist, and so she must slip in to the constantly shifting middle ground, searching for empiricist constraints to relativist positions.

Quantification of certain attributes of objects is certainly possible, and crucial in order to ground a discussion of ritual in the archaeological evidence.

Richards and Thomas used a structuralist approach to meaning, that the arrangement of the word-like elements (in this case, pot sherds, bones, stones) produces meaning in the same way as language does: through patterning. Their application of a linguistic metaphor allowed for the non-linguistic assemblages to become a subject for analysis. Structuralist frameworks are excellent tools for the analysis of symbols, which may not have been created with the intention of

[2] Analytic knowledge is necessarily true, based on definition or the conventions of language; while synthetic knowledge can only be gained through fact of experience.

producing language, but are sufficiently culturally coded to evoke emotional meanings. The contextualist analysis (that will be implemented in this investigation) builds on the structural framework, focusing on the provenience of an artefact in order to populate the "language" with as many relevant "words" as possible. The advantages and drawbacks to these, and other, methods will be fully discussed in Chapters 5.4 and 5.5.

1.6 Structure of the inquiry

Chapter 2 will begin by arriving at a working definition of ritual using both non-academic usage as well as anthropological and archaeological treatments of the subject. Once the referent has been fixed for use in the thesis, I will discuss various attributes of ritual, its relation to religion and magic, and modes of religiosity. I will consider the literature concerning ritual deposition and its differentiation from mundane depositional acts. The final section of Chapter 2 will discuss the history of structured deposition; its British origins, and conclude with a method for identifying acts of structured deposition in the archaeological record.

The third chapter will concern meaning; of ritual acts, of ritual deposition, and of structured deposition. There will be an anthropological focus to the discussion, bringing in many case studies to highlight and to explain themes such as *gift*, *fetish* and *totem*, which are relevant to any methodological or historical inquiry into ritual (Smith 1894; Tylor 1891; Bell 1994; Durkheim 1971). Of necessity, some of the tools of the philosopher will be called upon to delineate between valid and fallacious lines of reasoning. The current interpretations will be discussed and criticised with recourse to ethnographic analogy. The chapter will conclude with a discussion of symbols and symbolism.

Once the theoretical backgrounds have been hashed out, a return to physical evidence is required. The fourth chapter will focus on the wider context of the Neolithic of Anatolia, as well as include in-depth descriptions of the sites selected for individual case-study. The practical issues of geographical and chronological reference will be set and the topics of; palaeoclimate and agriculture, relationships with animals, households and habitation practices, and finally mortuary practices with be discussed in relation to ritual in the Neolithic. Each of these issues are crucial to an understanding of the emergence of new forms of ritual activity in the Near East as they both frame and support current academic discussions of ritual. Furthermore, a contextual discussion will serve to highlight the issues I will be able to return to and add to in terms of my model in the final chapter. By focusing on these themes, I hope to enhance our understanding of the case study sites and underline the bigger ideas concerning ritual that will be drawn out during analysis.

The fifth chapter will be an explicit description of the approach to the problem; criticizing first previous methodologies, then outlining the methodology for the identification of structured deposition and introducing a new model for the interpretation of ritual acts.

The data set will be presented and analysed in the sixth chapter. A discussion of the trends and patterns of the data will be followed by the application of the new interpretive model. How meaningful the data are will be assessed, as well as their correlation with other data.

This newly-generated evidence will then be discussed in the light of wider Anatolian Neolithic issues in the 7th chapter. This concluding chapter will evaluate whether the research

question was answered, highlight possible sources of error, identify future avenues of research, as well as further uses for the new tool.

1.7 Final concerns

The questions described in this introduction are both methodological and substantive. In order to approach this constellation of questions, the creation of a structure to analyse ritual acts is necessary. I propose to translate structured deposition into a fruitful model for the analysis of Near Eastern ritual, present the conclusions based upon this analysis, and evaluate the usefulness of this new tool.

Chapter 2: Ritual and Intentional Deposition

2.1 Introduction

In order to approach the methodological considerations of ritual and intention with any validity, the referents and their history must first be fixed. To do so, changing theories of depositional activity and their relevance over time must be considered, and certain definitions must be clarified. How the author understands the difference between conceptual categories such as midden and rubbish; loss and abandonment; or ritual and religion affects the line of argument. Furthermore, the original intention behind the introduction of structured deposition must be explained in order to reform the idea into an analytical tool relevant to the Near East.

To achieve these goals, I will first consider ritual as used by laymen and scholars to arrive at a working definition to frame further discussion in this thesis (2.2). To include as thorough an account of possible definitions of ritual, I will follow Catherine Bell's comprehensive progression through the major theories concerning ritual and religion (1993, 1999). I will then ground ritual theory in practical terms by describing how relevant portions of the archaeological record are formed (2.3), and by sifting through different approaches to formation processes to find one method that best fits the research questions. As a major component of ritual deposition is the intention of the actors, I will examine how intentionality can be understood through the remains of human activity (2.4). I will then provide examples of how other scholars have categorized and identified ritual deposits, and critique these approaches. I will then introduce the history and use of structured deposition (2.5), and offer my understanding of how this descriptive category may be translated into an interpretive and analytical tool (2.6).

2.2 Ritual

This section will be structured around the search for a definition of ritual, using first descriptive, functional, and then structuralist theories of ritual. I will then discuss the relationship of ritual to magic, temporal considerations, and then focus on the symbolic element of ritual. In doing so, I hope to arrive at a comprehensive definition of ritual, both to support a broader understanding of ritual activity, and also as a springboard from which to base my new methodology.

In order to proceed, I must begin this study with a description of previous definitions of ritual, as their shortcomings form the basis of what this thesis seeks to address. Anthropologists as well as laypersons have been defining ritual for hundreds of years. These definitions vary from "any practice or pattern of behaviour regularly performed in a set manner, a procedure regularly followed" to "a practice that is associated with symbolic activity" to "religious practice" (Oxford Concise English 1995: 1189; Radcliffe-Brown 1922: 65; Lewis-Williams and Pearce 2005: 27). The common denominator is that ritual is something that is performed by human agents.

While this is a useful start, it is certainly insufficient. Looking to the anthropological literature, we see many repeated themes in the description of ritual activity. I have chosen a set of criteria that mark regular and distinctive aspects of human behaviour that are worth

considering as attributes of ritual: timing, transformation, performance, and symbolism. This deviates from Bell's characteristics of ritual (formalism, invariance, rule-governance, sacral symbolism and performance) as her focus lies with rituals that bear religious connotations (1997, Chapter 5).

A ritual act is repeated, perhaps at set intervals like equinoxes, or by the passage of events, such as deaths. Another way of saying this might be that a ritual has a catalyst; ritual activity is not random. There is a spectrum of ritual activity, wherein symbolic and formalized behaviours are emphasized. A ritual act often has an element of transformation; burial, puberty, birth, purification and hiding all involve changing a person or object in terms of their social role or status.

These basic definitions are descriptive, rather than functional. For many (Radcliffe-Brown, Durkheim, Malinowski) the importance of a ritual is what is does, or how it functions in human society. Emile Durkheim, in his 'Elementary Forms of the Religious Life,' claims that the importance of ritual lies in its ability to organize socially groups of people using the concepts of 'sacred' and 'profane' (1971: 36-7) and that entailed within rituals are 'rules of conduct' towards sacred objects (1971: 41). Using the definition of 'sacred' as revered or holy due to devotion or consecration for religious purpose, it is clear that the concepts of sacred and religion cannot be separated. However, this seems to imply that, according to Durkheim, the relationship between ritual and religion is a necessary one. To claim that *if* there is a ritual activity *then* there is religion confuses the protasis with the apodosis. Religion certainly requires ritual activity, but the reverse is not true.

Using religion to differentiate between mundane cultural activities and ritual behaviours is problematic, as there are many secular rituals. The decoration of a soldier is a solemn, public ceremony in which a piece of metal that symbolizes valour is formally pinned to the clothing over the recipient's heart, transforming a soldier into a hero. Scout initiation, sports team hazing and secular marriages also meet the conditions for ritual without recourse to religion.

Lewis-Williams and Pearce divide religion into three spheres, of which only one is practice. In addition to ritual, "religious practice also includes socially extensive projects that reproduce and entrench social disseminations" (2005: 27). Thus, it is not the rituals alone that cement social mores, but also other communal acts such as building construction. It would then be invalid to describe a ritual in terms of its function alone, if that function is shared by other practices.

One such non-religious practice that has been widely discussed in the anthropological literature is magic. Malinowski shows that ritual is a constituent of both magic and religion, and that the main difference is teleological (1948: 116-7). Whereas a magical rite has a specific aim towards which it is directed, a religious rite has no immediate goal, but serves to reinforce group cohesion through the reinforcement of tribal rules and morality (1948: 21, 45). Again, the focus is on the function of the acts. Malinowski differentiates between the social functions of magic rites which reaffirm man's power and optimism, or alleviate his fears and instil confidence; and religious rites which are used to teach biologically valuable traits through reference to complex supernatural myths (1948: 67-70). While delineating the variant ends and functions of rituals may be helpful for modern, observable practices, it is difficult to extrapolate beyond merely claiming

there might have been different types of rituals in the past. Magical and religious rites also differ in the conditions of practice. "In antiquity," Smith says, "all religion was the affair of the community rather than of the individual" (1894: 236). Malinowski agrees, claiming that religious rituals must be publicly performed (1948: 68). The agent of a magical rite is a sorcerer or wizard (Malinowski 1948: 48), whereas the entire group participates in a religious rite. Certainly there is evidence for both private, household magical rituals such as infusing wishes into figurines (Voigt 2000: 261-3) and public, community rituals that took place in specially-constructed buildings (*e.g.* - at the PPN site of Göbekli Tepe in the Urfa region of modern Turkey). The magic practitioner often casts a spell or recites an incantation designed to bring about a particular end through supernatural intervention. Those forces beyond the laws of nature (or the forces of nature themselves) are harnessed to the sorcerer's will or temporarily controlled or cajoled into assisting her achieve a specific goal. It is important to keep in mind that the distinction between religion and magic may not have been so clearly delineated in prehistory. Additionally, the distinction between mundane, non-magical activities and those with supernatural meaning may have been similarly blurred.

One difference between mundane customs such as hat-tipping in greeting and special ritual acts is the timing in which they occur. Andrew Sherratt uses the modern dichotomy between secular and sacred to explain further. Secular activities are constant and every day, whereas sacred activities are occasional, and periodic; and secular time is "punctuated by ritual observance" (Sherratt 1991: 50). This definition works very well for modern populations, but meets with difficulty when trying to extrapolate backwards in time. Interrupted patterns of use are difficult to recognize in the archaeological record. A ground stone pestle used once a week would be nearly indistinguishable from one used every day.

On the basis of widespread decoration at sites like the PN levels of Çatalhöyük in Central Anatolia, the argument can easily be made that the modern dichotomy between sacred and mundane was not as clear-cut in the Neolithic, and perhaps there was no disjunction at all. Objects used in rituals may have been 'sacred' during their use in the ritual, and returned to mundane status or discarded afterwards. Through the course of a ritual, mundane objects could also be made sacred.

The temporal aspect of ritual is especially well-documented in Van Gennep's *Rites de Passage*, in which rituals are structurally separated into three main stages. This is especially relevant to archaeology, as the different parts of a ritual may correlate to different depositional acts. The first part of rites of passage or transition involves separation from everyday life, in which the individual is stripped of her personhood. This is followed by the prolonged marginalization of the individual, who exists in a liminal state. Victor Turner describes the state thusly:

Liminal entities are neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremony. As such, their ambiguous and intermediate attributes are expressed by a rich variety of symbols in many societies that ritualize social and cultural transitions. Thus, liminality is frequently likened to death, to being in the womb, to invisibility, to darkness, to bisexuality, to the wilderness, and to an eclipse of the sun or moon

(1968: 95).

The final stage of the ritual is the process of aggregation, of the individual's reintroduction to her everyday life with a new social standing or identity. At each of these stages, rites specific to the changing position of the initiate are performed. The tripartite structure of rites of passage is largely accepted, though at least one historian claims that women do not experience the liminal stage (Bynum 1991: 32-34).

The temporal element of ritual is clear in certain deposits which show multiple depositional events, such as repeated internments at the same location. A famous example is Lorblanchet's recent attempt to show the stages, or episodes of painting events at the Gravettian cave in the south of France called Peches-Merles (1996: 212-3). Of course, there are examples of rituals which occur over longer periods of time and in multiple stages, but even rituals that occur at "one sitting" may have multiple depositional events. The Kaatans of the Andes feed their ancestors in a rite which spans several hours. They first wrap symbolically charged items in cotton, fill seashells in a specific order, then, moving to new location, dump the contents of the shells into a firepot, stuff the dried foetus of a llama with cotton-wrapped items, bury the foetus, and finally; rip open live guinea pigs and burn their entrails for divination (Bastien 1978: 142-8). This ritual progresses through time in order to attain communication with the supernatural, or literally metaphysical (In this case, their ancestors).

It may be going too far to attempt to extrapolate on the basis of contemporary, recognizable rituals into the Neolithic. If so, then a functional definition of ritual is based only on an argument from analogy, which is not a deductively valid argument. The strength of the inference can be weighed by determining the number and variety of bases for the inference, their relevance and number of dis/similarities. It is also helpful if the conclusion of the analogical argument is more conservative than the premises. As we have little choice but to rely on arguments from analogy, instead of focusing on the specific function of ritual activity, it would be more helpful and more valid to generally describe the symbolic component of rituals, in order to reach a conservative conclusion.

Perhaps the most salient identifying characteristic of a ritual action is that it has symbolic meaning for the participants. A symbol represents an idea or object by its similarity to the other, by association, or by convention. The invisible or intangible may be expressed through sensuous or visible presentation, or an object may be involved that represents something else. A clear example of the former is the aforementioned wall-paintings and installations at Çatalhöyük. An example of the latter is the use of the milk-tree during the Ndembu girl's puberty ritual, wherein the white sap of the tree refers to the breast milk (See Turner 1967 for more on Ndembu ritual). There are also instances of private rituals where even what is symbolized is unknown, but the significance is still very strong. One personal example is a ritual my mother and I have before taking leave of each other. One person says 'See ya later, alligator' to which the expected response is 'In a while, crocodile.' I have driven back home several miles after forgetting to say my lines. There is definitely a symbolic meaning, love or luck at parting, though this repeated action (much like an athlete's lucky socks) does not have any religious connotations.

In some sense all rituals are public acts, in performance or in knowledge. This is not simply because the motions, tools and incantations are publically-known, but because the symbolic meanings invoked are public (See Geertz 1966; Taussig 1999). In the absence of public presence, public awareness or knowledge of a practice, as well as the deployment of culturally-constructed symbols, allows for this claim (but see Bell 1994 *contra*). There are many levels between public and private; from a single person performing a ritual, to an isolated family group performing a ritual amongst themselves, to the involvement of an entire community.

Bartlett differentiates between a sign, which is anything that stands for something else, and a symbol, which simultaneously has both a face value, and a hidden value (1925: 1). He goes on to delineate the functions of social symbols: they "facilitate transmission of culture from group to group (4)...facilitate preservation of groups (5)...(and) promote the harmony of the group (7) ...through its emotional power" (9). The same symbol may operate differently depending upon the discursive space in which it is deployed. Thus, a symbol which functioned to promote harmony may also be used to foment dissent or violence.

Symbolic packages deployed in rituals may even function unto themselves. The example of the Orokaiwa of New Guinea given by Bloch (1992) shows how the ritual progresses through time and space, and how different symbolically charged events correspond to various meanings. He, like Malinowski, emphasizes how very prominent the group itself functions symbolically in small bands. The period of separation-from-the-group precedes the liminal state of dead-to-the-group. This is understood by the metaphor of the pig and the hunter in Orokaiwa initiation rituals. Youths are 'hunted' in the same manner as pigs, chased out of the village and away from the group. Upon their return to the village, the initiates now slaughter pigs, killing a symbol of their own mortal, nurtured and human nature (1992: 11-14). The association with nurturing and the village shows again how strong the identities of the individual and the group are bound. The physical delineation between the body of the individual and the body of the entire group is blurred, and some rituals even serve to point out how weak this boundary is (1992: 35). It is for the good of the group that the liminal space between individual and collective is not often challenged.

Rituals that do not occur often have a greater ability to sear their meanings into the consciousness of the participants. Whitehouse (1995) calls these low-frequency, high-arousal rituals *imagistic*. Conversely, rituals that are common, but not as jarring to the psyche he terms *doctrinal*. "Evidence for low-frequency, high-arousal rituals at Çatalhöyük comes in part from pictorial remains. Two houses in Levels V and III have wall paintings that show the teasing and baiting of wild animals…The teasing and baiting scenes appear to be accompanied by dancing and music…Foundation rituals associated with the houses would have occurred every 70-100 years, and in some cases they appear to be associated with feasts. There is frequent evidence that house foundation was associated with highly charged events such as the burial of neonates and young children, and the placing of human skulls at the base of house posts" (Whitehouse and Hodder 2010: 128-9).

For the purposes of this investigation, I will use the following definition of ritual: a formalized activity performed by human persons repeated at certain intervals with symbolic meaning for the actors. The use of such terms as performance and actor reminds us that a ritual is

a theatrical act, which itself presupposes an audience. Public ritual declares or requests transformation before the community, while both public and private ritual honour a transformation before a supernatural audience.

As the main goal of this thesis is to introduce a new methodology for the identification and interpretation of ritual acts in prehistory, it is crucial to begin by fixing the most important referent: ritual. Previous definitions have been too broad to allow formal inquiry, specifically-created with a particular dataset in mind, or unwilling to incorporate post-processual considerations such as symbolism or meaning. The salient characteristics of this definition of ritual include: formality, repetition, timing, symbolic meaning, theatricality, and an element of transformation.

As this study focuses on rituals involving special depositional acts, we must consider the types of depositions in the archaeological record, how to differentiate between them, and the theoretical approaches used to evaluate these differences.

2.3 Formation of the Archaeological Record

One of the central issues in this study is how to address certain types of deposits in the archaeological record. Very broadly speaking, just about anything in the archaeological record can be identified as a deposit or a cut. While a cut is the removal of material, a deposit is an addition of material: be it a wall, a layer of silt after a heavy rain, or the fill of a pit. Identifying a deposit as an accumulation of material is the first step to identifying the factors that led to its deposition. Until recently, archaeologists themselves hesitated to add new theory to the world of science, considering their milieu to be the description of culture histories alone, as "Archaeological material, being necessarily fragmentary, readily lends itself to misleading reconstruction" (Smith 1911: 445). This feeling of helplessness against the ravages of time strongly influenced the beginnings of ideas about how the archaeological record is formed. Formation processes were first explicitly discussed in the late 60s as part of the "new" archaeology. Ascher suggested a theory of increasing unreliability in the archaeological record proportional to the length of time passed since deposition (1968: 50-51). Another early approach to formation processes was Cowgill's statistical sampling of physical finds to overcome bias caused by formation processes (1970: 163). This too approached the creation of the archaeological record in the detached, formulaic method typical of processualist, or "new" archaeology with which archaeologists wished to bring themselves into the sphere of accepted sciences.

In the 1970s, another view emerged; one rooted in behaviourism. In psychology, behaviourism seeks to understand and explain human behaviour without recourse to mental states. Behavioural archaeology focuses on material culture, rather than cognition, as the most salient aspect of culture. As such, the focus is on the "life history" of an artefact, which is a re-telling of the human behaviours that created, used and discarded that artefact. According to behavioural archaeology, the archaeological record preserves a "transformed" or distorted picture of artefacts *qua* their participation in a system of human behaviours (Schiffer 1987: 10). Cultural materials are affected by both noncultural formation processes, which are the result of natural,

environmental events; and cultural formation processes, by which the agent of transformation is human behaviour.

By understanding the series of changes to materials, and the patterns that these processes often follow, behavioural archaeology hopes to overcome the limitations of archaeological inference and bias by compensating for the distortion. The bias in evidence is much easier to overcome with the presence of historical records to explain what might not be easily inferred, yet prehistorians must make do with an exceptional understanding of depositional processes and biases.

This understanding of cultural transforms allows for the prediction of what material might be deposited by a social system (Binford 1973: 242; Schiffer 1976 in 1995:10-11; Hodder 1982b: 11) and also what sorts of material would not be deposited. While this is a valuable tool, it must be remembered that social determinants of the formation processes of the archaeological record are themselves changeable and arbitrary (Thomas 1999: 62), much like the human persons responsible for any depositional act. It seems that any attempt to make laws or equations on the basis of social determinants requires some insight into the mental states of the members of the society.

In the early 1980s a group of archaeological theorists, reacting against the strict logical positivism of most processualist approaches, proposed that it was impossible to divorce an object of archaeological study from the history and culture of its creators (Hodder 1982a). This gave rise to a "post-processual" archaeology that, while varied, diverged from processual archaeology by its acceptance of cognitive, contextual and feminist approaches to culture. This postmodern approach to a discipline only recently accepted as a science caused a small uproar at the same time as it opened up new avenues of inquiry. Perhaps most distressing to materialists, several arguments have been made from ethnographic analogy that ideological structure can be seen in a material record (Turner 1967; Hodder 1982b: 85).

By focusing strictly on the artefacts and contexts of deposition, and ignoring the social context in which they were created, much of the information relevant to archaeologists was overlooked. Thomas (1999: 62) warns that the eliminative behavioural method proposed by Schiffer ignores some of the cultural behaviours it sets out to determine. In any case, cultural transformations are the result of human behaviours, and should be of interest to a behaviourist, especially if parts of a behaviour-producing system are visible in the archaeological record. In other words, a strictly behavioural approach to depositions is insufficient.

Instead of considering artefacts as the result of chains of behaviours, Kopytoff (1986: 67) has suggested creating a "cultural biography" of objects, as this allows not only for the behaviours that created and changed the object, but also attitudes, identities, intentions and other mental states of the human persons who created and interacted with the object.

It was not only the prescribed ways of seeing artefacts that changed as a result of the post-processual explosion, but also the approaches to deposition as a practice. In particular, Henrietta Moore's 1982 paper concerning the functional and symbolic requirements for the organization of 'refuse' paved the way for a structuralist analysis of depositions within settlements. Her discussion of Marakwet disposal practices showed how conceptual and symbolic schemes which may never

be made fully explicit could still structure the distribution of rubbish (for example, 1982: 78, Fig. 4 shows the relationship of types of refuse and location. Ash is discarded behind the women's hut, while goat dung is discarded below the men's hut). Many disparate acts may appear to have identical outcomes, thus a cultural biography is necessary to determine if a deposit was intentionally created or had symbolic meaning. Acts of deposition, such as Marakwet rubbish disposal, is not deliberately symbolic, yet it expresses the categorization scheme of a society. Other acts of deposition may display patterning, although this may be as a by-product of patterned activity and not as structured discard.

Of these deposits, it is important to determine which discarded materials are discarded as refuse and which are specially placed for some other reason. This can be difficult, as ethnographic fieldwork has shown that refuse does not have the same function in all places and at all time, and may be separated on the basis of conceptual schemes (Bulmer 1976:19; Hodder 1982b: 159). The organization of space invokes certain meanings (Moore 1996: 115) and depositions may differ in meaning according to in which of these spaces they are placed. The sorts of depositions relevant to this inquiry are those created through human agency, deliberate symbolic acts relating to specific objects. One way in which theorists have approached the intentional nature of seemingly mundane deposits is through 'structured deposition' (See 1.4, or 2.6 for a thorough treatment).

2.4 Intentionality of Depositions

This sections aims to distinguish between different types of depositions based both on the human behaviours and mental states that led to their inclusion in the archaeological record. A strictly behavioural approach does not have recourse to intent, and it is precisely this that helps to differentiate between loss, discard and abandonment.

Loss is unintentional. Items that were dropped, that fell aside or were simply forgotten, are lost. Smaller items are more likely to be overlooked, as well as objects that are easily portable, or used in transit (Schiffer 1976: 77). Both valuable and worthless items can be lost. Loss may even account for some commonly-perceived associations, like pennies and couches. The question then becomes whether loss can be recognized and isolated from the rest of the archaeological record. The correlation between loss and transport routes and been commented on by Chappell (1987: 339) among others.

Loss may be easily confused with abandonment, as lost and abandoned artefacts may both be isolated from other cultural remains. The main difference between a lost item and an abandoned one is the conscious decision of the agent. Abandoned items are intentionally left behind, rather than unintentionally separated from persons. Abandoned items tend also to be valuable, or quite large. A lost valued item would have more effort put into its recovery. It is common to consider a structure abandoned, but one would be hard-pressed to claim that it had been lost. The human behaviour that causes the transformation of an object with an active use-life into material in the record is similar *i.e.* - walking away from it, but the mental states that prompt this behaviour are different; in the case of loss, the person is unaware that they are leaving something behind, but in the case of abandonment, they decide to leave it behind. A purely behavioural approach cannot distinguish between the two, though Schiffer offers one criterion:

abandoned objects are usually less damaged by trampling than objects left at their place of use (Schiffer 1985: 25). This criterion assumes that objects are lost at their place of use, and never abandoned there.

Another type of intentional deposition is refuse, or rubbish. The current conception of rubbish is worthless or unwanted material that is discarded. However, we must be careful when we apply these notions of value and rubbish to prehistory, as ethnographic research has shown us that discarded material may fall into several categories, none of which mesh neatly with our modern definition of rubbish (Moore 1982: 76). Rubbish is often seen as at the end of the use-life, or the in final chapter in its cultural biography. During the use-life of an object, it may have been re-used or discarded several times. Prehistoric villages had midden areas containing used and/or unwanted organic, bone, stone and clay objects, in addition to human and animal excreta. Middens tend to be larger areas "relatively rich in surviving material" (Needham and Spence 1997: 79) with evidence of episodic dumping (80). The proximity of these areas to the dwellings allowed for quick disposal of unwanted material, and also for ready retrieval of material for re-use. Middens were areas used for myriad human activities, such as burning, and likely also goldmines for the imaginations of idle children.

Though middens are easy to recognize in the archaeological record, they are not the only instances of refuse deposition. Some refuse is left at its location of use and this is called primary refuse by Schiffer (1972: 161). Material in middens is usually brought from some other location and can then be called secondary refuse. This is by far the most common type of refuse. Primary refuse is quite rare, even on occupation floors (Schiffer 1987: 79). Prehistoric floors were generally kept quite clean, and items were often swept away from their place of use.

The deposition of refuse is often patterned across a site, and this patterning can give us insight into the structuring principles behind the settlement, as well as the significance of various types of refuse (Moore 1982: 79). Understanding the functional and practical requirements of the spatial organization of refuse allows any anomalies to be "attributed to the intervention of cognitive or religious factors" (1982: 76). Material may be discarded due to a negative culturally-constructed connotation, such as pollution or ritual uncleanliness. In this case, the removal of ritually polluted items is not merely throwing out the trash, it is more meaningful. When discarding refuse, the act is not meaningful, but expedient; whereas the act of intentional deposition is meaningful (Fontijn 2002: 33).

Whether we have access to the reasons behind the patterning, the structure itself is visible. It is this structure that contributes to an understanding of intentional deposition. Fontijn offers three criteria that must be met in order for a meaningful deposition to be recognized archaeologically. First, the deposition must exhibit patterning. For example, the same types of objects are found in the same types of locations. Next, these patterns should not be explained by discard, loss, or other depositional processes. In other words, the patterning shown should not be the result of the nature of some original activity that is later reflected in discard as a patterned deposit, such as midden heaps near butchery sites. Finally, these patterns cannot be a result of research factors or other post-depositional processes (Fontijn 2002: 38).

While these criteria are certainly basic to an understanding of meaningful deposition

across large sites, not all intentional depositions can exhibit patterning. An isolated, extramural burial is certainly meaningful, but it is without comparanda. The absence of patterning across a site can also be meaningful. Recognizing patterning is important for the identification of meaningful deposition, both for the deposits that fall within the pattern, but equally so for those that do not. It is helpful to know the standard procedure of disposal, so that any anomalies can be identified. It is these anomalies that lead to a greater understanding of cultural factors such as pollution or appropriateness that led to the deviation from the pattern.

The meanings that come through patterning and structures reflect upon the ideology of the group that produced them. A particularly meaning-laden type of activity is participation in ritual. I will now discuss the identification of ritual deposits, provide a few examples, and begin a critique of models for the identification of ritual acts (which will be fully discussed in chapter 5).

2.5 Ritual Deposits

Even given an agreed-upon definition of ritual, anthropologists and ethnologists in the field do not have exactly the same problems that archaeologists do in identifying ritual activity. As such, they feel privileged to describe the symbolic activities of their interlocutors. While ritual plays a central role in creating ideologies (Bloch 1985: 34-41) and in reinforcing shared cultural knowledge and relationships (Turner 1967: 40, 45), so do everyday cultural activities (Douglas 1966: 38). The anthropologist has an easier time distinguishing between ritual and common activities, as she can simply ask and observe.

Verhoeven offers a new model for the recognition of ritual in prehistory. The first step is the identification of ritual framing, "the way, or performance in which people and/or activities and/or objects are set off from others for ritual, non-domestic purposes. A difference is being made..." between normal locations, sizes, orientations and a particular building, deposit or object" (2002: 233). Framing is about recognizing possible ritual practices, it is the starting point (2002: 236). The differences of timing that Sherratt used to distinguish between secular and sacred activities could be considered temporal framing.

For Verhoeven's method of identifying ritual, one must first understand what is the norm for a particular site, and then be able to recognize deviations from this norm. This seems a very reasonable approach when there is sufficient evidence from a site to be able to determine that a difference is statistically significant. However, there may be cases when an object, person or activity is only temporarily set off from others like it for ritual purposes. Ritual is made up of actions, not objects (Barrett 1988: 31), and yet what are preserved in the archaeological record are only the remains of these actions, which are artefacts and ecofacts. Mundane objects may be used in ritual activity without any intelligible sign of that use. If those objects are discarded in a special way, then their final deposition may provide some insight to ritual activity.

The remains of ritual activity are more clearly seen through certain types of deposits than through objects. For example, a pit cut through the floor of a building preserves the sequence of

stratigraphically recognizable actions. Some aspects of the archaeological record preserve actions better than others, but prehistorians rarely have the luxury of overwhelming amounts of evidence.

The deposition of objects associated with ritual activity may have meaning beyond that of the intended ritual. The act of deposition can concern hiding objects from the public view, and may be a way of immortalizing or commemorating a previous act. That is not to say that the act of deposition cannot itself be the 'main event' of ritual activity. The act of hiding confers upon those present the special privilege of knowing the location of the hidden object or objects. The deposition of objects associated with rituals may only be detected during deconstruction or excavation. One example of this is the burial of a human baby between the courses of a double wall at Basta (see Gebel 2002: 124, Fig 4). Just as what is hidden may later be revealed, so too may the knowledge of hidden objects be revealed. In other instances, the act of deposition may serve to create a visible memorial, as in the creation of a barrow or plastered installation. In this situation, the memorialisation of an event is made public, and all have access to the knowledge of its location. Objects associated with ritual activities may also be deposited in association with other visible symbols, such as paintings or reliefs on walls. Certain objects associated with ritual activity are intentionally made visible, like the plastered bucrania at Çatalhöyük, the skulls at Çayönü, or the bucrania hung opposite the entrance to a public building at Hallan Çemi.

In sum, potential ritual activity may initially be detected by the abnormal deposition of mundane items, association with symbols, or deviation from a norm.

2.5.1 Examples of ritual deposits

Certain types of deposits which are commonly seen as the result of ritual activity are: foundation deposits, *bothroi* (house pits), mortuary deposits and hoards (Peltenberg *et al.* 1991: 87). However, it is important to note that the mere presence of these "particular types of archaeological deposit do not necessarily reflect the occurrence of ritual activity" (Barrett 1988: 31) nor do unusual contents necessarily "imply deposition through ritual action" (Needham and Spence 1997: 87). Though it is true that none of these deposits necessarily imply anything, all of these practices meet the criteria set out by Fontijn for recognizing meaningful deposits (Fontijn 2002: 38).

Foundation deposits are anything laid down at the founding of a building and usually are neither decorative nor useful (Ellis 1968: 1). Building deposits should be included here, as they are often invisibly included in walls, while foundation deposits tend be beneath floors or thresholds.

Bothroi is a term used to describe pits and holes in Greek, and tends to be used primarily by archaeologists working in Greece and Cyprus. To make Peltenberg's list more widely applicable, the term pits should be used instead. Much of the current work concerning depositions in British prehistory focuses on pits, which were a recent topic of the Neolithic Studies Group (November 9, 2009). The salient point about prehistoric British pits is that their contents appear to be mundane refuse. However, the rubbish in these pits has been intentionally arranged within or between pits, or the spatial location of these pits is meaningful. In terms of patterning, the spatial organisation of rubbish is mostly functional, while anomalies in the patterns could be attributed to cognitive or ritual intervention, or a combination of functional and ritual factors

(Moore: 1982: 76).

Mortuary deposits are the least controversial in terms of their acceptance as the result of ritual activity. An inhumation can also be a combination of the types of deposits from Peltenberg's list. A burial may be in a pit, under a house, or both. Sometimes, valuable or symbolically weighted items are buried with a person.

Another type of intentional, valuable deposit often seen as a result of ritual activity is a hoard or cache. A cache is a hidden store of material. Hoards are a supply or accumulation that is hidden or carefully guarded for preservation, future use. The terms cache and hoard are often used interchangeably, while others feel that one has a more charged meaning than the other. There are many different types of hoards, some hoards are utilitarian, others ritual (Bradley 1988: 37). Examples of utilitarian hoards include craftsman's hoards or personal hoards.

According to Schiffer, the objects found in a ritual cache are not usually found among the more every-day objects in a secondary refuse deposit (1987: 79). Many authors (Schiffer 1987, Hill 1995, Fontijn 2002) agree that complete, unbroken, and often unused objects are an indication of a ritual, rather than mundane, cache. The most glaring issue with this criterion is that none of these authors focused on the Neolithic or the Near East. Their view is biased towards toward the westernmost parts of Europe (Hill, Fontijn) and the Americas (Schiffer). While there is evidence of caches of complete, unbroken and unused objects in the Near East (*e.g.* obsidian blades at Çatalhöyük), there is also evidence of caches of deliberately broken and damaged objects (*e.g.* at 'Ain Ghazal) and collections of heavily used items (house closing deposits). Fontijn offers a page-long table of the criteria used by various authors since 1845 to distinguish between ritual and profane hoards. Of the 32 entries, each of them is concerned with some or all of: wet or dry location, object type, object treatment, association, and ordering (Fontijn 2002: 16) which Fontijn separates into context and contents.

These criteria are similar to Verhoeven's "framing" methods, though Fontijn uses much more general categories. Verhoeven makes no difference between context and contents in order to be able to describe the context of the contents. A partial list of ways in which material might be ritually framed includes: location, shape, size, orientation, material, features, inventory, association, number, functionality and knowledge (2002: 237). This list has the dual advantage of being both more comprehensive and created with the Near Eastern Neolithic in mind. Thus, it is relevant not only to caches of suspected ritual nature, but to all kinds of caches, installations, deposits and buildings. This method of identifying ritual deposits could also be used to detect structured deposition, which is patterned across a site or special deposition, which appears to be intentional in that it cannot be explained by loss or post-depositional factors, yet falls outside the known pattern. By combining the concept of framing with the categories of context and contents, an analytical package relevant to the problem can be employed.

2.6 Patterns - Structured Deposition and Ritual Deposition

The seminal paper concerning structured deposition is the 1984 paper by Richards and Thomas, 'Ritual activity and structured deposition in Later Neolithic Wessex.' While the paper claims to seek a counter to the invocation of ritual as a 'catch-all' (189), it in fact makes concrete a

line of reasoning that had previously been implicit (*e.g.* in Case 1973). Their argument began with the premise that ritual activity involves formalized and repetitive behaviour. They then analysed the spatial patterning of particular forms of deposition, and concluded that certain deposits were too formal to be utilitarian, that "the deposition of particular items was being controlled across the site" (1984: 204). The upshot, they argued, was that structured depositions can be an archaeologically visible aspect of ritual behaviour (1984: 215). (They later agreed that the rigid divide between ritual and mundane behaviour was inappropriate, see Garrow 2007: 6 for criticism).

Almost immediately, other British archaeologists focused on this type of analysis, whether offering alternative explanations (Healy 1988), interpreting proportions of deposited material (Cleal 1984) or expanding the inquiry of structured deposition into the Bronze Age (Bradley 1990) and Iron Age (Hill 1995). After Thomas's 1991 book, *Rethinking the Neolithic*, which had an entire chapter dedicated to a "geneology of depositional practices" which he suggested ought to be considered a "cultural practice in itself (1991: 56)" was published, the idea of looking at structured deposition was entrenched in interpretations of British prehistory. Unfortunately, the common phrase - structured deposition - was decorated with many purpoted synonyms in the explosion of publications that followed Richards and Thomas' 1984 paper. These synonyms were often contradictory, demonstrating that what they had accomplished was in fact a replacement of one "catch-all" with another.

Thomas, despite his role in introducing structured deposition, has done a great deal to add to the dialogue. He has suggested that the ability to affect the environment had an important effect on the people performing these acts (Thomas 1995: 211). A few years later, he claimed that the act of deposition is more important to the people performing it than the deposited items (1999: 73). Continuing the discussion of the relation of people to their depositions, David Fontijn has suggested that selective depositions cement new relations between people, land, and objects (Fontijn 2002: 34). The participant(s) give up an object to a location that has meaning to people, and all three are changed because of it.

Observable patterns in the location and types of material are based on cultural rules, implicit or explicit, about what is appropriate to put where. Needham calls these patterns selective deposition (1989). Among the patterns of structured deposition, many have been discussed in terms of location and placement, including the redeposition of midden (Healy 1988); placement of items in mine shafts (Russell 2000); placement of items in causewayed enclosure ditches (Sharples 1991); placement of items in post holes (Pollard 1995); in rivers and bogs (Bradley 1987); or in ritual pits near megalithic monuments (Richards and Thomas 1984). The concept of structured deposition developed in such a haphazard way that it came to mean any deposition that did not conform to a norm or an average pattern.

Some theorists focused on particular aspects of structured deposition, investigating the specific intent in deposition. For example, Cleal (1984) suggested that some items, due to disproportionate representation, were specially selected for deposition. This idea was elaborated on by Pollard (1993), although their approach to intent instantly assumed symbolic significance. Patterns of discard must be understood within the context of social actions in which they were

created (Moore 1982: 77), and so require an attempt to understand the symbolic or ritual value of different types of items. Hill, working in the Iron Age of England, has found that structure alone is not sufficient to claim a deposit is a ritual one (Hill 1995: 4, 95; but see also 2.3 for my discussion).

2.6.1 How structured deposition will be identified in this thesis

At the end of section 2.5, I proposed a combination of theories deployed with respect to Near Eastern evidence to analyse ritual acts that involve artefact patterning. While extrapolated from a different body of evidence, the similarity to the British concept of structured deposition is undeniable. The formalization of spatial patterning that was so crucial to the identification of structured deposits in the British Neolithic was largely due to the absence of other identifying attributes. In other words, the wider context at many of the British sites is restricted to the deposits themselves, without recourse to settlement data. This is rarely a problem in the Ancient Near East, where most instances of artefact patterning occur within settlements. The expansion of context allows for a more in-depth analysis, of which the identification of structured deposition is the starting point, not the end. By first becoming familiar with the norms of a site or structure, framing (as described in 2.5) can then be employed to determine any anomalies that might be indicative of ritual behaviour. The categories subsumed under context and contents will then be applied to determine the possible variants of ritual activity. As ritual is inherently a symbolic act, the symbolic content of ritual depositions is a crucial element, and cannot be overlooked as it often was in conjunction with British Neolithic evidence. As such, it is not appropriate to continue a discussion of structured deposition, as this categorization comes laden with biases, largely arising from its creation and misappropriation with respect to British evidence. Henceforth, I will discuss ritual deposition (see Garrow 2012 for a discussion of terminology).

2.7 Assumptions

While a truly emic approach is not possible, our modern biases may be mitigated through their recognition. Theories concerning deposition, its structure and ritual have been enriched by new strides in archaeological thought over the past fifty years. It is important to keep in mind that we are approaching these issues from viewpoints that are conditioned by several thousand years of change, and with different ways of making sense of what is sensed. Modern theorists are over-fond of creating dichotomies that may not reflect how prehistoric peoples understood their world. Evidence from PPNB sites shows that there probably was not such a sharp divide between ritual and secular activities or locations. Fontijn exhorts us to look beyond our own preconceptions and try to be "sensitive to such heterogeneous orderings of landscape as constructed by prehistoric communities themselves" (Fontijn 2008: 104).

It is also important to recall that the human persons who created and interacted with these deposits were individuals, with their own understanding of cultural events. During ethnographic fieldwork, it has been shown that there are many different explanations for the same behaviour (Hodder 1982b: 156) or for the same symbols (Boas 1955: 102). His "magic bear totem" may be his sister's toy. Cognitive intervention need not necessitate ritual activity.

Another assumption that should be questioned is that the end of an object's biography is

when it is deposited. There plenty of evidence in the Near East of the practice of digging down through closed deposits to retrieve items, for re-installation, display or redeposition. Secondary burial is also common. These ideas must be investigated more closely.

Finally, symbolically-charged items may not be artefacts. The use of the milk-tree in fertility rituals shows us this. What meaning is ascribed by an outsider may also be quite disparate from the meaning ascribed by the insider, though both recognize an artefact as a symbol. Lévi-Strauss (1972: 54) provides the example of a Papuan tribe that uses the image of a bird in certain rituals. It is the terrifying screeching of the animal and the emotional response that the sound evokes that is important to the act, but only the picture is shown. This perhaps highlights our determination to focus exclusively on what is available to the vision. Sounds, as well as odours, textures, tastes and various states of imbalance can act both as signs and as referents. Unfortunately, the scraps of material culture that remain for archaeologists to sift through are fragmented artefacts, and any artefact could be associated with any meaning. How we choose which artefacts to focus on depends on our individual biases. How we choose to interpret any object depends on the context of its discovery. The identification of an object as a symbol is quite difficult, so any object that has been anomalously placed or physically framed can be identified as a potential symbol. The meaning and interpretation of symbolic activity, and specifically ritual depositions that exhibit patterning, will be addressed in the following section.

Chapter 3: The Meanings of Ritual Deposition

3.1 Introduction

This sections aims to go beyond the definition and identification of structured deposition, and discuss how archaeologists have interpreted structured deposition. The set of discussions in this chapter relates to the practice of ritual deposition and the significance the practice held for the participants in these acts. I will begin by discussing the term 'meaning' as it is often used without first fixing the referent. After arriving at a definition, I will divide current approaches to meaning symbolic into 3 main categories that help to explain some of the factors of ritual deposition. This list is not exhaustive, but provides an excellent overview of the main themes appealed to in discussions of the signification and intent of prehistoric depositions.

While much energy has been expended in discussions of the British Neolithic defining structured depositions, few archaeologists have been willing to go beyond identification and ask further questions about meaning. At this point it is necessary to step back and briefly deconstruct this word and how it is used in archaeological contexts. The deployment of this term generally implies one (or more) of three aspects of 'meaning': teleological, content and connotation. The teleological aspect of meaning considers the end or the purpose of an act, what something has been designed to do. This is the most active of the three aspects of meaning, and the easiest to access without recourse to an interview. A synonym often used would be intent. In this respect, I have already dealt with intent in section 2.4.

Secondly, there is the content or signification aspect of meaning. This entails the expression or indication of an act or object, or that which is being conveyed. When I use the word 'meaning' as a noun, I will be using this definition.

Thirdly, there is the symbolic aspect of meaning. This is similar to the concept of connotation as it is used in linguistics, in that one must be a participant in the culture that created the symbolic content to access it. As such, any attempt to completely understand this aspect of meaning is generally considered to be hopeless in prehistory. However, due to huge quantities of well-excavated evidence, and a logically valid argument, we may be able to approach symbolic meaning in some cases.

Not unsurprisingly, those archaeologists dealing with Near Eastern evidence have been less reluctant to consider meaning, perhaps due to the comparatively more spectacular depositions. As with any archaeological remains that cannot easily be ascribed a utilitarian meaning, almost all instances of structured deposition are associated with ritual acts. Most common in discussion of structured deposition is to ascribe meaning to specific types of depositions rather than to the practice as a whole.

An excellent example of this phenomenon is the chapter by Russell and Meece in the Çatalhöyük Perspectives volume (2005), which discusses animal representation and animal remains and, of necessity, touches on issues such as the problem of differentiating between ordinary discard and special disposal of faunal remains. The chapter is an exceptionally comprehensive catalogue, but does not attempt any interpretation or discussion of special

depositions (Later treatments of the same assemblage, such as the 2012 volumes, *Religion in the Emergence of Prehistory* and *Social Zooarchaeology*, rectify this oversight). As there is very little treatment of this subject, theories of structured deposition tend to be site-specific, as at Çatalhöyük, and often concern mortuary practices.

In the 1984 study that brought the concept of structured deposition to the forefront, it is most irritating that meaning is at best hinted at: deposition of animal remains "could have much to tell us concerning the norms and values" of a society, especially ideas of purity, strength or appropriateness (Richards and Thomas 1984: 206). This type of approach, both tentative and dealing with a very specific type of deposition, is quite common. In even more general terms, "deposition of valued items...seems to have been an important element in ritual practice" (Richards and Thomas 1984: 214).

The placement of cultural material is governed by a number of convictions (Bradley 2008: 15), and the goal of this section is to catalogue and dissect what has already been discussed. The interpretations offered can be grouped into a few broad categories, involving the relationship of people to the environment, people to each other, and people to the supernatural (see definition in 2.2). Theories about the domestication of space (see Hodder 1990), territorial marking, and ideas of ownership comprise the first group. The second group includes social status markers, such as control of elite items or knowledge. According to those theories in the third group, structured deposition served to focus attention, link to and transition between otherworldly connections (For a description of how magic relates to the supernatural, see section 2.2). Exemplifying the lack of agreement on how to approach the interpretation of structured deposition, each section will include discussion of interpretations offered for the exact same deposit; a cache of obsidian blanks at Çatalhöyük.

These categories of interpretive approach are themselves quite artificial: arbitrary distinctions that cannot have complete explanatory success as they are themselves, incomplete.

3.2 Relationship of people to the environment

Some theorists hold that the meaning of depositional activity is related to the need of humans to alter, affect or personalize their environment. Most of these approaches have a very narrow focus on the built environment, and rarely make the initial distinction between nature, wilderness, environment, land, landscape and place. Let us begin by rectifying this oversight, and proceed by carefully examining the use of these terms. As a baseline set of definitions, I will follow Ingold (2000), though with significant deviation.

An entire thesis could be written about the uses and connotations of 'nature.' Let me begin by claiming that nature does not exist. Nature is a huge term, perhaps most often conflated with wilderness in its usage. Cosgrove and Daniels (*The Iconography of Landscape* 1988: 1) wish to draw a dichotomy between nature and landscape, where 'nature' is the external, untamed and frightening, and the landscape is 'nature that has been tamed' or named by enculturated persons. The idea that nature is 'out there,' separate from humans is a recent addition to a modern worldview. Even during the domestication (house-breaking) of the human species, there is no evidence for this sort of cognitive compartmentalization. "The world can exist as nature only for a

being that does not belong there" (Ingold 2000: 20). Dualism is false: the way to avoid the Cartesian circle is not to enter it in the first place. By eschewing the term nature, we free ourselves of an irrelevant semantic hindrance.

'Land' is perhaps the most basic of useful terms to begin with. It is the "lowest common denominator of the phenomenal world, inherent in every portion of the earth's surface yet directly visible in none" (Ingold 2000: 190). This shapelessness can be demonstrated in phrases such as 'getting to know the lay of the land,' wherein the configuration of a visible yet amorphous quantity is to be learned. Land can be quantified, but not described without recourse to its form.

The difference between land and landscape is one of form and matter. Land is the substance from which landscape is shaped. Both land and landscape exist without human perception. Contrarily, the environment exists only in relation to a perceptive being, and vice versa (Gibson 197: 8; Lewontin 1982: 160). The environment is what surrounds us as and when we *are* in the land. Many of the problems that arise from use of the word environment stem from an unwillingness to properly secure to whom the environment in question is related. Thus, we may speak of damage to the environment caused by off-shore drilling (hoping that listeners understand the assumed subject is all of humanity); or of bad behaviour as a product of a person's environment (in which case the referent is fixed). The problem of referents is compounded when discussing prehistoric people. The introduction of the subfield 'landscape archaeology' has, I feel, furthered the confusion between the terms landscape and environment. Landscape archaeology investigates "how the cultural landscape itself relates to the natural environment" (Wilkinson 2003:4), and can be concerned with both landscapes altered by humans and those that have not. Perhaps the phrase 'environmental archaeology' was shunned due to a pejorative 'green' association. The lack of clarity is compounded by the use of the term 'cultural landscapes' which include "arrangements of features such as field boundaries, artefact scatters...roads, canals..." (Wilkinson 2003: 3). These descriptions are merely functional, describing the initial effect of humans on landscape. Many important elements of the environment are not visible in the landscape: the stories associated with places, ancient feuds, and sacred locations. Environmental archaeology[3] would try to discover where the road goes, why the field's boundary is set here, and would attempt to see the layout from the insider's point of view, rather than from the cartographer's.

The landscape, or terrain, is constantly shifting due to geomorphological or climactic events, and as human persons affect their environment. As people constantly affect their environment, the environment is constantly affecting them. In a sense, neither a person nor their environment can be 'complete' due to constant construction and reconstruction.

[3] Environmental archaeology already exists as a term to describe reconstructions of vegetation, fauna and climate, and how, for example, changing subsistence patterns affected both humans and their surroundings. Landscape archaeology is commonly understood as a subset of environmental archaeology. My understanding of these terms differs, as human-centred and embodied. Instead of focusing on reconstruction of physical aspects of the past, environmental archaeology as I envisage it would entail reconstruction of the human relationship to their landscape. For more discussion of the common understanding, see: Branch *et al.* 2005 *Environmental Archaeology: Theoretical and Practical Approaches*.

Environments are comprised of paths and places. Boundaries between places do not exist, boundaries between spaces do. Often, a place may be partitioned into spaces; note the confusion of the Bedouin traversing a desert when told he is now in a different country. Space is more akin to territory, but without clearly defined boundary lines or markers, a person driving north on an M road is uncertain of the exact moment she enters Scotland.

Wilderness, though meaningful to house-broken, urbanized peoples as an area with minimal recent cultural interference (a place where 'nature can take its course'), has no place in discussion of pre-urban peoples who do not separate themselves from their environments (Ingold 2000: 67). The closest in meaning that our modern conception of 'wilderness' could have for pre-domesticated peoples is simply unknown terrain. To a hunter-gatherer or pastoral nomad, unknown terrain is still part of the environment, just not yet populated with places.

Conceptions of place and the importance of places have been sweeping across recent research in the humanities. (See Casey 1997, 2001 and Malpas 2006 in philosophy; Massey 2005 in geography; Appadurai 1996 in anthropology; and Lippard 1998 in contemporary art criticism) Archaeology, as usual, is late to the game (Forbes 2007; Bradley 2000). Place was the focus of a 2007 conference held at Brown University, from the website:

"There has been a recognizable shift in the academic literature from the structural concept of space towards the more nebulous idea of place. As a post-Enlightenment abstraction of modernity, space is conceived to be objective, measurable, and quantifiable, whereas places are grounded in the human experience of the world; every day practices and the perpetual making of the material world" (Harmanşah: nd).

In this respect, space can be conceived of like the landscape, and place can be conceived of like the environment. Space and landscape are examples of the form in which matter takes, while place and environment are defined by the insertion of a human person. An insight in to how a person understands places can provide much illumination about their conceptualization.

The study of place names and how they inform as to how the world is understood was popular in ethnographic anthropology in the early 20th century (*e.g.* Harrington 1916; Boas 1934; and Lounsbury 1960). More recently, Keith Basso uses his experience in Western Apache reservations to demonstrate how land is a symbolic resource, both to individuals and to the community. When Western Apaches tell stories about an incident at a specific place, they "take steps to constitute it (the place) in relation to themselves" (Basso: 1984: 22). All narrative events are anchored in a physical place that has a descriptive name, or a name that alludes to a historical event. For example "water flows downward on top of a series of flat rocks" or "horse fell down into water." A narrated story is simultaneously about both a place and an event, and usually involves a person who suffers through actions contrary to approved behaviour (35-36). Western Apaches tell these tales to "shoot" each other instead of directly confronting the transgressor, who then is reminded of their bad behaviour each time they pass by the place which "stalks" them.

It is not only the object of study about which much is revealed during investigations into

spatial conception, but also the subject – the one conducting the study. The insistence of some researchers to project modern concerns upon the past is staggering in archaeology.

After the initial publication in 1984, Julian Thomas expanded on the idea of structured deposition and discussed it more thoroughly in his books. In his view, formalized deposition helps to create the identity of a place (1999: 224). Given a transitionally sedentary lifestyle, deposition may have been a way to "fix" a location (1991: 76), to make it feel more permanent. In this understanding of the British Neolithic, the pit and the ditch, both examples of man-altered landscape served to "connote the domestic and the transformational" (1991:77). In the big wild world, man seeks to control his corner of it though the formal deposition of cultural material. There are many assumptions tangled up in these premises. Most obvious is the presumption of a transhumant population. While this might be a valid assumption for a site with no evidence of permanent settlement, it cannot be extrapolated to the many sites of more permanent inhabitation. (Of course, the apodosis may still be true in absence of the protasis, but the logic is invalid). The association of domesticity with permanence is the result of a very modern dichotomy between the domestic and man-made, and the wild and natural. Few pre-agricultural populations have a word for nature (here meaning wilderness), as they do not conceive of themselves as distinct from it.

While introduction of the idea of domestication may not be appropriate, the concepts of power, control and territory are much less complex, and accessible to those within a situation. The transition between mobile and more sedentary lifeways may have been eased through the familiar process of territorial marking. "Hunter-gatherers are territorial and mark their homeland by demonstrating their ownership of or use rights to particular locales such as water sources or sacred places" (Bar-Yosef and Meadow 1995: 50). One interpretation of expressing territoriality by depositing items into the environment is that human persons used this type of act to display their power over the landscape though their ability to change their surroundings (*e.g.* Thomas 1991). The crucial transformation may be that the act of deposition transforms people into agents with the power to alter their environment, rather than the transformation of the environment itself. It may well be that the act of deposition is more important than the deposited items (Thomas 1991: 73), *because* the demonstration of the ability to affect the environment had an important effect on the people performing these acts.

In the creation and abandonment of their own built environment, people sometimes chose to leave meaningful objects in the spaces they were to inhabit or were to leave behind. Certain types of deposits appear to be in relation to the closing or abandonment of a structure. These are seen in both the Neolithic of Britain and the Near East. Examples from the Near East include Çatalhöyük (Russell and Meece 2005); Qermez Dere (Watkins 1999) and Çayönü (Özdoğan 1999). Most discussion of the meaning of closing deposits is tentative at best, focusing instead on identification. Many deposits are identified as relating to the end of a structure's 'life' as they appear to be placed upon an otherwise clean surface, or mixed in with sieved filling material. Watkins suggests that the skulls placed within a post-retrieval pit may have served to "take up occupation of a house whose living inhabitants were finally leaving it" (1990: 343). This may again be relevant to the idea

of territoriality, wherein ancestors protect the claim to use or ownership.

In contrast, foundation deposits are created prior to the construction of a building. They are usually identified when no pit has been dug through a floor layer. Some theorists have contemplated the social necessity of these deposits, as a fundamental or structural requirement for a building (Carter 2007: 353). Mindeleff describes the foundation and construction of a Hopi house (1891: 101): First, the builder goes to the village chief, who collects four eagle feathers. The builder places these at the corners of the proposed dwelling and fixes their location with a large stone. When the house has been constructed, the builder collects four feathers similar to those the chief used, and ties them to the central roof beams of the house. In addition to creating a bridge between the natural and built environments, these initial foundation deposits link the house to the community as a whole (Kovacik 2003: 168). Many ethnographic examples show ritual deposition performed to inform or ask permission of the personified earth for an imminent action. Prior to the excavation for the construction of a house, Bolivian tin miners perform a ritual to give notice to the spirits (Taussig 1980: 216).

One type of deposition found across the site at Çatalhöyük is the caches of obsidian blades found in shallow scoops inside structures and near doors. The interpretation of these bundles has been aided by nearly every possible analytical tool. Mellaart (1963: 103) thought that the caches of obsidian were a form of stored wealth, probably due to the importance he placed on the obsidian trade in the Neolithic. Conolly (2003) focused more upon the context of the caches in seemingly irretrievable locations, and suggested that the bundles served to domesticate the space, by bringing wild rocks from the mountains to the inside of a home. It is interesting to note that these "irretrievable" places are located within built structures, and may even serve as foundation deposits (Carter 2007: 353).

3.3 Relating people to each other

Many theorists believe that some types of structured deposition served to delineate and reinforce the relationship between certain types of people, be they the quick or the dead, the contemporary community or the past inhabitants (Kuijt 2002; Hodder 2006; Kovacik 2003; Richards and Thomas 1984; Tringham 2000). Knowledge of ritual acts, timing, and location could confer status or authority to a select few, while the veneration of ancestors may have been accomplished with their own remains.

In a description of the contents of apparently ritual pits, Richards and Thomas describe the use of special elite items to display status (Richards and Thomas 1984: 192). However, they do not make the distinction between an elite item given to display personal abundance and a symbolically charged item deposited to honor the environment.

Similarly, Ian Kuijt, in the SENEPSE 8 volume, suggests that ritual deposition gave authority to participants who knew the appropriate timing of re-exhumation for secondary burial. It can be extrapolated from this that authority may also have been conferred upon those who knew the location of special depositions, especially if they were not specifically denoted by a marker (2002:

85-7). That knowledge itself can be valued creates a new kind of elite, one with special access to a valuable resource. This assumes that the knowledge is neither communal nor is the special deposit marked in any way. The marking of important buried features is discussed in Goring-Morris (2000: 119), so it is clear that the location of every special buried deposit was not kept secret, though the contents or meaning may have been. Taussig (1999: 5) refers to a 'public secret,' which is something that is both known and never articulated. Even if the contents of a special deposit are not public knowledge, it may have been equally important to demonstrate that there *is* something to be known. Hodder (2006: 196) posits that every aspect of Çatalhöyük seems to be concerned with hiding and revealing; both information and objects. He sets up a dichotomy between secrecy, control, exclusion and privacy and discovery, exposure, inclusion and surprise.

Foundation-related deposition refers to "earlier objects or community actions through specific knowledge of what has been forgotten" (Kovacik 2003: 168). Knowledge of the forgotten does seem to be paradoxical, unless we have a stratified, specialized society with persons responsible for remembering. There is also an assumed time lapse, for few people need to be reminded of events they have witnessed. This then assumes the desire to be reminded of past communities. Why might this be so? Perhaps to teach new generations important behaviours by example, or to self-identify. Just as an old hat may trigger stories of Uncle Bob, family memories or lessons may resurface with the presentation of a catalyzing object. Perhaps related to this idea of referential memory is that of ancestor worship.

In a volume titled *Life in Neolithic Farming Communites*, Kuijt described in detail a particular type of structured deposition, that of skull caches, arguing that "these caches represent the physical expression of very important household-level ritual events organized for the veneration of worshipping ancestors while serving to reaffirm relationships within and between households linked by marriage, political and economic ties" (2000: 149). This focus on the household springs from Kuijt's idea that, during the PPNB, rituals were based on the household as a unit (142). In the absence of evidence other than an assertion, it is not clear why community and individual actions are not taken into consideration as well. The caching of skulls is known across the PPNB, and does seem to be related to the preservation of some kind of memory, most likely that of an ancestor (This issue is still controversial, and many theories have been offered to explain the widespread practice of skull detachment, treatment, and caching. See Watkins 2010 on homoplasticity; Kuijt 1996 on equalizing group members through ritual; Hodder 2006 on the development from representing general to specific ancestors). However, the evidence in favour of any particular type of individual (ancestor, hero, victim) is not particularly strong. The main assumption here is reaffirmation, by placing an ancestor's skull in plain view, she or he is literally "still with us" and her or his relationships still exist.

Rowlands (1993: 146) makes a distinction between inscribed and incorporated practices of creating memory. An inscribed practice is one that leaves a lasting trace, such as the creation of a visible monument or the visible display of a skull. An incorporated practice is the creation of memory through an absence, such as a skull burial. It is interesting to note that skulls are both, and perhaps alternately, buried and displayed in the Near East. Different types of social relations

are propagated by skull burial and display. Skull display is inclusive, the friends and honors of the deceased are conferred upon the surviving family, and outsiders who knew or knew of the deceased are welcomed. On the other hand, burial is exclusive. Specific knowledge or marking is a prerequisite of this knowledge, and no outsiders are welcome to it.

The propagation of social memory in general is an interesting problem that many theorists have attacked. Tringham (2000) has suggested that bodies were deposited (buried) within houses to ensure social memory and its continuation. Fentress and Wickham claim that "preliterate cultures need to devise conceptual receptacles which order and store memory" (1992: 80), though it seems probable that their receptacles could be physical as well. The deposition of a body as a vessel of memory storage is a direct referent to the person or family, while an object such as an eagle feather may act as a symbolic referent. Whether directly or indirectly referential to persons or events, objects cannot ensure social memory without an interpreter, without a person to demonstrate the significance.

One of the most well-published sites in the Near East with clear evidence of ritual deposition is the site of Çatalhöyük. In his discussion of deliberate deposition in building 1 and its later phase 5, Cessford (2007: 543-547) claims that "deliberate artefact deposition is linked primarily to moments of transition" (546) of individual buildings or to a "linkage between creation and destruction" of these buildings (547). In other words, new periods of ownership or rebuilding may be commemorated or sanctified by the deliberate deposition of the artefacts used to bring about the transition. An example of this would be the placement of cattle scapulae used to plaster the structure, or the placement of the axe used to remove a timber feature. The creation, destruction or transformation of a structure is evident to others, but the act of deposition commemorates the human agents themselves and their intervention within their surroundings. This act then relates the humans to themselves, by recording their relationship with a structure.

3.3.1 Gifts and men

A common way of creating or cementing a relationship with another person or group of people is through gift exchange. It must be assumed that such transactions occurred in prehistory to make the following discussion valuable. Again, we must turn to the anthropological literature in hopes of arriving at a conservative analogy. Our first guides will be Mauss' discussion of the Kwakiutl of Vancouver Island, just before the first world war; Malinowski's account of the Trobriand Islanders during the war; and Godelier's recent critical work using the Baruya of New Guinea (1925; 1948; 1999). Both the types of objects involved in exchange and the types of exchange inform about how people relate to each other.

It must first be accepted that gift exchange is entirely disparate from barter or commercial exchange (Gregory: 1982). Giving a gift is a personal, voluntary act which is performed against the backdrop of the community, often with an audience present. According to Mauss, the act of giving a gift entails three obligations: giving, accepting the gift, and later giving again. Two of these obligations fall upon the recipient, who is put into the debt of the giver. As such, gift exchange can be either agonistic, or non-agonistic (Mauss 1925: 6).

The notion of property and ownership in pre-agricultural communities was likely not identical

to our own, and this too separates gift exchange from barter. In a commercial exchange, the object given ceases to have ties to the previous owner; while in a gift exchange, the use of an object is ceded though the giver continues to have a kind of power over the given object (Mauss 1925: 8-10; though see MacCormack 1982). In his attempt to find an answer as to why people seemed obligated to return what they have received, Mauss suggested that this spirit of the gift animated the object itself, while others focused on the power relationship between people (*e.g.* Godelier 1999; Weiner 1992). This spirit, or "immaterial aspect of human social relationships" (Sykes 2005: 74), was the social obligation and power created by reciprocity. The recipient accepts this power and gives again a gift to the giver (Godelier 1999: 44). This relationship is not arithmetic: one gift cannot cancel out a previous gift, but instead furthers the ties between the two participants.

Godelier (13) reminds us that the relationship or rank of the two parties prior to exchange must be considered to understand their relationship after the exchange. In a stratified society, the meaning of a gift and its effect on a relationship is changed if a gift is made to an inferior or a superior. Persons who give more than can be repaid are elevated to a higher rank. The highest ranks are reserved for the supernatural, from which comparatively little gifts are made in hopes of a larger return gift (30).

Mauss separates two kinds of wealth: those objects that can be gifted from those that cannot. This foreshadowed the development of spheres of exchange as an analytical tool in anthropology during the 1960's. The concept was broadened to include a range of competitive exchanges between nearby groups, such as; emulation, imitation, competition and warfare as peer-polity interaction for its introduction to archaeology (Renfrew 1986), and is very similar to the tripartite network theory introduced in anthropology soon after (Turner and Maryanski 1991). The analysis of trading restrictions, taboo, hierarchy, competition as well as the manipulation of social and symbolic resources to control the movement of objects has of yet culminated in Watkins' 2008 study of supra-regional networks. Focusing on the Kwakiutl and the phenomenon of potlatch, Boas demonstrated that certain copper objects must stay within a family group, and though they might be displayed during potlatch, they are never gifted, and sometimes even destroyed (1897: 564, 579). These objects are claimed to have spiritual and symbolic value, and thus are not given away. Weiner (1992) expands upon this by including knowledge and rites among the valuables that must be kept. She claims that it is *necessary* to withhold some goods from the exchanges and labels this keeping-while-giving. Godelier uses this idea as a springboard to claim that some objects are kept so that they can be given, and conversely that some things are given, such as marriageable sisters, so that they can be kept.

Returning to the caches of obsidian blades at Çatalhöyük, Carter (2007) focuses on the act of burial, and draws parallels from nearby sites (Jerf el-Ahmar, Cheikh Hassan, Akarçay tepe, 'Ain Ghazal, and Motza). Carter uses the theme of a reciprocating gift-giving society to structure his argument that these caches of obsidian are related to the withholding which is part of gift-giving (2007: 352). While fascinating, the argument is poorly supported, as it relies on the assumption that the best or most highly-prized percentage is withheld (Godelier 1999: 32 *ff*) and there is no evidence that these particular blades were of better quality than any other found at Çatalhöyük. He also argues that a specific cache also serves to identify the gift givers and their home, on the

basis that this one particular cache was probably flaked from the same core. According to Carter, the deposit then serves a dual purpose of relating people to themselves, and relating people to others.

Similarly, Hermansen (1997: 333) suggests that some items that appear to be intentionally placed were left in lieu of items taken from the dead or from the supernatural powers that own the earth. Hermansen's evidence is the four stone sculptures left behind in a stone retrieval, or stone-robbing pit. The argument is very similar to Mauss' claim that exchange functions to preserve the peace, in that reciprocal exchange serves to prevent conflict with the other world. In a culture revolving around exchange it would be most prudent never only to take, and certainly not from powerful, supernatural entities.

3.4 Relating people to the supernatural

The Neo-Assyrian practice of interring clay figurines representing gods and other mythological creatures in clay boxes under floors has been interpreted through the translation of ritual texts as the culmination of a protective and purifying ritual. Though anachronistic, the meaning attached to these ritually-deposited objects is available, and therefore pertinent to this study. Nakamura (2005) suggests “that the deposition of these assemblages as dedicatory caches mimics the creation of world order and traces out paths of magical agency such that social reality becomes transformed (12).” As human action upon the divine in order to ensure divine protection of the human seems contradictory, so too do the actions associated with this series of rituals. Magical acts transform the clay figurine into the puissance associated with a certain deity, while the figurine is given over to the deity, and sealed within a tomb-like receptacle to preserve its vitality. Power and supplication, death and life combine in a mimesis to create reality.

The 2002 SENEPSE 8 volume about ritual and magic practices in the Near East, though not explicitly concerned with deposition, contains several articles that refer to the problem of meaning of patterned deposition and its relation to supernatural forces.

One example of an article explicitly concerned with structured deposition is the one by Gebel that focuses on depositions of human and animal remains within and between walls at Basta and Baja (2002). He suggests that there were many "magico-ritual practices, all related to the hiding of objects on walls or floors" (2002: 129) and offers many meanings for these practices. His Table 3 (2002: 130) suggests: unconscious territorial marking, protection and preservation, strengthening stability, documenting events, and witnessing events. In addition to his own treatment of these interpretations, many of these ideas are made explicit in other papers in the volume.

For example, Hermansen and Jensen, in their discussion of potential ritual structures at Shaqarat Mazyad, claim that deliberate deposition "served to focus attention" in a particular direction (2002: 100). This can be expanded to include other forms of depositions. They also claim that certain types of structurally-related depositions "emphasize boundary conditions and facilitate control of incursion" (2002: 101). This approach to liminality assumes the other world is accessible, at least at times.

Building further upon this is the idea that the supernatural can be interacted with more casually; it can be bargained with, traded with, appeased, or used maliciously. This sophisticated

relationship presumes a well-defined entity, and code of appropriate behaviours which takes some of the mystery away from supernatural dealings. There is more likely a gradient between general spiritual incursion or attempts to concentrate or define where the inevitable incursion will take place all the way to personal relationships with specific, known entities. Partway between these extremes (perhaps exemplified by mystical Buddhism and Voudun) is the sort of interaction which requires an intermediary to act on behalf of a group. In this way, the relationship of people to the supernatural is neither individual nor collective; nor is it ambiguous or incomprehensible, nor rigidly delineated.

3.4.1 Gifts and the supernatural

The idea of a reciprocal gift economy with the supernatural is entailed in Mauss' Fourth Obligation: that of humans to give presents to the gods and to the spirits of nature and the dead. Mauss believes that the obligation arises from the principle of ownership, and places the "true" ownership of all things in the world in their hands. There is an Eskimo (Inuit) ritual in which shamans wearing masks depicting spirits invite these spirits to the dancing and gift exchange. When the ceremony is over, the shamans announce to the others that the spirits had a great time at their party and will send game animals in return (Mauss 1925: 14). For Mauss, the difference between reciprocal gift exchange with the supernatural and forcing or compelling the gods to give again more than they received is the concept of sacrifice.

The 1964 book by Hubert and Mauss described many forms of sacrifice and, most importantly, differentiated between sacrifice and offerings (11-12). To them, a sacrifice requires a living being; *ergo* artefacts can only be offerings. This departs from Mauss' earlier work on gifts (*Essai sur le don*, 1925), in which he claimed that "sacrificial destruction implies giving something that is to be repaid (14)". While I am inclined to agree that a sacrifice need not be alive, the goal of repayment is not necessary. This is especially true when a world-view entails that humans were created to worship and provide gifts to the gods. It is the unanticipated acts of devotion and sacrifice that sway the favour of supernatural forces. Similarly, the apotropaic properties of a dedicated item do not exist in repayment, but in the transformation of the object itself. Sacrifice changes the nature of what is offered, usually from a living nature to a dead one. As artefacts are inert, they cannot change their nature and thereby become sacred. This is clearly a departure from Mauss' previous, metaphorical conception of sacrifice, wherein the vacuum created by delivering something of less value must be filled with something of greater value. Self-sacrifice does not always entail suicide. Ritual bloodletting in Mesoamerican cultures transformed the elite bloodletters to a sacred personage, whilst legitimizing their political and spiritual power. The sacrifice of dignity, often associated with mourning or rites of passage, temporarily transforms a person to a liminal, semi-sacred being. The concept of self-sacrifice including bloodletting or dignity bridges the two conceptions of sacrifice offered by Mauss at different stages in his life. A living person temporarily gives part of their life-force (blood or respect), changing their own nature to something consecrated, and creating a vacuum that is filled with social legitimization.

Gifts may be given as repayment, or to force repayment. One of the more common types of artefactual gift to the supernatural is a votive offering. Offerings have a subsidiary effect in a

community (Gregory: 1980), both by reducing the pool of valuable goods available to the community, and by creating prestige for the one who dedicates the votive.

Among the Baruya, certain sacred objects, such as *bull-roarers* and *kwainatnie*, are considered gifts from the gods to men, and as such, they cannot be given away by the men who keep them for the gods (Godelier 1999: 122). In this sense, the meaning of these ritual objects helps to define the relationship between the human and supernatural.

3.5 The meaning of objects

Semiotics is the study of signs and their associated meanings, and has been broadened to include nearly every form of communication. The symbol/index/icon triad, an analytical tool created by Peirce, remains central to most anthropological, philosophical and psychological inquiries attempts to understand meaning. This triad describes three relationships between the sign, or stimulus, and the signified, or referent. An icon is the most basic, representative relationship between sign and signified. The icon is an image which has specific properties in common with its referent, usually by appearing similar to its referent. Examples include a diagram, scale model, metaphor or portrait. An index has a factual connection to its object; a weather vane is physically affected by the wind, the smell of food cooking is directly connected to the temperature of the bread and paw prints, though not simultaneous, indicate the presence of an animal. "A sundial or a clock indicates the time of day...A rap on the door is an index...Anything which focuses the attention is an index" (Peirce 1955: 109). A symbol has a constructed meaning that must be learned. It is dependent on social or cultural convention and can appear entirely arbitrary, such as the colors of traffic lights. "Any ordinary word, as 'give,' 'bird,' 'marriage,' is an example of a symbol" (114). The crucial difference between a symbol and signs or indices is that an icon and an index are signs even without an interpreter. Without an interpreter, a symbol is meaningless. Let us use the example of a pair of cheating bridge players using a secret and arbitrary code. An itchy nose without an interpreter who knows the code (bid high) is nothing more than an itchy nose. An object may relate to its referents in more than one way, acting as icon, index and symbol simultaneously. Peirce gives the example of a photograph: it is an icon as it resembles its referent, it is an index as the result of its optical connection to reality, and it can be symbolic of the subject matter to which it is attached (*e.g.* a photo with a news article).

A fetish is a material object exalted as “genius” (Hegel 1956: 991), an “object believed to bring good luck to its owner” (Ubelaker and Wedel 1975: 449), an experienced construction set up in place of something else (Hodge 1907), or a thing in which a potent spirit resides, or in which it is embodied (Patt 1997: 69). There are several recurrent themes that these variant definitions include. The essential characteristic of a fetish is materiality. “The truth of the fetish resides in its status as a material embodiment; its truth is not that of the idol, for the idol's truth lies in its relation of iconic resemblance to some immaterial model or entity” (Pietz: 1985: 3). A fetish does not represent, it is.

A second characteristic of a fetish is power. “The fetish has an ordering power derived from its status as the fixation or inscription of a unique originating event that has brought together

previously heterogeneous components appropriated into a novel identity" (Pietz 1985: 3). Both physical features and immaterial desires may be fixed in the fetish, "whose power is precisely the power to repeat its originating act of forging an identity of articulated relations between certain otherwise heterogeneous things" (Pietz 1985: 3-4). Patt (1997) distinguishes between the psychological and anthropological uses of 'fetish' by showing that mystification is 'attached' to the object according to psychological approaches, while the potency or power is intrinsic to the object in anthropological discussions of fetish (69). The changing direction of power shows that human agency, 'giving' the power to the object, is important in psychological consideration of fetish, which anthropologists focus on the effect of the fetish on the person.

Other attributes of fetishes are mentioned by various researchers, though without the universal agreement that power and materiality have. Objects that reinforce social value or personal individuality are sometimes considered fetishes, as are objects that are small enough to be worn.

Ethnographic studies of fetish began in conjunction with West African peoples, but reached its current apogee in mid-century discussion of native peoples of the American continents. Along the Missouri River, there is evidence for bird bones "purposefully and selectively modified by..." Amerindians (Ubelaker and Wedel 1975: 444). These bones are dried and bundled and worn as a personal fetish or hung from the rafters of a tipi as a sacred bundle. Stanislawski (1973: 379) points to the importance of the mobility of fetishes in semi-nomadic communities. Wissler (1912: 65) demonstrates that the bundle or object can precede the ritual for its veneration. Once an object is recognized as fetish, or when a newly arrived group brings a fetish, the established community expects the creation of a new ritual to bolster their spiritual power. In this case, the object precedes the act. The power of the fetish is such that its presence creates new rituals. Eggan (1966) described how each sub-clan has fetishes to feed and maintain, and that lesser clans may leave the village in search of prosperity, returning a few times a year for the feeding and maintenance of the clan fetish. If a clan moves further afield, another person is invited to move into the hut that houses their fetish(es) and adopt him/herself into the clan as fetish caretaker. This shows how the power "over the desires, actions, health and self-identity" (Pietz 1985:6) of the object is not diminished by distance.

As the idea of the fetish was derived from Portuguese sailors encountering a foreign cultural practice for the first time, we must consider how the term arose in order to assess its applicability. Fetish "remains specific to the problematic of the social value of material objects as revealed by situations formed by the encounter of radically heterogeneous social systems" (Pietz 1985: 3). The use of the term fetish should then be restricted to this sort of situation or new encounter. We as archaeologists are not encountering a previously unknown social system; merely rummaging through durable remnants of a very old one. Without informants to show the appropriate behaviours around objects, it is difficult to pursue the theme of fetish.

The sacred fetish bundles of the Amerindians cannot be considered as icons, for they do not clearly resemble anything. These bundles are certainly indices, as they have a direct, physical connection to the animals and plants from which they are made. The most important relation of object to meaning is that of symbol. There is an emotionally- and spiritually-charged meaning that

is inaccessible to outsiders. Objects with symbolic meaning are more likely to be used in ritual, and therefore more likely to be deposited as a sacred collection, rather than simply discarded. Through the patterns of object discard across a site, fetishistic and symbolic meanings may be inferred.

3.6 An oversight: animals

One conspicuous omission in these considerations is the relationship of animals as a part of the outside world. Humans interact with animals in many ways "beyond protein and calories" (Russell 2012). Animals may be seen as pets or pests, subjects of art or objects of sacrifice. Some animals function as symbols, totems, or tokens of wealth. They may be hunted, herded, domesticated or shunned by taboo.

The relationships that farmers, herders and foragers would have had with animals must have been very different from each other. Foragers may have seen themselves as very similar to animals, engaged in similar activities and therefore analogous or easily represented by metaphor (Tapper 1988). Herders may have seen themselves as caretakers, parental, with no economic or social desire to eat their own flocks. Farmers would have had different interactions with those animals in closest proximity than with those rarely encountered. As familiarity increased, edibility decreased (see Leach 1964: 36 *ff* for a discussion of distance from the ego). These relationships are made explicit through animal representations and animal remains.

The majority of animal remains found onsite tend to be in a midden context. Larger heaps may signify large-scale butchery waste, but consumption cannot account for all remains. Interpretation based on body-part distribution or spatial patterning by species help the archaeologist determine the relationship between particular animal remains and the humans with whom they interacted. Some skeletons may have belonged to pets, sacrificed animals or interred as part of a ritual. Certain skeletal elements may have been brought from offsite as trophies or attached to furs. The archaeological indications of these practices may vary, but pets tend not to be eaten, and perhaps even buried. As sacrificial animals are often eaten, the presence or absence of butchery cuts cannot always assist in distinguishing between sacrificial and mundane consumption.

Totemism is most commonly defined as when various species of animals represent clans or groups of humans. We should expect the remains of the totem animal in greatest concentration around the areas or structures associated with those groups. Representations of the totem animal and deposits of the totem animal's bones within or on structures can also be archaeological indications of totemism. There are often taboos associated with eating the totem animal, so no butchery marks would be expected on bones, if bones were present at all, but this does not always hold true. These totemic animals are seen as similar to humans, or possessing coveted attributes such as power, cunning or grace. Totem animals are thus easily integrated into ritual activity. A recent survey among the indigenous populations of Cameroon showed that belief in a human-gorilla totemic relationship was still very strong. Over 4/5 of responders (out of several hundred) agreed that gorillas were personal counterparts, or spiritual assistants to people in their village. As such, these people did not hunt or eat their totems, for fear that the human counterpart would

also die. This did not preclude gorilla remains from the village, as some scavenged bones are used in traditional medicines (Etiendem *et al.* 2011).

A taboo is a prohibition. With respect to animals, a taboo is a prohibition on killing, consumption of or contact with certain animals or parts of animals. The taboo may be gender-restricted or situationally-dependant. For example, in many groups in Sub-Saharan Africa, menstruating women are not allowed to eat meat, extract clay or handle certain tools (see Gausset 2002). The presence of a taboo does not necessitate the absence of the tabooed animal's remains on site, even in the case of a total taboo. The Nukak of the Amazon have a very strict taboo on the hunting or consumption of both deer and jaguar, yet the humeri of jaguar and the tibiae of deer are scavenged from the forest to make flutes (Politis and Saunders 2002). "Therefore, small numbers of limited body parts used as artefacts or found in special contexts may signal a tabooed and ideologically important animal..." (Russell 2012: 39).

Many animals - not just those that are tabooed - are shown respect. "A central attitude in the conduct of hunting is that game animals are persons and must be respected" (Tanner 1979: 130). Respect is shown by removing the corpse from polluting factors such as proximity to dogs or women, or by special treatment. The respectful treatment of hunted animals shows the animal spirit that the hunter is worthy of being successful again.

Hunting trophies are brought back to the site and publicly displayed. As such, it is easy to confuse a trophy with an element displayed out of respect. A trophy is often displayed in the house of the hunter, or in the men's house, if one exists. Preferred elements to display include mandibles, skulls, horns and paws.

Animal remains are often used as ritual paraphernalia or as amulets. Many Amerindian tribes, including the Missouri River clans, use bundles of animal bones as protective fetishes. The North American Cree wear charms including animal parts to harness the power of and show respect to the animal (Tanner: 1979: 140). The well-known analogue of a lucky rabbit's foot is no exception. Modern-day Mongolian truckers attach wolf astralagi to their key chains for luck. This practice is derived from the protective wolf-bone amulets worn by Mongolian children (Birtalan 2003). Amulets are most often recognized in the archaeological record through their inclusion with burials, as they are interred with the bearer. Claws and teeth are easily drilled for pendants, and make excellent amulets. Pierced raptor claws have been found in burials at Spong Hill (Bond and Worley 2006: 97); perforated mammoth teeth are found all over Northern Europe throughout the Mesolithic and Neolithic (Janzon 1974, Jaanitz 1957); drilled red deer teeth at Çatalhöyük (Russell 2005: 355); and a perforated wolf tooth in a Toqua infant burial in Tennessee (Bogan 1983: 319). Bear and wolf paws in leather bags are referred to as 'medicine bundles' and have been recovered from Amerindian sites across North America. Mollusc remains, often overlooked by archaeozoologists, are often perforated and may have been worn as protective amulets.

Animal remains may also be worn as costumes or masks for ritual or teaching purposes. Pig's teeth are used in Bali for ceremonial mask construction, as are peacock feathers in Java and Cambodia (Brunet and Leyenaar 1982). Construction of masks used in ritual only occurs on auspicious days. When not in use, the masks are kept hidden from the impure or the uninitiated. Those who wear the masks are said to enter into a consecrated relationship with the supernatural;

"to mask oneself is to give life to a superior being" (Brunet 1982: 68). The historian Lucian describes a Syrian religious practice: "When a man goes as a worshipper for the first time to Hieropolis, he cuts his hair, then he sacrifices a lamb, he kneels down and puts the animal's head and feet on his own head, and prays to the god to accept his sacrifice" (Lucian: *De Dea Syra*). This may be interpreted as an act of contrition, or as a continuation of a practice known from Cretan worship. There are many representations of priests wearing bull-masks, or possibly bucrania from Aya Irini (Karageorghis 1971: 262).

Some masks eschew the use of animal remains and instead directly create the image of the animal involved. In South America, the piranha and wild pig images are worn by masked dancers to teach the origin story (Brunet: 1982). Other dances, such as the antelope dance, symbolically 'kill' the masked dancer to ensure hunting success. Masked dancers take on the attributes of the animal they represent, changing their gesture, walk and vocalizations. "Imitation in the miming animal-dance is therefore a highly religious ritual act of self-surrender to some external being" (Warburg 1939:282). The *nyau yolemba* of the Chewa tribes of south and central Africa is a woven cage worn about the body of a dancer in the shape of some animal. This zoomorphic basket structure is said to house the animal spirit, and the dancers themselves believe they are possessed by "spirits of the animals whose masks they wear" (Yoshida 1993:35).

Another common element used in ritual masks and costumes are bird wings. From central Asia, Altai and Khakas shamanistic costumes have wings that hang from the chest plate (Kılıç 2010). The dancers of the Ainos crane dance also wore feathers and kept tame owls (St. John 1873). Costumes of bird feathers and wings are also found in prehistoric burials. In a middle Neolithic burial at Zvejnieki (modern Latvia) a man was buried with at least 17 wing bones of the jay (Zagorskis 2004) extending from around his shoulders down to his knees. The 38 carpometacarpi are those bones that bear the primary, deep, rich blue feathers of the jay (Mannermaa 2006), and were possibly part of a whole-body costume for ritual dances. Another adult male, buried in Ajvide (modern Sweden) was interred with 7 wing bones from a red-throated diver near his right hand (Mannermaa 2007), possibly a wing-sleeve. The symbolic role of birds, especially those that fly in the air and dive in the water are central to some tripartite cosmologies.

Yet another way animals may be "worn" is though tattooing. Among the modern Khanty population of Siberia, it is believed that bird tattoos, usually on the shoulder, will serve to protect the bearer; both in life and during their journey to the underworld (Chernetsov 1963; Loze 1983). Both decorative and therapeutic tattoos are known from Ancient Peru. Ornamental tattoos on the hands and arms of a mummified female depicted reptiles, apes and birds; while circular, hidden tattoos of probable therapeutic value were made of very different material, and placed corresponding to acupuncture points known from Chinese medicine (Pabst *et al.* 2010). Beautiful mythical creatures were tattooed all over the arms and torso of a Scythian prince (Dorfer *et al*. 1999). This shows even the image of an animal can bear witness to the permanence of meaning.

Both the representation of animals and their remains can shed light on one of the more interesting aspects of human-animal relations: the transition to herding and domestication of wild animals. Common indications that an animal has been affected by interactions with humans include: the presence of animals outside their wild range, demographic change in age ratio or sex

ratio from what is found in wild populations, or pathologies associated with cramped conditions. Morphological changes such as size diminution or shorter snouts and molars indicate that domestication has already occurred. Similarly, representations of animals being shorn, milked or ridden refer to past domestication.

The decision to separate the human relationship with animals from discussion of environment or other humans was taken to point out a difficulty in modern anthropological thought: How *should* animals be categorized? Are they more akin to humans, so easily anthropomorphized? Are they rather a part of the external wilderness? The relation of animals to the supernatural must also be considered.

Many supernatural entities are given the shape of animals, and there is more evidence for early depictions of animal than of human forms. Many myths involve people becoming supernatural through the more-easily-harnessed animal spirits. Animals are seen as vessels, or liminal points of incursion, having both human and otherworldly characteristics. All of these problems indicate that more discussion is necessary to understand the meaning of animal objects and symbols in relation to ritual deposition.

3.7 Discussion

The section on meaning began with Peirce, both because of the wide-spread use of his theories in modern archaeology, and also because his pragmatic approach avoided the problems of Cartesian dualism which later reappeared as a kind of structuralism. The 'either-or' approach favored by structuralists such as Lévi-Strauss ignored the multiple possibilities available to archaeological description, *e.g.* The bone is not inside or outside, but through the wall. The tripartite, rather than dualistic, theory of meaning freed archeologists from forcing multiple prongs into a two-socket plug.

In 1949, Burks pointed out that the properties of icons, indices and symbols often overlap, and that their combination could add a new level of understanding to the meaning of objects in context. Thus the phrase, 'indexical symbol,' was coined, bridging the gap between symbols, artefacts and signs. Tambiah (1979) emphasized the semantic and pragmatic qualities of indexical symbols in his treatment on the performative aspects of ritual. Indexical symbols are functioning objects that both *express* and *do* simultaneously. These items have both an evidentiary function – the index points to the act of deposition, and an explicatory function – the symbol as culturally constructed.

The philosopher Robert Neville's pragmatic theory of religious symbolism uses Peirce's categories to aid his interpretation of religion in modern society. Neville's focus on what symbols do allows for a further dismissal of dualism; instead of symbols existing 'in the mind,' they engage directly with reality (1996: 33). Similarly, the imaginative capability of humans is a synthetic activity through which we engage our environment (59). In one respect does Neville fall victim to the very dualism he wishes to separate himself from: in his discussion of the intended referents of religious symbols, he claims that the boundary conditions between the finite and the infinite are engaged by these symbols, that religious symbols refer "…to things having to do with the very

worldliness of the world, thus referring always jointly to the finite border and to the infinite within which the border is constituted" (1996: 11). In cultic contexts, the meaning of a symbol relies both on this contrast, or border, as well as on the everyday practical life of the group.

In contrast to Neville's pragmatic approach to symbols, Hodder (2006) focuses on the materiality of objects and their entanglements. The very basic tenet is that people and things create each other, and neither can exist without the other (2005: 20). This position is important to archaeology as an attempt to explain the processes of domestication and sedentism as a result of the increasing complexity of relationships between people and things. In an attempt to include as many approaches as possible, Hodder devalues his theory as a kind of "Dear Liza" grocery list (Mithen: 2006) in which the meaning of any object cannot be determined without recourse to such context as would be impossible to produce from the archaeological record.

While entanglement can be a useful theory for the *longue duree*, the *combinatorio ad absurdum* does not help uncover the meaning of an object as it is used in a ritual act. Shultz (2012) widens Hodder's aperture from materiality to include spiritual entanglement. While the dimensions are broadened, the basic issue remains the same: a succinct analysis of meaning is impossible.

Philosophical and biological theories of complexity may be called upon to bridge the gap between the process of entanglement and the creation of meaning, particularly with respect to the idea of emergence. According to Philip Clayton, "Emergence is the view that new and unpredictable phenomena are naturally produced by interactions in nature; that these new structures, organisms, and ideas are not reducible to the sub-systems on which they depend; and that the newly evolved realities in turn exercise a causal influence on the parts out of which they arose" (2004: vi).

Meanings, as they are not static, can be emergent. Emergence theory goes beyond entanglement to allow for the creation of something new. Just as an emergent behaviour arises through interconnected simple agents, the meaning of a symbol grows through the interactions of simpler levels below it. Categorical novelties emerge with each new ontological level (Hartmann 1953: 74-5). These emergent creations are termed *categorical nova*, and depend on the previous categories without being entailed by them

An emergent theory of symbols allows for the relationship of people to animals, environments, other people and to the supernatural to be considered without a necessary divide between them, eschewing the need for the question: where do animals fit in? The symbol transcends the previous categories (i.e. environment, supernatural) and is created as a *categorical novum*.

The Andean Yanahuayas use structured deposition in many of their rituals, which simultaneously relates them to their environment, to each other, and to the supernatural. The Aymara-speaking Yanahuayas see themselves *as* the mountain on which they live, and use their bodies to understand their environment. Their worldview is a complex metaphor of identity (Bastien 1978: 193-197). Their many rituals include an emphasis on individual household members as they relate to the solidarity of the village (140); rituals to reaffirm kinship and fertility;

and "feeding" the mountain (43), by depositing llama fetuses and coca leaves into lakes, hats and shrines. During an ancestor ritual, the elder says, "Ancestors, this is a meal of coca and cheese for you to eat. Do not be angry when we feed the other places. Let them eat also..." (140). This exhortation shows how the Yanahuayas identify the ancestors with the mountain, and present it/them with offerings. At the same time, they ask for understanding as though the mountain has taken on the human characteristics of the ancestors. This is not due to anthropomorphization, but rather the conceptual framework that the mountain and the ancestors are the same. When people are born, they come from the mountain, and return when they die. This conception of humanity emerges from the entanglement of the environment with the very people who create it.

3.8 Conclusions

A common problem in research is the conflation of the meaning of objects with the meaning of acts. It has been shown that a ritual act is a behaviour and that a symbol is a cognitive referent; neither of which are directly observable in the archaeological record. Ascribing ritual or symbolic properties to objects is thus a dangerous business, but necessary in the interpretation of structured deposition. This chapter has examined several ways in which the acts and objects of structured deposition have been interpreted. In general, archaeologists have fallen victim to the desire to over-simplify (deposition exists so that one person or group is set apart through the authority of knowledge; deposition serves to entrench a wandering population in their environment) or over-complicate (everything is related and must be taken into consideration).

There is, as yet, no known word for nature in modern hunter-gatherer populations, and likely no such distinction between the cultural and the natural in early prehistory. Perhaps all we can glean from the origin of this distinction is also the beginnings of alienation separating people from each other. People and their actions depend on the physical environment, and “dependence entails dependency because things depend on people and other things” (Hodder 2011: 178). An example of this entanglement is provided by a description of Khanty ritual. Wooden dolls representing local spirits are created from trees, and when their maker dies, they are buried at the base of the tree from which their replacements are hewn. “Natural features of the landscape are singled out for special veneration and physically transformed through the creation or deposition of material artefacts” (Jordan 2003: 275). Just as the Khanty rely upon the environment for the creation of these objects, the environment cannot exist without the Khanty to populate the trees and rivers with spirits and offerings. The sum of these entangled relationships between the supernatural, the animals and the landscape produces a new, emergent, meaning. It is not simply that “…key geographic locations derive meanings from the artefacts placed there, and those artefacts gain symbolism from the places they are in” (279), but that the meanings and the symbolism are parts of a greater whole.

As meaning is grounded in context, we must agree upon a set of conditions relevant to different types of meaning. In order to attempt to understand the relationship between past peoples and the environment or animals, we must know if those peoples pursued a foraging or herding lifestyle. To understand any relationship with nature, we must know if they were sedentary or cultivating. To understand their relationships with each other, we must make

population estimates and study settlement planning. This is the basic context required of any attempt to reconstruct any of the entangled factors that produce emergence.

In conclusion, due to the many and varied types of depositions which exhibit formal patterning, there are at least as many theories as to what the structuring means. It seems reasonable to suggest that there is no single underlying meaning for them all, and that different contexts of structured depositions refer to different meanings. In order to sift through the possibilities, as much context as possible must be fixed. In the following chapter, I will provide some background for understanding the major issues in Near Eastern Archaeology in order to set the wider context of this study.

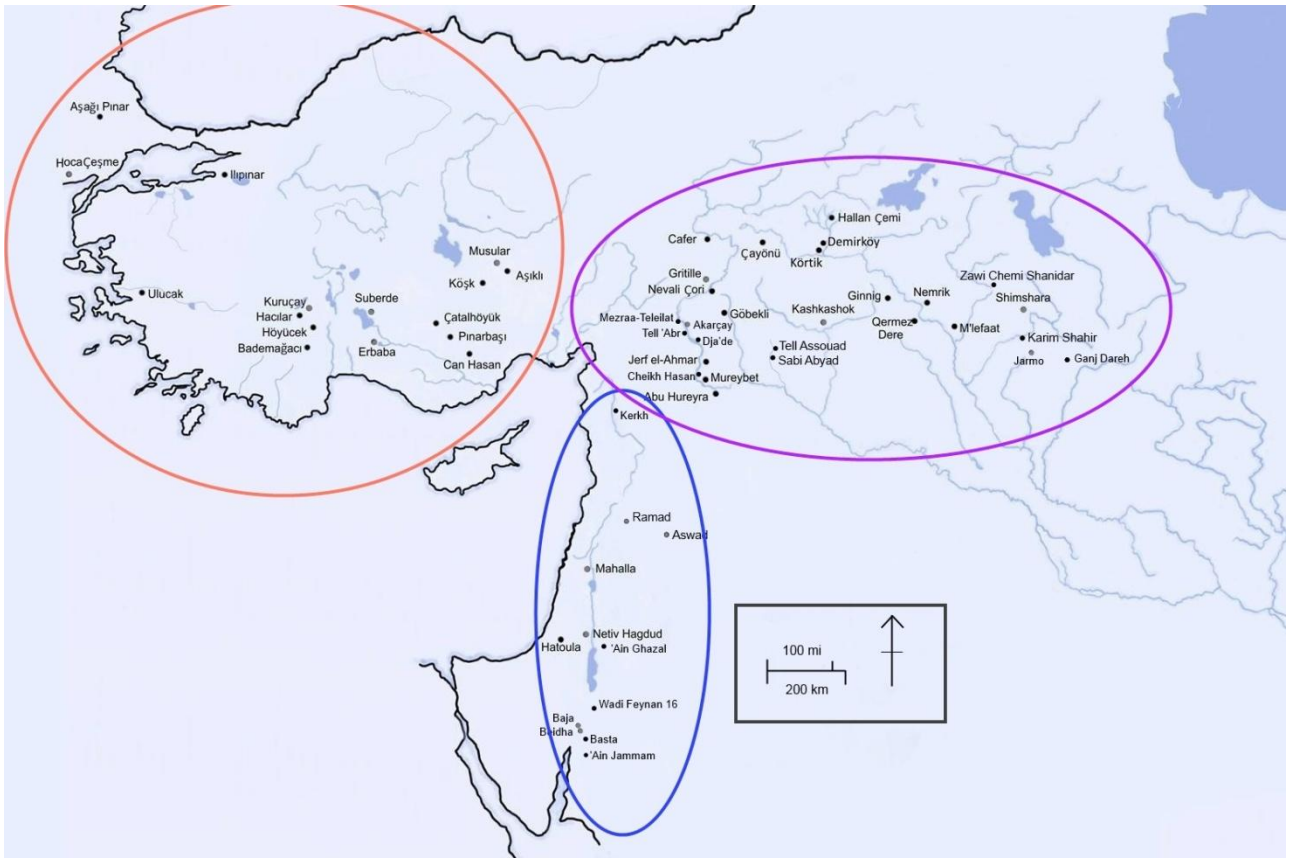

Figure 4.0: Three major regions included in this study. The Levant (blue), Upper Mesopotamia (purple) and Anatolia (organge). Sites that are discussed are marked in black, while sites included to show distribution are marked in gray.

Chapter 4: The Neolithic in the Near East

4.1 Introduction

In this chapter, I will provide a broader picture of the issues that help define the intellectual space into which my study fits. Through a critical review of the major lines of inquiry concerning the Neolithic of the Near East, I can flag the issues that my study can address. Archaeologists have long focused on the origins of agriculture, herding behaviours and a sedentary lifestyle as the most important problems in Neolithic studies (Flannery 1972; Bender 1975; Childe 1981; Hayden 1992; Bar-Yosef and Meadow 1995; Zeder 1999). More recent investigations have considered the evolution of agency, technological and symbolic specialization or household economies as superlative (Boyd 2004; Watkins 2004; Goring-Morris 2005). It is important to discuss these aspects of the Near Eastern Neolithic at this point in the thesis, as it will allow for reflection in later chapters.

To do this, I will first discuss the varied geographical (4.2) and palaeoclimactic (4.3) situations of the sites involved in the study, and then the concerns of modern dating methods; attempting to place each site within a time scheme (4.4). The sites I have chosen to include are all representative of their region, well-excavated and have evidence of ritual depositions. These issues are important to an analysis of ritual activity, as possible relations between types of structured depositions and terrain, climate or timing can be investigated. Similarly, the habitation practices, settlement organization and presence or absence of communal buildings (4.5) can inform as to how the built environment may have affected decisions about ritual activity. Finally, a discussion of human relationships with animals (4.6) and mortuary practices (4.7) show how these ritual acts may have been conceived at the individual level of practice. Each of these topics is necessary for an understanding of the conditions under which specialized ritual activity blossomed during the PPN of the Near East.

Once the greater context of the investigation has been set, it will also be necessary to discuss one very obvious form of structured deposition and the reasons for its omission from this study: burials and grave goods. Burials are one aspect of structured deposition that is clearly able to reflect upon these larger issues, so the decision not to include them in this study must be discussed.

The chapter will conclude with a more detailed description of the context of the key sites from which many examples have come. By identifying the salient issues in early Neolithic archaeology and the discursive spaces into which they fit, and then by describing the specific contexts of the major sites in the study, I will be able to return to the bigger questions about early Neolithic ritual pertinent to this study.

4.2 Geography

This section considers the diversity of environments in which evidence for early ritual activity was uncovered. The geographical variables of each site are crucial to this inquiry as local resources vary with ecotones. The elevation, proximity to water and aridity determine which flora, fauna and building materials are available. As a contextual approach needs to take into account as

many conditions as possible, it is fruitless to continue without first fixing the physical location of the sites in question. Following a general introduction, I will first divide the study area into smaller, more homogeneous subsections. I will describe the geographical environments of the Fertile Crescent: the Levant, Upper Mesopotamia, and its Eastern wing; and then Anatolia during the Neolithic period. The most salient geographical features to an understanding of ritual activity are the immediate terrain and access to resources such as water, stone and other nearby environments. The focus of these descriptions is to provide a general overview. Details such as site elevations and approximate sizes can be found in Appendix 1.

The early Neolithic in the Near East is concentrated in a swath of sites in an area with the wild progenitors of many of the earliest plant and animal domesticates, known as the Fertile Crescent (Fig 4.1). Initial investigations concentrated on the Levantine, or western, wing; due to a combination of biblical interest and political accessibility of the region. The Eastern wing, along the western Zagros Mountains and down to the Persian Gulf was more the focus of antiquarian forays to reveal the monumental architecture of the Bronze Age to the south until the Braidwoods directed attention north during the 1960's. More recently, archaeological investigations have focused on the northernmost area of the Fertile Crescent known as Upper Mesopotamia, where the greatest concentration of wild progenitors is now known (Hauptmann: 1999).

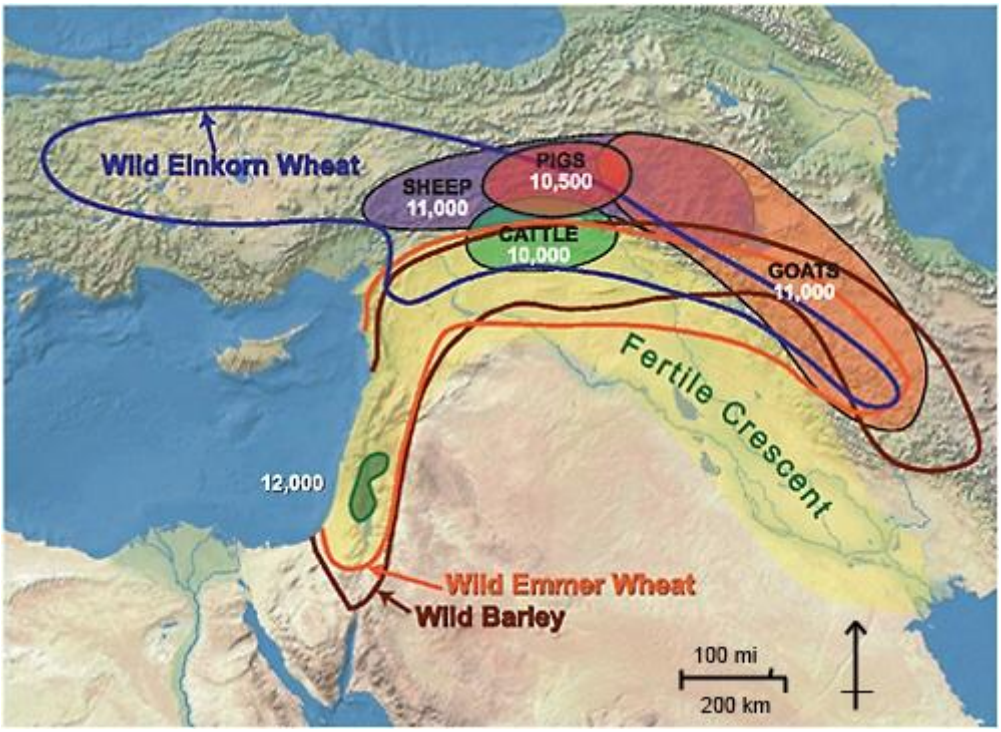

Figure 4.1: Approximate areas of domestication of pig, cattle, sheep, and goats with dates of initial domestication in calibrated years uncal b.p. [after Zeder (2008)]. Lines enclose the wild ranges of cereals [after Smith, (1995)].

The Fertile Crescent can be divided into three main areas due to cultural and geographic similarities: Upper Mesopotamia; the western wing along the Levant; and the eastern wing along the Zagros Mountains and extending to the mouth of the Persian Gulf. In addition to the Fertile Crescent area, much of southern and central Anatolia has been shown to be crucial areas in the early spread of farming, herding, and sedentary lifeways.

Upper Mesopotamia

Upper Mesopotamia is the name given to the northernmost part of the Fertile Crescent, known in Arabic as Al-Jazirah in its southern part, which incorporates parts of modern Turkey, Iraq, and Syria. Upper Mesopotamia includes the extent of the Tigris and Euphrates River Basin roughly north of the 35th parallel up to the Taurus Mountains in Anatolia. This large area encompasses the Habur and Zab Rivers, as well as the Jebel Sinjar, and the many plateaux along the southern border of modern Turkey.

The piedmont region of the Fertile Crescent, where Braidwood expected 'Neolithization' to have begun, includes the foothills and intermontane valleys of Upper Mesopotamia (Braidwood and Howe 1960). More recently, Upper Mesopotamia has been re-centred to the Taurus piedmont (Hauptmann 1999: 65). On the basis of geomorphological attributes, Hauptmann divided Upper Mesopotamia into five subregions (Fig. 4.2). Though the categorization is helpful, it is incomplete and at times, confusing. I will discuss the Upper Mesopotamian sites largely according to the Hauptmann divisions, though I will offer changes to the categorization that take into account publications since 1999.

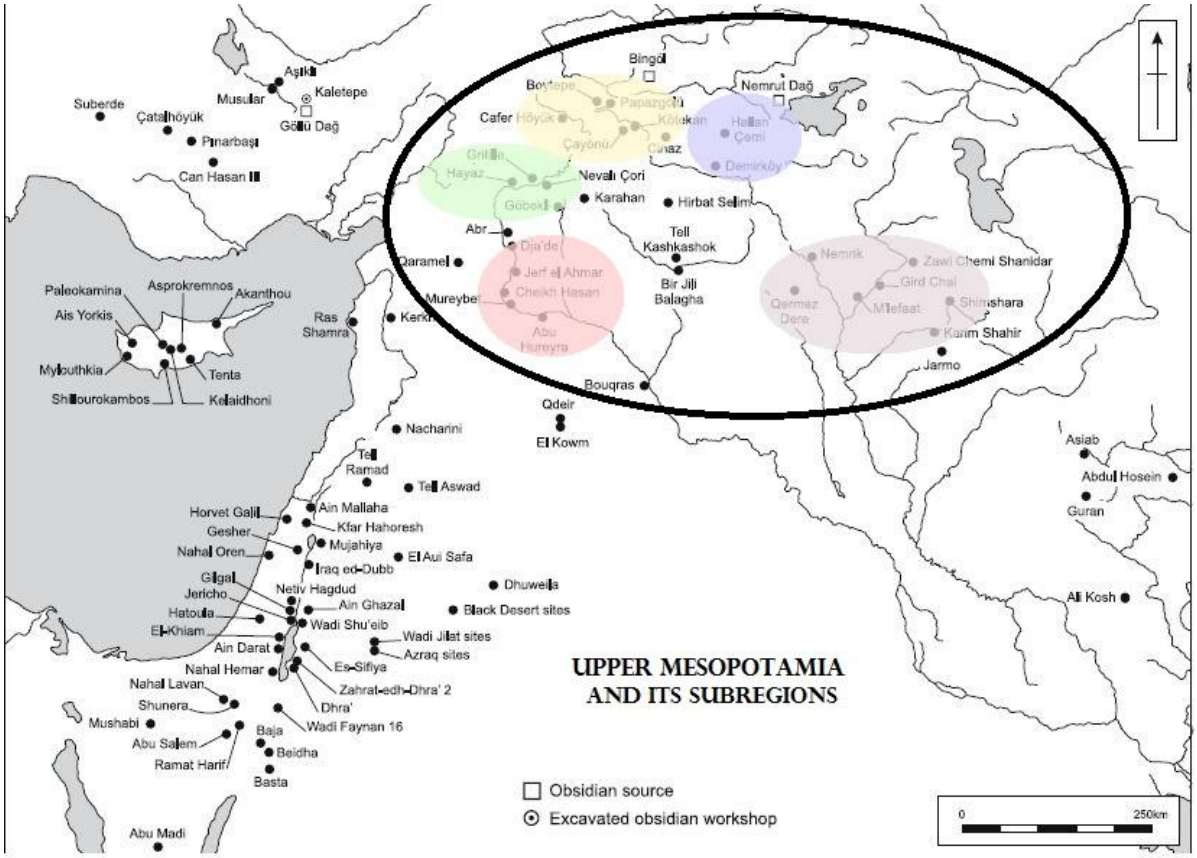

Figure 4.2: Adapted from Asouti 2006, Figure 1. The subregions I have used are colour-coded. Pink-middle Euphrates. Green-Urfa. Yellow-North Euphrates/Taurus. Blue-Batman. Purple-western Zagros and Mesopotamian Plains.

The *Middle Euphrates subregion* includes the sites of Mureybet and Abu Hureyra. The earlier settlements at these sites are generally considered Levantine in character, due to the typotechnological similarity of the bone industry, ground stone tools, jewelry and lithic assemblages (Bar-Yosef and Belfer-Cohen 1989; Cauvin 1977). In addition, the oak and terebinth

woods common to the Galilee-Judean Hills where many Natufian settlements were located stretched up to the Midde Euphrates (Baruch and Bottema 1991, Hillman 1996). Mureybet is on the left bank of the Euphrates, near a modern ferry crossing. The site is on a gravel terrace rising gently from the River within a 2.5 km floodplain sloping up to the east to the Jazirah Plateau (Moore 1978: 119). Abu Hureyra is on the other bank of the Euphrates about 36 kilometres downstream of Mureybet. Abu Hureyra is situated on a river terrace which breaks the line of the steep cliffs flanking the valley and projects into the flood-plain (Moore 1978: 163).

Just 20 km north along the Euphrates from Mureybet and Abu Hureyra is the small site of Cheikh Hasan. 30 km north of Cheik Hassan is the site of Jerf el-Ahmar, on the east bank of Euphrates near chalk hills (Cauvin and Molist 1991). 30 km to the north, on a promontory of the east bank, is the site of Dja'de (Coqueugniot 1994). Roughly opposite Jerf el-Ahmar on the west bank, though in a side valley about 5 km west of the Euphrates, is the site of Haloula (Molist *et al.* 1995). Tell 'Abr, located about 10 km north of Dja'de, at the western end of the Syrian Jazirah, on the right bank of the Euphrates, about 15 km from the modern Turkish border. The nearest basalt outcrops to these sites is about 30 km northeast of Dja'de and Tell 'Abr, from which much of the raw material comes (Yartah 2004). Two more recently investigated sites are Akarçay tepe and Mezraa-Teleilat, both just to the north of Tell 'Abr. All of these sites had easy access to the waters and environments near the Euphrates.

The *Western Zagros subregion* includes the sites of Nemrik 9 and M'lefaat in the rolling piedmont, as well as Zawi Chemi Shanidar, Tell Shimshara, and Karim Shahir at higher elevations in the hills. This group is comprised of sites in both the rolling piedmont of the embayments as well as the adjacent fold-thrust belt to the west of the High Zagros. I appreciate that this is a hybrid grouping of piedmont and montane sites in different environmental zones, but the interrelatedness of the sites in these areas coupled with political turmoil leading to a hiatus in research prohibiting further investigation mitigates their combination. Those sites in the Iraqi Jazirah are at low altitudes, but nestled within the piedmont region with easy access to higher altitudes. The similarity of cultural materials forces the inclusion of Qermez Dere, even though it is situated on the Sinjar Range, south of the Anatolian Taurus, rather than near a major river.

Qermez Dere lies 50 km west of modern Mosul, on the ecotonal junction of the Iraqi Jazirah and the foothills of the Jebel Sinjar, on the edge of a deep wadi in the sinjar. The site may not have been very well-watered, but there was access to steppe forest higher up on the Jebel Sinjar and some riverine forest along the wadi banks (Watkins and Baird 1987; Watkins *et al.* 1989).

The Zagros site of Zawi Chemi Shanidar is located in the northwest end of a wide valley near the confluence of the Greater Zab River and the Rowanduz River. The site is on the valley floor, 16 m above and 100 m from the Greater Zab. As such, in habitants has access to grassy, mountainous and forested environments. The village has no noticeable mound, lying on virgin soil at the foot of the Baradost Dagh, which reaches 2073 m. An hour's walk away is the Shanidar Cave, which may also have served the same population (Solecki 1952, 1955, 1957).

Karim Shahir is located on an open terrace of the Zab River just inside the Zagros foothills, about 150 km southeast of Shanidar, and 2 km from Jarmo. The site is on the boundary between steppic and woodland environments and a few dozen meters from what once was likely a perennial stream (Braidwood and Howe 1960; Howe 1983).

M'lefaat is located 35 km east of modern Mosul, just inside the Northern Piedmont zone and flanked by two small valleys. Although M'lefaat lies at an altitude of 290 m, just 55 km to the north peaks of the Zagros reach 1600 m. M'lefaat is within walking distance of several different ecological zones, facilitating the exploitation of a broad range of resources (Kozłowski 1998; Kozłowski *et al.* 1991).

Nemrik 9 lies 50 km northwest of Mosul, between foothills and plains in the Tigris River valley. The site was extremely well-watered on a river terrace and between two wadis, about 70 km from water level. Nemrik is within walking range of an open moist steppe, open forests higher up the mountain, and riverine forests near the Tigris (Kozłowski 1994; Kozłowski 1998; Kozłowski *et al.* 1991).

The *Urfa subregion* is composed of those sites on the Urfa, Gaziantep and Mardin Plateaus. This area connects the Syro-Mesopotamian lowlands with the Anatolian highlands (Hauptmann 1999: 66). Relevant sites in this area include: Nevalı Çori, Hayaz, Gritille and Göbekli Tepe.

Nevalı Çori is 3 km south of the Euphrates in the hills of the anti-Taurus (Hauptmann 1999: 70). The site lies on both sides of a stream, and faunal evidence suggests the inhabitants had access to many different environments (Hauptmann 2012: 102).

Göbekli lies amid the currently treeless, steppic grass of the Germiş range, 15 km northwest of Urfa, on an artificial mound atop a limestone ridge (Pustovoytov 2006: 700). The low hills may have had isolated stands of trees, but no water was easily accessible at the site (Schmidt 2012: 41-2).

The mound of Gritille lies on the gravelly western bank 24 m above the ancient bed of the Euphrates (Ellis 1982). The Euphrates floodplain narrows between the Syrian Plains and the highlands of Eastern Anatolia, creating a favourable crossing for travel between the Tigris and the Mediterranean (1982: 321). Gritille is across the Euphrates from the contemporary occupation at Lidar (Hauptmann 1980). Hayaz lies on the right bank of the Euphrates, near the foothills of the Taurus.

The final Hauptmann subregion of Upper Mesopotamia is comprised of the *Eastern Taurus mountain flanks and the Upper Tigris valleys*. As such, it encompasses too many disparate areas with sites that bear little resemblance to each other. As this covers a vast and varied terrain, I have further subdivided the Eastern Taurus into those sites within the Batman drainage, and those that drink from the North Euphrates. The *Batman* sites include: Hallan Çemi, Demirköy, and Körtik tepe; and the *North Euphrates* sites include Cafer höyük, Çayönü, Boytepe, and Çınaz.

The *North Euphrates* area is comprised of sites nestled in the piedmont of the Eastern Taurus Mountains. Three sites, Çınaz and Boytepe – both unexcavated – and Tepecik, are clustered with 50 km of each other, about 200 km away from the main excavated site of Cafer höyük. Though the area has been decreased from the Hauptmann subregion, there is still an odd lack of coherence between the sites. Cafer was discovered in 1976, in the foothills of the eastern Taurus range within 1 km of the Euphrates in a wide, lush valley (Cauvin *et al*. 1999:89).

Çayönü, approximately 150 km to the west of Hallan Çemi, lies on the southern tip of the Ergani Plain in the contact zone between the Northern Piedmont and the Eastern Taurus Highlands, rising 5m above the plain. The site was probably in an open (not riverine) forest, with access to a steppe, three nearby streams and a marshy area near the remnants of a lake (Özdoğan 1999: 38). Due to its unusual artefactual collection and impressive stratigraphy, I have separated this site into its own subregion for database analyses (now called the Ergani region) and included Cafer höyük with the other Euphrates sites.

The *Batman region* sites lie along the tributaries of the North Tigris. Hallan Çemi is located in the well-watered foothills of the Sason Mountains, which are part of the southern Taurus range. The site is about 8 m above the bed of the Sason Çayı; one of three tributaries that feed into the Batman River. The Sason, Ramdenka, and Hıyan Çayları empty into the much larger river approximately 6 km downstream from the site. This favourable location allowed access to several vertically-stratified resources, as both rolling plains and high mountains are 5-10 km away (Rosenberg 1994, 1999, 2012).

Demirköy is located on a Pleistocene terrace bordering the floodplain of the Batman River, 20 km upstream from its confluence with the Tigris, and separated from Hallan Çemi by a low range of mountains (Rosenberg and Togul 1991; Algaze *et al*. 1991). North of the mountains, several smaller rivers merge into the Batman. Demirkoy is 10 m above the floodplain, but was likely closer to the river in antiquity. Though Demirköy is only 40 km from Hallan Çemi, the same access to stratified environments does not obtain. The open, rolling terrain had mostly steppic vegetation (Peasnall 2000: 243).

Körtik tepe lies near where the Batman Çayı empties into the Tigris, about 20 km SW of the modern city of Batman (Özkaya and Çoşkun 2009). The site rises 5 m above the surrounding plains and is about 100 m from one of the many springs that flow into the Batman River (Özkaya 2004: 586). The inhabitants had easy access to both rolling grasslands and gallery forests, as well as the marshes along the rivers (Özkaya and Çoşkun 2012).

Eastern Wing of the Fertile Crescent

The boundaries between the Eastern wing of the Fertile Crescent and Upper Mesopotamia are somewhat arbitrary. Kozłowski considered the Eastern Wing to be fully half of the Fertile Crescent. For the purposes of this investigation, we must refer to the eastern tip of the Fertile Crescent as those sites south of Shimshara and at higher altitudes than the more northern piedmont sites. Sites within the eastern tip include Jarmo, Asiab, Sarab, Tepe Guran, Ganj Dareh,

and Sheik e Abad [Fig. 4.3]. These sites are included as part of the broader context of the investigation, due to their many connections with sites in the Zagros piedmont and the Upper Mesopotamian Plain.

This mountainous region had a number of seasonally inhabited camps, near passes through the Zagros between the lowlands of Meosopotamia and the plateaus of Iran. The famous site of Jarmo is located in the foothills of the Zagros Mountains at about 800 m asl, to the east of the Iraqi city of Kirkuk. Ganj Dareh is a small mound in a small side valley in the Central Zagros (Smith 1990). It is thought that the habitation of the site was probably seasonal because of such drastic climate changes at that altitude, though no other evidence supports this. Sheik e-Abad is at a very high elevation, about 38 km NE of Kermanshah City in Iran, and surrounded by 3 km peaks. The occupation is entirely Aceramic Neolithic, with a nearly 3 thousand year sequence (Matthews 2011).

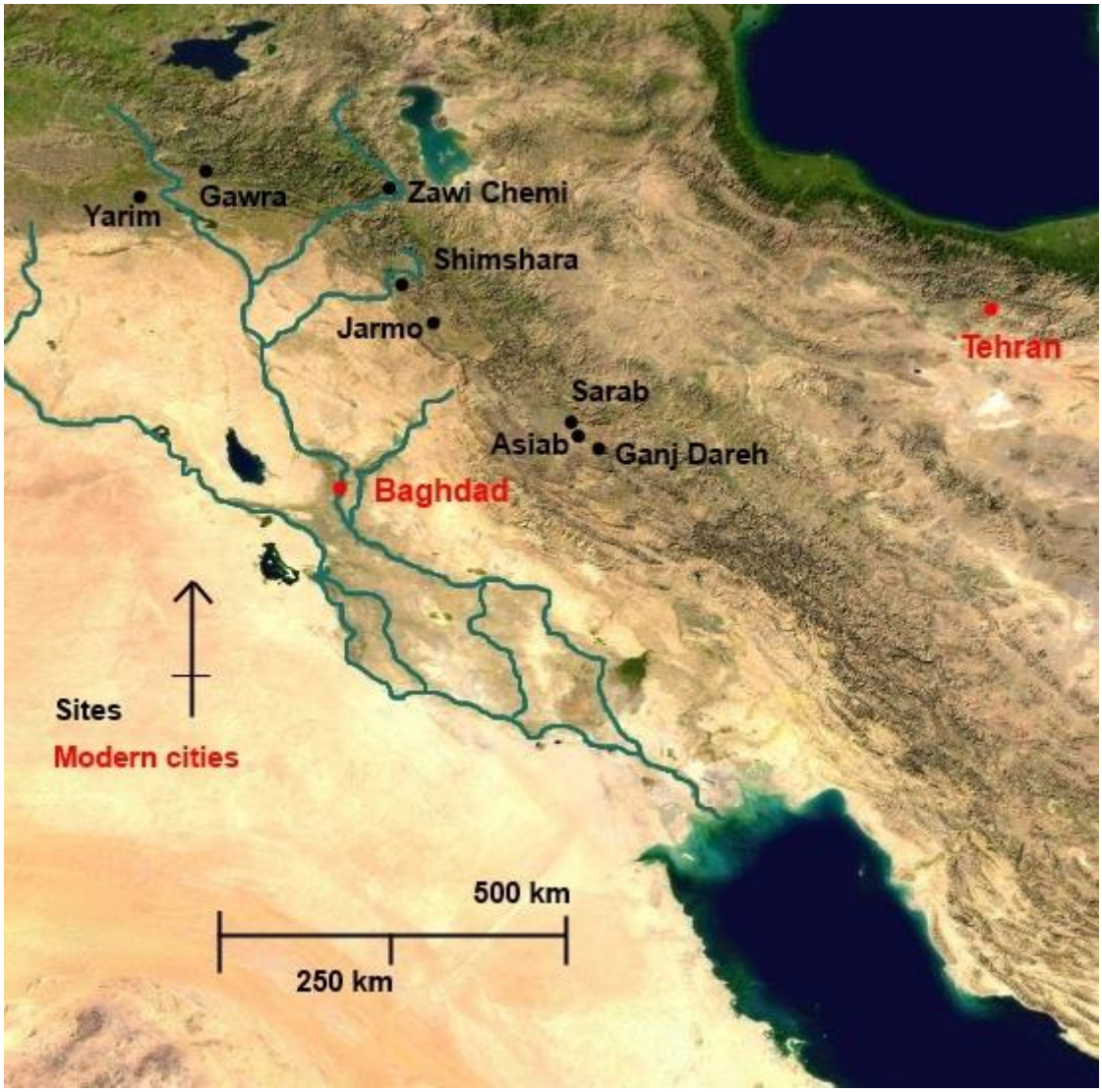

Figure 4.3: Sites along the Eastern Wing of the Fertile Crescent.

Anatolia

Although much of Upper Mesopotamia lies just to the east of the larger Anatolian peninsula, it does not encompass the entire research area. While central Anatolia and the areas south of the Marmara Sea are included in the PPNB interaction sphere by Bar-Yosef and Belfer-Cohen (1989), the regional variations are rather striking. The importance of Anatolia has been underlined by research in the Aegean coast, Thrace, the Lake District, the central Konya Plains, and Cappadocia.

Central Anatolia falls in the southern part of the central Anatolian plateau and is defined by the Kızılırmak river valley to the north and the Taurus Mountains to the south (Kuzcuoğlu 2002:33). This area encompasses the sites in Cappadocia to the east, and the Konya-Ereğli Plains to the west (Thissen 2002:3).

The *Cappadocian* sites include Aşıklı Höyük, Pınarbaşı-Bor, Köşk höyük, Tepecik and Musular. Aşıklı is located in the northern Ihlara Valley, about 25 km SE of Aksaray, in the narrow valley on the eastern shore of the Melendiz River. It is part of the alluvial floodplain of the river, on the southwestern edge of the low volcanic plateau overlooked by Hasan Dağ and the Melendiz Mountain Chains (Özbaşaran 2012; Esin 1998). Musular is also located in the Ihlara Valley, about 350 m directly west of Aşıklı on the other side of the river (Özbaşaran 1999: 149). The later sites of Köşk höyük, Pınarbaşı-Bor and Tepecik are found in the well-watered Cappadocian Plain. Tepecik is located in a fertile valley near the obsidian source of Gollu Dağ (Bıçakçı *et al.* 2007). Köşk is 40 km to the south of Tepecik, next to a spring on a rocky outcrop. Both Tepecik and Köşk are notable for the dynamic rebuilding of houses and nearly identical pottery assemblages, which in no way resemble the assemblages from the roughly contemporary sites of Çatalhöyük West or Canhasan 1 (Düring 2010: 148).

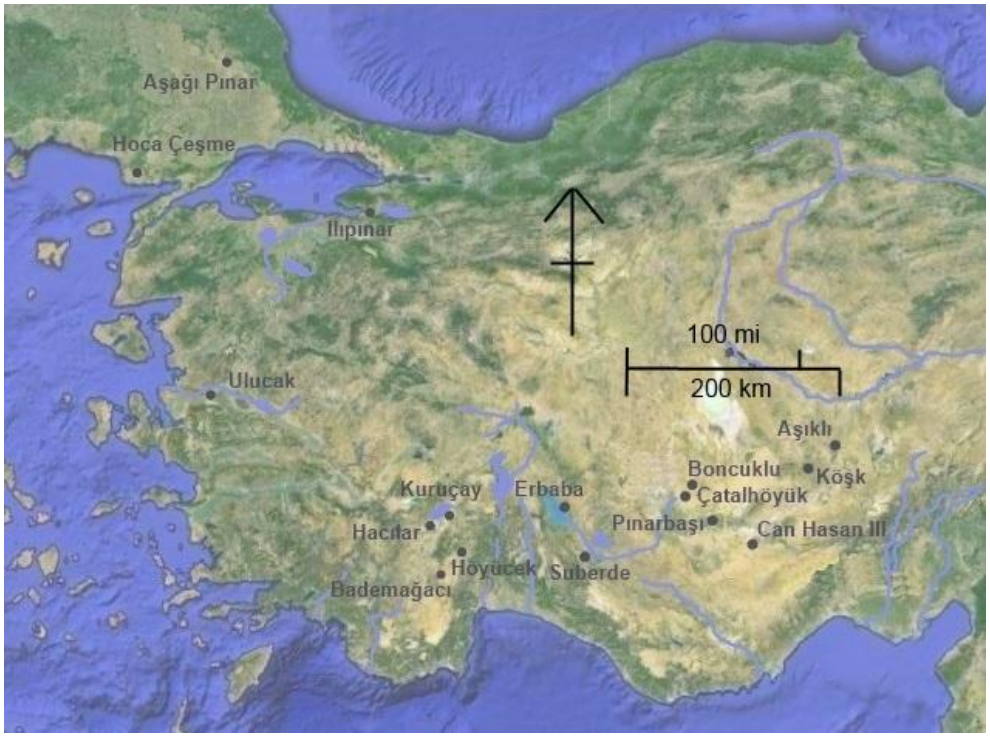

Figure 4.4: Map of Anatolian sites discussed in the text.

The southern *Konya Plain* bears the excavated sites of Pınarbaşı, Boncuklu, Can Hasan III and Çatalhöyük. The plain was formed as the basin of a Pleistocene lake began to dry up, leaving both marshy patches and higher stands of alluvium from rivers which came down from the Taurus (Roberts *et al.* 2006). Rainfall currently averages 250 mm/year (Yakar 1994), with more moisture to the south. Pınarbaşı is a rock shelter in a ridge of limestone cliffs NW of Karadağ, about 32 m SE of Çatalhöyük, on the SE edge of the Konya Basin. Pınarbaşı A and D are the trenches in the open areas, and Pınarbaşı B and C are in the rock shelter (Baird *et al.* 2011). Boncuklu is a small Aceramic mound SE of Konya and about 9 km from Çatalhöyük. It will be described in detail later on in this chapter. Çatalhöyük East was situated on the east side of a branch of the Çarşamba River 140 km from Hasan Dağ, and 52 km SE of Konya. It lies 16 m over the plain. Can Hasan III, 12 km NE of Karaman in the Konya Plain, is located in a flat plain with steppic vegetation (Van Zeist and Bottema 1991: 24).

The *Lake District* lies to the west of the Konya Plain, separated from it by a range of low mountains. The climate is also much wetter. On the Konya Plain the vegetation is more steppic and arid, water is scarcer (though still abundant) and its availability can quickly change the climate (Kuzcuoğlu 2002: 33-34). The southern extent of the Lake District is the Taurus Mountains, and the northwestern border is placed at the political border between the provinces of Afyon and Denizli (Duru 1999: 165). The eastern border is not so well-researched, so Duru (1999: 166, 169) places Erbaba and Suberde in the peripheral area of the Lake District, the Beysehir-Sugla Region, in a transition zone to the Konya Plain. The main sites of the Lake District are found in a 60 km swath running south from the basin of Lake Burdur along the modern Burdur-Antalya road.

Hacılar lies in a valley along the Taurus, 100 m above Burdur Lake. The site is 26 km SW of Burdur in Turkey. The area was likely forested quite heavily during the Neolithic occupation (Schoop 2005: 48).

Kuruçay is located 2-3 km south of Lake Burdur, very close to Hacılar, but on the hills surrounding Lake Burdur. Kuruçay is closer to the Lake (Duru 2008). Höyücek rises 3.5 m above the northern part of a small plain 35 km south of the modern city of Burdur (Duru 2005: 15). Bademağacı lies along the hills that make up the southern border of the Anatolian plateau, 75 km down the Burdur-Antalya highway. Suberde is in a river valley on a limestone outcrop NW of Lake Suğla, near streams running down to the Lake (Bordaz 1969). Erbaba is about 1.5 km E of Beyşehir Lake on a natural hill, with access to forested woodlands 12 km from the site (Van Zeist and Bottema 1991: 75-7).

Thrace is the European part of modern Turkey, bounded by the Aegean to the south, and the Bosphorus to the east. Parts of Thrace reach into modern Greece and Bulgaria, north to the Balkans and west to the Rhodope Mountains. For the purposes of this inquiry, Thracian sites will include those around the southern shore of the Marmara Sea and include: Hoca Çeşme, Ilıpınar and Aşağı Pınar. Hoca Çeşme is a coastal site near a deltaic plain, on a terrace overlooking the Marica River. Ilıpınar is located to the NE of Bursa, and 1.5 miles to the east of İznik Lake. Aşağı Pınar lies on a plain near two streams, just south of the city of Kırklareli. It too, lies at an intersection of

environments: the steppe of the Ergene basin and the forested Istanca Mountains (Özdoğan 2011:213). Thrace had no natural outcrops of high-quality flint or obsidian, so other metamorphic rocks, such as nephrite, were quarried at the site of Şarköy, in modern Tekirdağ (Özbek 2010). This site is still 50 km from Hoca Çeşme and over 150 km from Aşağı Pınar, and sheds no light on the origin of the obsidian or flint.

The best-known site near the *Aegean* that dates to the Neolithic is Ulucak höyük, which is located in the western tip of the Kemalpaşa Plain and bounded by mountains to the north and south (Abay 2003: Fig 1). It is 25 km east of modern İzmir. Evidence for long-distance trade is present in the obsidian which has been sourced from the island of Melos (Pernicka 2009). Other sites in the area, such as Yeşilova in the Bornova Plain, near the intersection of two small streams (Derin 2010) have largely been presented at conferences in İzmir.

The Levant

The Levant runs along the Mediterranean coast for over a thousand kilometres north-south, and up to 350 km inland; from the Sinai Peninsula to the Taurus Mountains [Fig 4.5]. The narrow coastal area gives way to a mountain range, a valley, another mountain range and then a plateau, thus ensuring a great variety of environments packed into a relatively tiny space. These sites are included as part of the broader comparative context of the main study, and so I will briefly describe the landscapes around a few sites, particularly Wadi Feynan 16, Basta, 'Ain Ghazal, and 'Ain Jammam as they have evidence of structured depositions.

Figure 4.5: Some Neolithic sites along the Levant, including those without evidence of structured deposition to show distribution and relation to those included in this study: Wadi Feinan 16, Basta, and 'Ain Ghazal.

Aside from the highest mountains, the entire Levant was dotted with settlements, both open sites and rock shelters. By the late Natufian, rock shelter sites began to move away from the cave and onto the terraces in front. Most of the larger Late Natufian sites were near water sources in the upland foothills. The earliest Neolithic sites in the Levant tended to be open sites, with a few shelters and terrace sites (Moore 1978: 63). I will now describe the basic settings of a few sites, beginning with the earlier ones, and progressing to the later ones.

Wadi Feynan 16 in the Wadi Feynan area of southern Jordan was located between the Wadi Araba and the mountains which lead up to the Jordanian Plateau (Finlayson *et al.* 2011). It is less than a kilometre from the site of Ghwair (Simmons and Najjar 2000), and climatic reconstruction based on the plant and animal remains suggests easy access to water as well as to several different kinds of woodland and steppic environments (Mithen *et al.* 2007). 'Ain Jammam was built on a steep incline near a very full spring, in the limestone escarpment of the Ras an-Naqeb in southern Jordan (Fino 2004: 105; Waheeb in Bikai and Eggan 1996: 514). Tell Aswad is on a tributary of the Jordan River, 30 km from Damascus, on the marl of a Pleistocene lake and surprisingly distant from contemporary sites (Edwards *et al*. 2004: 46).

The huge site of 'Ain Ghazal is located on the western edge of the permanent Zarqa River, with a smaller, contemporary enclave across the river to the east (Rollefson 1983: 29). Kfar HaHoresh is located 25 km west of the southern tip of the Sea of Galilee, "in the upper reaches of a small wadi issuing into the Jezreel Valley from the western flanks of the Nazareth Hills ... Extending over ca. 0.6 hectares, it is nestled at the base of a north-facing hill bounded by a 2–3-m-high bedrock bluff" (Goren and Goring-Morris 2008). Basta is located 25 km south of Petra in a mountainous limestone area near as-Sadaqa, parallel to the Jordanian rift valley. Shaqarat Mazyad is located 13 km north of Petra, in a mountainous area at the southernmost tip of a flat area with views of several wadis (Kaliszan *et al.* 2002).

This overview of the regions under consideration shows a great diversity in the areas chosen for settlement. Whether situated in a valley, rock shelter, steppe, or near a marsh, people at all sites had easy access to water. The clear exception is Göbekli tepe; which shows some other factor was more important than access to water. This anomaly may shed light on the choices made there, resulting in monumental ritual depositions. Common features of pre-agricultural locations include access to a broad range of environments and their associated resources. Later, agricultural sites tend to be in or near alluvial soils conducive to growing crops. With this basic geographical information, I can later examine if certain types of depositions are more likely to be found in particular types of environments.

4.3 Palaeoclimate

An understanding of the environmental conditions which obtained during the occupation of these sites is as necessary as the chronological and geographical contexts. In fact, it is the

palaeoenvironment which brings together our modern geographical understanding with temporal validity. It is clear from pollen cores, varve sediments, diatom and mollusc remains that the weather is constantly inconstant. The larger trends are far easier to extrapolate than the local variations, but it is the local conditions that affected the human persons who acted and interacted at these sites. Unfortunately, due to the constaints imposed by time, it is not within the scope of this research to examine the relation of palaeclimactic conditions to depositional activity. This section is included both to acknowledge the relevance of this type of data and also in hopes of laying the groundwork for future research.

The changes of the palaeoclimate can inform inquiries into the shift from foraging to farming, sedentarising behaviours or the changing relationship with animals. Some archaeologists go so far as to claim the changing climate was the "primary trigger...to start cultivating" (Hillman *et al.* 2001: 383). The section will be organized by a brief explanation of the terms and the methods used for palaeoclimactic reconstruction, followed by a regional description of local environments.

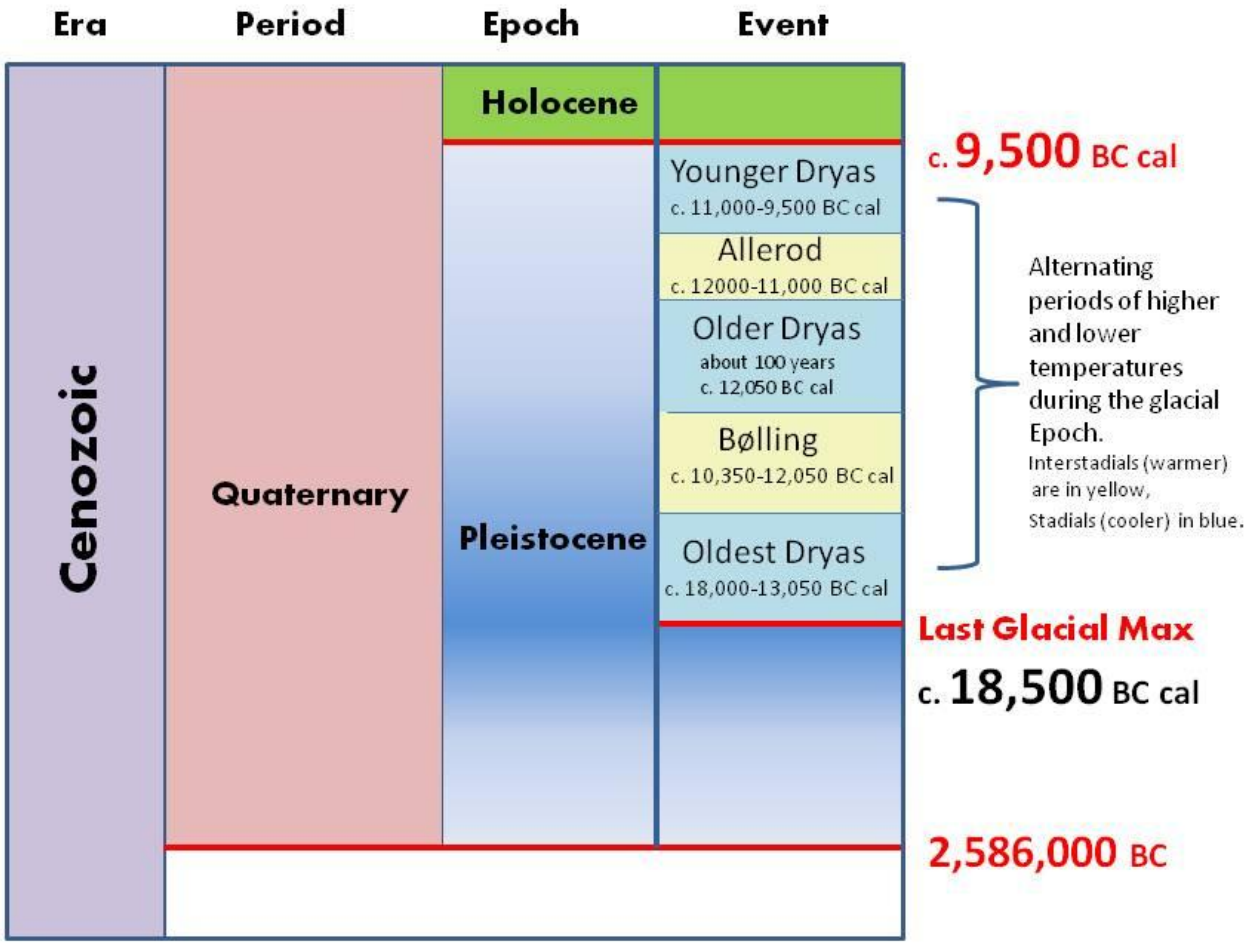

Figure 4.6 Relevant Geologic divisions. **Not to scale**. Calibration conversions after Stuiver *et al.* 1998.

The beginning of the Quaternary Period and Pleistocene Epoch (at around 2.586 million years cal BC) saw the establishment of permanent ice sheets near the poles (Fig. 4.6). The massive

increase in ice led to drastic change in the palaeoclimate. There was a drop in sea level, a raised albedo of the Earth, and the creation of many lakes in the ruts scraped out by the passage of glaciers.

Since the Last Glacial Maximum (LGM), peaking at approximately 18,500 cal BC, the Pleistocene climate oscillated between cold and warm events. The cold events, or stadials, were named *Dryas* after a certain eight-petalled flower whose pollen was prevalent in ice cores during the stadials. The last cold oscillation, called the Younger Dryas event, heralded the drastic end of the Glacial Period and the beginning of the Holocene. At the end of the Younger Dryas event, the climate generally improved, becoming warmer and more humid.

The palaeoclimate can be reconstructed in part through analysis of sediments, biotic remains and geochemical analysis from both marine and terrestrial sources (Fig. 4.7). Terrestrial records, such as those from lakes and rivers, can inform as to more subtle and local changes in climate; while glaciers can inform as to major shifts on a millennial scale. In general terrestrial records tend towards incompleteness, especially during arid periods (Fontugne *et al.* 1994:75). Marine data for the Near East comes from the Mediterranean Sea; the eastern sediments of which are often laminated, providing a record that is easy to correlate with other sources (Nicoll and Küçükuysal 2012). The deep sea cores are useful as their spatial relevance is broad, yet the chronological resolution is less than from terrestrial sources (Fontugne *et al.* 1994: 76).

The composition of sediment archives from lakes provides evidence for shifting palaeoshorelines and water level (Macklin *et al.* 2002), as well as for sedimentary processes such as alluviation or loess deposition.

Geochemical investigations of salinity or stable isotope variation can inform as to changes in the local water balance. Shifts in element abundance could indicate a change in headwater source. Stable isotope variation among foraminifera reveals changes in the temperature or salinity of shallow water (Williams *et al.* 1978).

Stratigraphic alterations in fossil biota, such as pollen or diatoms, indicate changes in vegetation, which in turn are influenced by changes in the climate (Cheddadi and Rossignol-Strick 1994). Palynological data is relevant only to local seasonality and hydroclimatic variables, as micro-climates across the Near East are extremely variable (Fontugne *et al.* 1994: 75; Nicoll and Küçükuysal 2012).

The general pattern across the Near East is one of slow warming after the LGM. Reforestation began to occur more quickly near refuges of trees which had survived the coldest temperatures, but abruptly stopped during the cooler and drier Younger Dryas. Pollen samples from eastern Anatolia and western Iran from before the 9th millennium cal BC are dominated by non-arboreal pollens such as *Artemisia* and chenopods, indicating that the vegetation was steppic (Baruch 1994: 111). Steppe or desert-steppe vegetation is typical of very arid atmospheres. After about 8,500 cal BC, arboreal pollens increase in the cores taken from Lakes Van, Zeribar and Urmia (van Zeist and Bottema 1991). These pollens are dominated by *Quercus* (oak) and *Pistacia*. The increase of arboreal pollen grains in the cores indicates that the Oak-Pistachio forest began to spread in parts of Anatolia before the Levant, which also suggests that parts of Anatolia had higher

precipitation levels earlier than the Levant or that glacial tree refuge areas existed (van Zeist and Bottema 1991: 123).

Around 8,500 cal BC, herbaceous pollens remained, as before, a high percentage of the total, yet the types of pollens represented changed. *Artemisia* and chenopodicaea are replaced by Graminaea (van Zeist and Bottema 1991: 55). This demonstrates that the steppe changed from an *Artemisia* steppe to a grass-dominated steppe between the 11th and 7th millennia cal BC (Baruch 1991: 111). None of these changes progressed uniformly across these regions (van Zeist and Bottema 1991: 147).

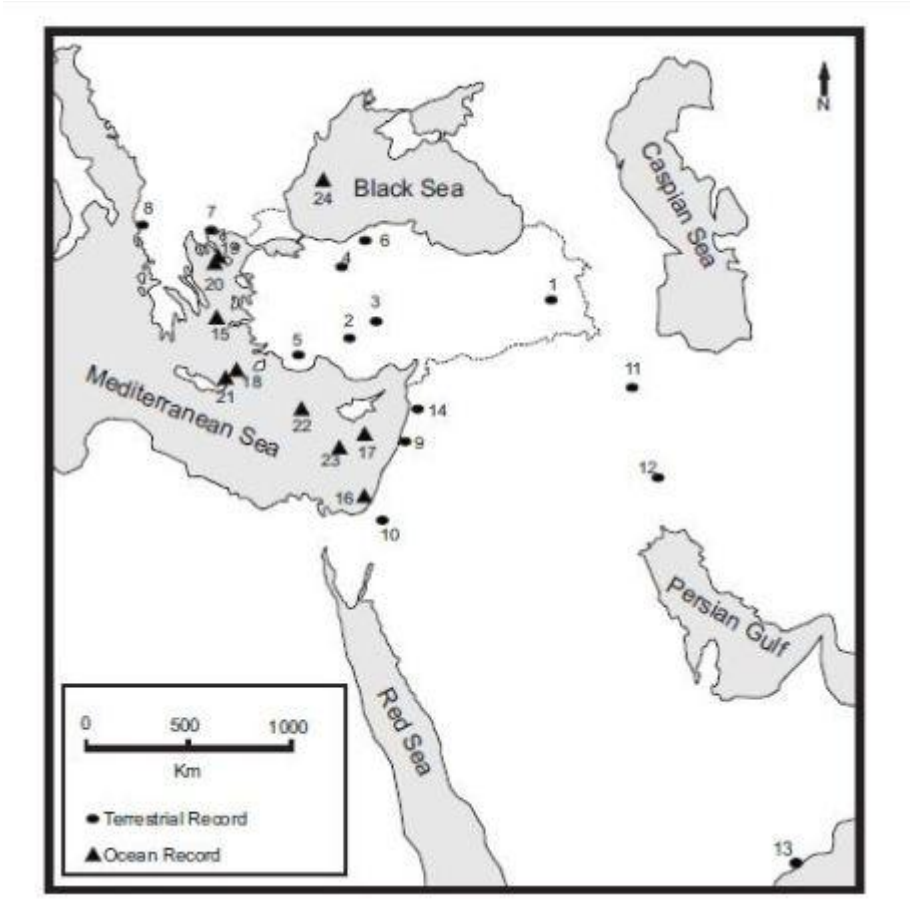

Fig 4.7. Locations of core samples and types of analyses run in the Near East. 1 Lake Van (isotope, magnetic, pollen); 2 Konya (isotope, diatoms, pollen, sediments, foraminifera); 3 Eski Acigol (isotope, diatom, pollen); 4 Abant (pollen); 5 Golhisar (isotope, diatom, pollen, sediment, magnetic); 6 Sofular Cave (isotope); 9 Jelta Cave (isotope); 10 Soreq Cave (isotope, pollen); 11 Zeribar Lake (isotope, pollen). From Nicoll and Küçükuysal 2011; Fig 1.

At the beginning of the Holocene, the Levant became warmer and wetter, with forest expansion at lower altitudes (Roberts 2002). Hydrological conditions in the Dead Sea region of the Levant during the early Holocene can be determined through reconstruction of lake levels. At the end of the 9th mil cal BC, the previously dry atmosphere became wetter, and more conducive to plant growth. This coincided with the onset of sedentary and PPN cultures (Migowsky *et al.* 2006). The onset of another arid period mid 6th mil cal BC was contemporaneous with the abandonment

of settlements (Jericho, Baja). Sites became smaller and more numerous during the Pottery Neolithic and Chalcolithic, with the exception of megasites near the Jordan River, which had better access to water (Migowsky *et al.* 2006).

The same situation did not necessarily obtain at higher altitudes in the Zagros and Taurus Mountains. The evidence from Lake Zeribar (1300 m asl) in the Zagros Mountains (Stevens *et al.* 2001; Wasylikowa *et al.* 2006) and Lake Van (1648 m asl) in Eastern Turkey (Wick *et al.* 2003) have very high counts of steppic pollens and very low arboreal pollen counts. By the PPNB, sites such as Jarmo would have been situated in an oak and pistachio woodland belt with moderate rainfall levels. During the early PPNA, most of Upper Mesopotamia was dominated by steppic vegetation in the lowlands and the scrappy beginnings of an oak-pistachio forest in the hills (Baruch 1994: 113). True forest expansion is not noted in the pollen record until mid 6th mil cal BC in the Van/Soğutlu area, though it begins much earlier farther to the north in the Urmia region (Baruch 1991: 113).

The extreme variability of local hydrological conditions is clear from the archaeological evidence from the PPNA Batman sites (Hallan Çemi, Körtik tepe and Demirköy). At the time they were occupied, the area was dominated by a riverine forest. This is supported by wood charcoal remains identified as *Fraxinus* (ash), *Quercus*, *Populus* (poplar), *Pistacia*, *Amygdalus* (almond), *Prunus*, *Salix* (willow) and *Frangula* (buckthorn) (Peasnall 2000: 133). The high degree of moisture is demonstrated by an oak charcoal specimen with relatively thick rings (Peasnall 2000: 134). This variation between different types of evidence is not unusual. Divergence, especially between pollen and stable isotope data can occur in the records from the same lake. Oscillations between humid and arid conditions were likely, and vegetation responded accordingly (Eastwood *et al.* 2007).

The Konya Plain, once the basin of a Pleistocene lake, was effectively arid during the early Holocene (Roberts 1991:10; Roberts *et al.* 2006). Evidence suggests that the Konya Plain had been a dry steppe until 10,200 cal BC, even though grasses had been starting to take over (Roberts *et al*. 2005). Seasonal flooding was common and, by the time of settlement at Boncuklu, the Plain resembled a complex medley of "marshy flood basins and intervening natural marl hummocks" (Roberts and Rosen 2009: 396). The presence of wetland birds as well as fish from both fast-running and still, lacustrine habitats from Boncuklu and Çatalhöyük paint a picture of wetlands (Carasco: *in press*). Isotope analysis of *Unio* shells from Çatalhöyük show that they lived in small ponds or lakes, with highly variable water levels between summer and winter (Bar Yosef Mayer *et al.* 2011). This indicates drier summers and heavy winter precipitation.

To the west of the Konya Plain, in what is now called the Lake District, reforestation around Lake Beyşehir started during the Pleistocene, and was completed relatively quickly (van Zeist and Bottema 1975).

With differing amounts of precipitation and humidity, modern lakes and seas have incongruous shorelines to those during the Neolithic. Ulucak and Hoca Çeşme would have been further from the shoreline of the sea than they appear now.

To conclude, most regions at the beginning of the Holocene were generally increasing in warmth and humidity, though by no means in a constant or uniform manner. Conflicting information from various sources adds to a very complex picture of the trajectories of climactic amelioration. The various paths to a more optimal weather pattern can inform the decisions made as to the appropriateness of certain items or representations for special deposition. This allows for questions such as "Are items associated with cultivation more likely to be specially deposited in colder areas?" to be asked of the data. It also sets the stage to see if differing levels of agricultural activity correspond with different types of symbolism or depositional activity.

4.4 Chronologies

The difficulties that scholars face when dating pre-Bronze Age sites are especially exacerbated across the Near East. There is no consensus among scholars as regards a single set of labels for the whole area and often comparative terminologies from discrete regions are used in the stead of terminologies or chronologies derived from a quorum of local sites. This dissonance adds to the already difficult task of determining when an object was created, how long it was used or re-used, or when a seed was consumed or buried. In order to properly set the context of the sites involved in this study, I will survey the methods used for dating Neolithic sites and then begin with specific sites in the Levant, followed by Upper Mesopotamia, the Eastern wing of the Fertile Crescent, and ending with Anatolia. By describing which methods were used (when possible) for particular sites, I will be able to demonstrate the range of accuracy, techniques and terminology used in the chronological placement of these major sites. To properly demonstrate these ranges, more sites will be described than included in the graphs that accompany each sub-section, as the graphs will visually represent the data only for those sites which were found to have good evidence for structured deposition, and therefore included in the database (See 5.8.1 for a description of the database). To combat confusion, I have included absolute dates, as well as both of the major sets of terminology in each graph that describes the radiocarbon dating. The combined set of graphs can be found at the end of this section, in Figure 4.15.

Scholars date prehistory by methods that provide either absolute or relative answers. Absolute dates are attained through physical or chemical investigation. There are three different modes of analysis to attain a relative date: comparison of artefacts or architecture with those of nearby sites; comparison with theoretical models; and provenience. Each of these dating approaches has its own assumptions.

Material culture is used to confirm the absolute dates from the radiocarbon counts, or in the absence of absolute methods provide any date at all. The most common objects used for relative dating are chipped stone tools, ground stone pestles, pottery and architectural forms. Seriation of forms has led many scholars to rely on techno-typological grouping of artefacts. For example, lithic typology uses *fossiles directeurs*, or diagnostic types, from dated and stratified contexts and extrapolates from them and compares them with what is available from other sites in the region (Gopher 1994).

Another problem is that one is presented with a great many radiocarbon and related scientific dates, derived from many different laboratory procedures. Some of these radiocarbon dates have been calibrated, and others have not. Those that have been calibrated may not have all been calibrated using the same equation for adjusting the curve, and the curve itself is constantly recalculated. More often than not, radiocarbon dates are presented with only one standard deviation (1σ), in which about 67% of all of the counts will fall within. Obviously, presenting dates at 2 standard deviations, in which 95% of the counts will fall, is more likely to include the "true" date of the sample. Please refer to appendix 2 for the list of laboratory numbers of the dates used in this study, as well as the calibration progam(s) and, where possible, the type of material used for dating.

Calibration cannot take into account the "inbuilt age" and "old wood" problems that arise when dating any sort of wood. The lifespan, or inbuilt age, of the tree must be considered; so smaller sticks, twigs and species that do not live very long have smaller errors and are preferred for radiocarbon dating if they can be identified. Wood that has been used as charcoal was often previously part of a structure or utilized in some other sense prior to its final deposition. The radiocarbon counts would provide the date at which the tree had been cut down, not the date it had been burned or deposited. To compensate, species such as willow or buckthorn are preferred as they have relatively short lifespans. Longer-lived species include ash, poplar and almond. Oak and terebinth have especially long lifespans and are therefore susceptible to "old wood" effects.

The area under study straddles several eco-cultural zones, each with its own imposed chronology. For Levantine sites, a distinct chronology has been constructed by associating changes in architecture with concurrent changes in lithic technology. The Neolithic was originally distinguished from the Palaeolithic by the appearance of ground stone, and later ameliorated to add the presence of pottery and farming (Lubbock 1865). The discovery at Jericho of Neolithic levels that did not produce pottery led Kenyon to distinguish a Pre-Pottery Neolithic (PPN) from the Pottery Neolithic (PN). Kenyon then separated the PPNA (c. 9600-8700 cal BC) from the PPNB (c. 8700-6900 cal BC*),* when round house plans and unidirectional lithic cores gave way to rectangularly-shaped dwellings and bi-polar cores. The "diagnostic" El Khiam points (as well as Salibiya and Jordan Valley points) of the PPNA disappear and are replaced by different point technologies (Helwan, Jericho, Byblos and Amuq) (Bar-Yosef 1994: 6-7). The PPNB is further divided into Early (8800-8200 cal BC); Middle (8200-7500 cal BC); and Late (7500-7100 cal BC) periods. Local variations exist within the Levantine PPNB, but not to the extent that sites and practices differed during the PPNA.

The problems with using this terminology stems from its origin in descriptions of subsistence economy and cultural assemblages, rather than absolute dates (Hughes 2010). As absolute dates were correlated with Levantine evidence, the later-recognized Aceramic sites in central Anatolia and Mesopotamia became subsumed under this external regional terminology. Another problem arises from the imposition of a terminology that is necessarily developmental, as the chronological implications are absurd. For example; assuming that all Epipalaeolithic

settlements preceded the Neolithic in time, one might suggest that by travelling to a nearby occupation that operates at a different lifeway frequency, you are going backwards in time. Evidence for neighbouring settlements with widely divergent subsistence patterns exists at Lepenski Vir (Borić 2002).

In order to distinguish the Anatolian Neolithic from the Levantine, Stein proposed using Aceramic A and Aceramic B (1989), though it is now used as a culturally neutral description of an agricultural economy without pottery. However, the areas that comprise Upper Mesopotamia are often described in terms of the Levantine chronology, as it was proposed and established first.

It was within the varied topography of the Levant that a group of sites with similar material culture, dating to the very end of the Palaeolithic, were labelled Natufian. The Early Natufian is typically dated between c. 12,500 – 10,800 cal BC; while the Late Natufian sites appeared during the cooler Younger Dryas Event, c. 10,800 - 9,700 cal BC. Dorothy Garrod's work at Shuqba Cave in the Wadi an-Natuf led her to describe the assemblage of grinding and pounding tools, exquisitely worked bone and intramural graves in *The Stone Age of Mt. Carmel* (1937). Further excavations in the 1950's and 1960's refined the Natufian assemblage characteristics, and located its 'homeland' in the central Levant (Bar-Yosef 1998). Common to many of these caves and open-air base-camps were pit houses (Perrott 1966), plastered pits and other indications that these Natufian settlements were occupied year-round. Questions of the relation between climate change and the origins of agriculture became popular with the explosion of sickle-gloss on chipped stone tools. Mortuary ritual becomes more elaborate, with skull removal beginning in the Late Natufian at Nahal Oren and at 'Ain Mallaha, and there are at least two instances of probable dogs buried with humans. The most relevant Natufian sites to a study of ritual activity include: Nahal Oren, Hatula and 'Ain Mallaha (Fig. 4.8). Eynan/Mallaha's earliest good date falls between 12,240-12,070 cal BC; and 3 dates place the most recent levels between 10,080- 9870 cal BC cal. Nahal Oren has only one usable date, but due to calibration-curve wiggles, it arguably could be either PPNA or PPNB. The dates from Hatula all have huge standard deviations, but cultural assemblages indicate the presence of a Khiamian layer (10,150-9650 cal BC) and a Sultanian layer (9820-9320 cal BC), although the distinction between Khiamian and Sultanian is challenged by several archaeologists (*e.g.* Maisels 1993). Sites with Natufian-like cultural remains outside of the Levant include Abu Hureyra and Mureybet to the north in modern Syria (Aurenche *et al.* 2008). The Late Natufian period at Mureybet, or Phase I, is dated to 10,600 cal BC and 9600 cal BC. The eponymous Mureybetian level dates to 9500 cal BC and 8800 cal BC (Aurenche *et al*. 2008). (See Fig. 4.9).

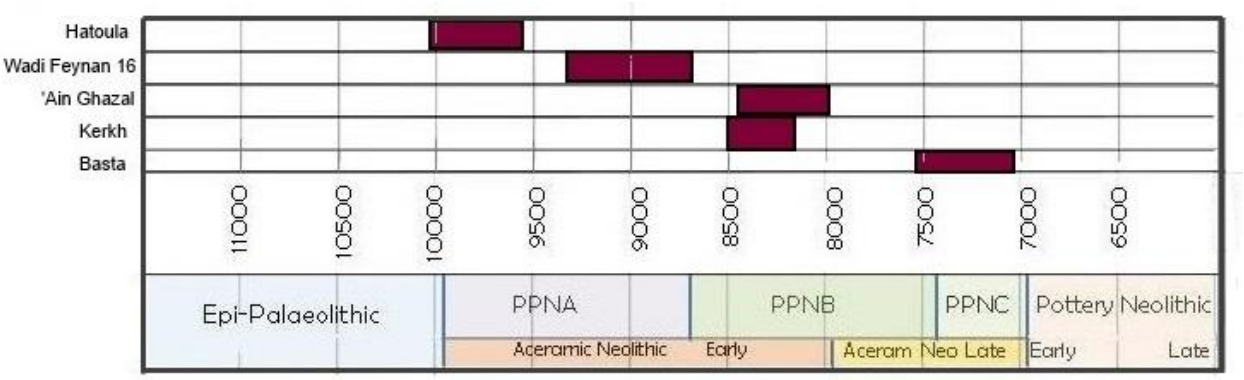

Figure 4.8: Neolithic sites in the Levant that were included in the database. The radiocarbon dates from Kerkh were suspect, so this is an approximation based on chronotypology. References are listed in Appendix 2.

The PPNA, or earliest Neolithic, is a transition period between mobile foraging and sedentary farming or herding. It appeared in many places and progressed at different paces. In the Levant, it is associated with new symbolic behaviour, communal structures and heavy-duty material culture (Garrod 1937; Cauvin 2000). Just as in the Natufian, sites with the best evidence for permanent settlement tend to be at ecotonal junctions for best resource exploitation.

During the excavation of Bronze Age Jericho, Kathleen Kenyon discovered early levels that bore no pottery. She divided these levels into Pre-Pottery Neolithic A and B. The PPNA curvilinear, semi subterranean houses included burials within walls and benches, and under floors (Kenyon 1957). Local variants of the PPNA were given names, largely relating to lithic types. South Levantine sites that date to the PPNA (mid 10^{th} – 9^{th} millennia cal BC) include: Jericho, Wadi Feynan 16, Gilgal, Netiv Hagdud, Gesher, and Dhra'. The earliest set of calibrated dates from Jericho starts only around 9300 cal BC, but uncalibrated dates go back into the Younger Dryas. The oldest set of dates from Wadi Feynan 16 are calibrated to 10,500-9,800 cal BC, but as most samples were juniper charcoal, which is a long-lived species, a more appropriate date is 9400 cal BC. The most recent stage, Phase 4, only comes from Trench 3 and dates between 8440 cal BC and 8280 cal BC (Mithen and Finlayson 2007:461). 5 dates from Gilgal give occupations during the mid 10^{th} and early 9^{th} mil cal BC (Noy 1989). Those dates from Netiv Hagdud with lower sigma values cluster around the mid 10^{th} mil cal BC (Bar-Yosef *et al.* 1991). The dates from Gesher are all mid 10^{th} cal BC (Garfinkel 1990). The 9 dates from Dhra' fall during a flat area of the calibration curve 9670-9390 cal BC and 9760-9390 cal BC (Kuijt and Mahasneh 1998).

One popular view is that the PPNB in the Levant has a 'koine', or common material culture, expansion of exchange networks and explosion of symbolic expression (Bar-Yosef and Belfer-Cohen 1989; Cauvin 1994). This is based on a culture-historical methodology dependant on population movements. Excavations undertaken since the publication of the 1989 paper have brought to light evidence that challenges the idea of both an expansionist culture and "Levantine primacy" (Rollefson and Gebel 2004). In response, some archaeologists have called for broadening the definition of a PPNB interaction sphere (Peltenberg 2004) or even scrapping the idea and using

different mechanisms to explain these similar material practices across a wide geographic area (Kuijt 2004; Özdoğan 2004; Baird 2006). The regional differences in subsistence (Asouti and Fairbairn 2002: 182; Nesbitt 2004), architecture (Rollefson 2004) and settlement patterns (Baird 2006) have eclipsed the idea of a dominant "supra-culture." The monocentric, expansionist dialogue of the 1980's is no longer relevant to social and phenomenological investigations of Neolithic lifeways (Gebel 2004). Archaeologists are now cautioned against monocausal and abstract explanations for local phenomena in the Near East (*e.g.* Asouti 2006:118).

As the settlements during the PPNA and PPNB showed a great deal of variability as to site location, this could not reliably be used to distinguish between construction types across time. A change in architecture, from curvilinear to rectilinear walls, and the implementation of lime plaster are changes associated with the PPNB. The introduction of the naviform core, domestication of sheep and goats, and an increase in the size of human figurines are further indications of the changes that came with the PPNB (Schmandt-Besserat 1998: 9). PPNB sites along the Levant include: Aswad, Kfar Hahoresh, Shqarat Msiad (or Shaqarat Mazyad), and 'Ain Ghazal (Goren and Goring-Morris 2008). The 27 dates available from Tell Aswad are difficult to correlate to stratigraphic levels and have huge standard deviations. The Gröningen dates were calibrated twice, once including and once excluding the Lyon dates, to get an overall range of 9300-7900 cal BC (Stordeur *et al.* in press).

4 radiocarbon dates from Kfar HaHoresh obtained a range between 8523 +/- 154 and 7668 +/- 54 BC cal (Goring-Morris *et al.* 2008:18; Goring-Morris 2005). All of the samples from Shaqarat Mazyad were from juniper charcoal. Allowing for the long-lived species, the excavators arrived at a date of c 8,000 cal BC. One lentil seed from the oldest phase at 'Ain Ghazal provided a date of 8500 cal BC (Rollefson *et al.* 1992: 445). The Basta dates fall within two as-yet uncorrelateable phases between 7550 and 7050 cal BC (Gebel pers. comm. in Benz 2007).

Upper Mesopotamian sites (See Figs. 4.9; 4.10; 4.11) largely used this imposed chronological scheme, especially as many of the first sites uncovered bore striking similarity to Natufian materials, unfortunately leading many researchers to claim a diaspora from a cultural homeland.

The *Middle Euphrates subregion* includes the sites of Mureybet and Abu Hureyra, both of which were settled during the Natufian period (Fig. 4.9). Abu Hureyra was settled during the 11th millennium BC, as evidenced by numerous pits and post- holes. Settlement at Mureybet began at the end of the Natufian period, around the middle of the 11th millennium cal BC (Akkermans and Schwartz 2003: 29-31). These sites are generally considered Levantine in character. PPNA sites in this region include Dja'de, Cheikh Hasan and Jerf el-Ahmar. The earliest phase at Dja'de dates to around 9,000 cal BC (Coqueugniot 2000). It is dated by means of its circular architecture (round house horizon) and paint from a red and black checkered wall was carbon dated to the 9th mil BC., Cheikh Hasan has no good date associated with it, but it belongs to the PPNA or EPPNB due to similarities with the stone tools of Tell 'Abr and Phase III from Mureybet (Abbès 1994). The earliest

date from Jerf el-Ahmar falls around 9450-9240 cal BC. The overall occupation at Jerf el-Ahmar corresponds nicely with the end of the Mureybetian (Aurenche *et al.* 2008).

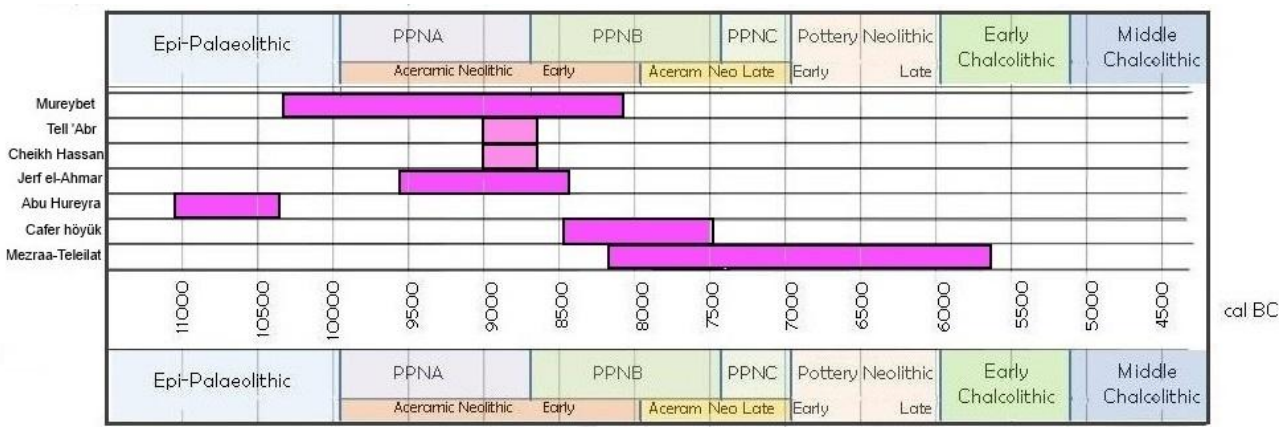

Figure 4.9: Euphrates sites included in the database. References are listed in Appendix 2.

The *Urfa subregion* is geographically quite close to the Middle Euphrates, but is distinguished by a conspicuous set of material culture (Fig. 4.10). Two seeds from Göbekli date to c. 9,000 cal BC, or early Aceramic B (Hauputmann 1999: 79). Calibrated dates from bone give a range of dates from 8500-6500 cal BC (Dietrich 2011). Charcoal gives dates between 9500 and 8300 cal BC. The nearby site of Nevalı Çori's earliest phase dates to 8600-8300 cal BC, Phase 2 8300-8000 cal BC, and four dates for phases 3 and 4 lead up to the end of the 8th milennium cal BC (Grupe and Peters 2008). Material culture from Gritille suggested a date in the 7th or early 6th mil, though radiocarbon from oak charcoal gives a date range of 7100-6900 cal BC (Voigt 1988).

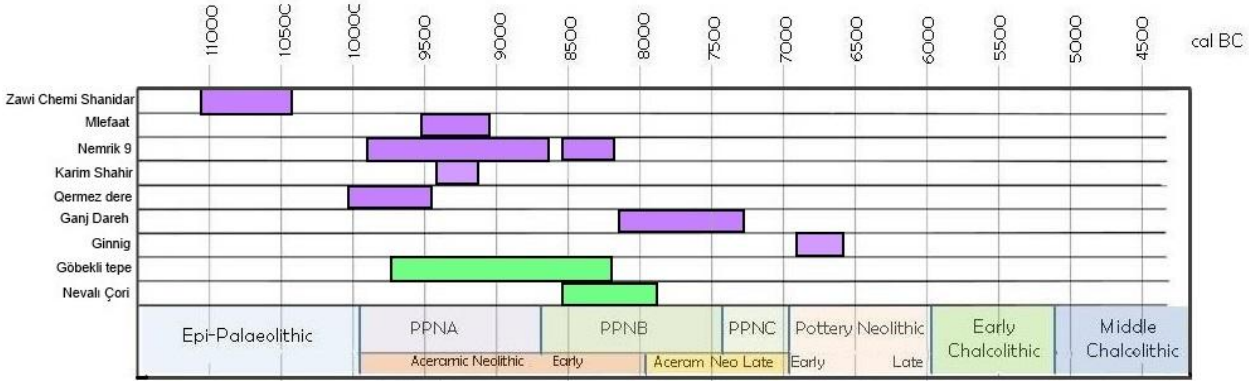

Figure 4.10: Radiocarbon dates from sites in the Urfa (green) and Zagros (purple) regions.
Dates from Karim Shahir are uncertain, and chronotypologically determined. References are listed in Appendix 2.

The *Western Zagros piedmont* sites were largely excavated decades ago, and tend to have few or problematic 14C results (Fig. 4.10). While these sites are most often described using the Levantine chronological scheme, the lithic assemblages most resemble the nearby, earlier Zarzian sites. The tendency for the earlier Zagros piedmont sites to be less substantial than contemporary sites to the southwest also led to difficulties in dating.

Only one charcoal sample was taken from Zawi Chemi Shanidar, with a date beginning the 11th mil cal BC (Solecki and Rubin 1958), though it is well-stratified and consistent with the nearby cave site at Shanidar and the material culture expected of Epipaleolithic subsistence.

The radiocarbon dates from M'lefaat are a complete jumble, though the accelerator dates were more in touch with the presence of Khiam points, so the site dates to roughly the mid 10th millennium cal BC. Four dates taken from lentil seeds confirm this (Kozłowski 1998). The rock scatter called Karim Shahir had nothing resembling architecture, and the charcoal from the few burned patches of hearths was too insubstanstial to recover.

Of an amazing 81 radiocarbon dates from Nemrik 9 published in 1994, only 13 were fit for calibration, as all the others had huge standard deviations or were stratigraphically inconsistent according to the excavator. These 13 cannot be verified, as only one lab has run the dates. The excavator has suggested that occupation began during the 10th millennium cal BC and ended around 8000 cal BC (Kozłowski 1994). Ground stone industries show similarities with those from Batman sites such as Hallan Çemi and Körtik, and two el Khiam points found in house 1A suggest a PPNA date, though their absence in House 1B has been over interpreted.

Six radiocarbon dates from seeds discovered by flotation place Qermez Dere across two main phases of occupation: 10050-9650 cal BC, and a later between 9260-8840 cal BC. Relative dating is facilitated by the presence of first Khiam and then Nemrik points (Watkins *et al.* 1995)

The *Northern Euphrates sites* differ from mid Euphrates both in material culture and settlement organization (Fig. 4.9). 11 Charcoal samples from Cafer höyük provide a range of the dates that can be centred between 8310 and 7510 cal BC, with respect to architecture and microliths, though the abundance of microliths could indicate an earlier occupation (Molist and Cauvin 1991; Cauvin and Aurenche 1982: 127).

37 charcoal samples and at least one human bone sample from Çayönü cover a broad range of dates that may suggest a contemporaneous occupation of the different building types, though this is not congruous with the interpretation of the excavators, who see a clear typological evolution over time (Fig. 4.11). The sum of the radiocarbon dates for the basal pit phase and the round-building phase overlap within a hundred years of each other, at 8600-8330 cal BC and 8550-8240 cal BC, respectively. The channel-building phase, much later according to the excavators, dates between 8630-8245 cal BC.

The *Batman region sites* dates are slightly earlier than those in the Northern Euphrates. 12 charcoal samples from Körtik tepe date the lowest levels yet reached between 9660 BC and 9600 BC (Benz *et al.* 2011). Typo-technological description of the chipped flint indicates an even earlier occupation (Özkaya 2009:7), while the youngest dates cluster between 9300 and 9400 cal BC (Fig. 4.11).

Two radiocarbon dates confirm the suspicion that Demirkoy was occupied after the abandonment of Hallan Çemi: 9410 and 9280 cal BC (Rosenberg and Peasnall 1998; Higham *et al*. 2007). The main occupation at Hallan Çemi starts around 9660 BC and lasts until about 9320 cal BC. The more recent dates from charred seeds are reliable, though the earlier dates run on charcoal

samples had huge standard deviations. Both sets of dates occur during a plateau in the calibration curve, and are difficult to narrow the range.

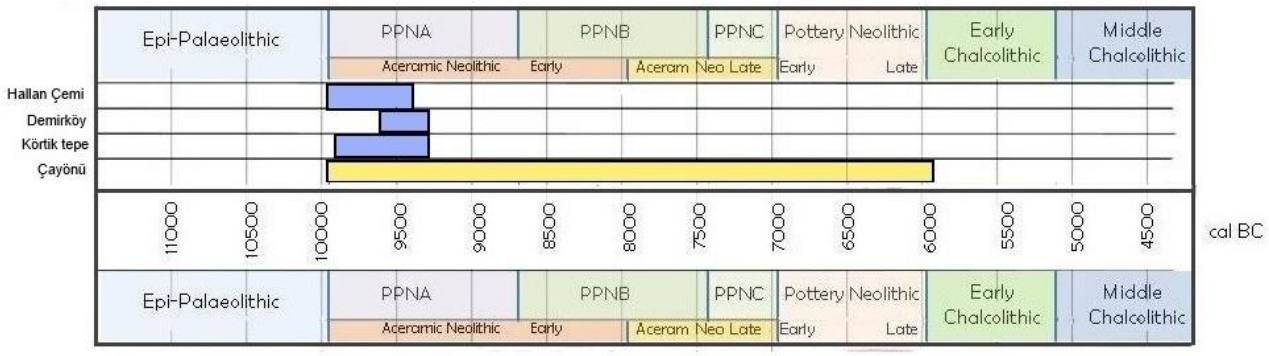

Figure 4.11: Radiocarbon dates for sites in the Batman (blue) and Ergani (yellow) regions. References are listed in Appendix 2.

The *Eastern Wing* of the Fertile Crescent, or central and southern Zagros sites south of Tell Magzhalia tend to be contemporary with the PPNB. The first occupation at Jarmo was entirely aceramic. Although the radiocarbon dates are too varied to be useful, the lithics are very similar to those from Tepe Sarab and Ali Kosh (Kozłowski 1994: 263). Ceramic comparison places Tepe Sarab contemporary with some levels at Jarmo and Guran (Voigt and Meadow: 161). Radiocarbon dates place Tepe Sarab at about 7,000 cal BC, largely contemporary with the later settlements at Tepe Guran. Asiab is dated to c. 8500-8000 cal BC (Voigt and Dyson 1992). Both Asiab and Sarab begin as seasonal camps without heavy architecture, with more permanent indications in later levels.

The single radiocarbon date from Tepe Guran suggests an age of about 7000 cal BC (Voigt 1983: 637). It was only a thousand years later that the village became a permanent settlement with mud brick houses and ceramics similar to those at Sarab. Four seeds and five charcoal samples from Ganj Dareh have been calibrated. Ganj Dareh falls within the middle PPNB between 8230 BC and 7750 BC, by averaging the seed dates (Smith 1990).

Currently, three trenches have been opened at Sheik e-Abad, with radiocarbon dates between 9,810 – 7,590 cal BC (Matthews: personal comm.) The lowest level shows evidence of seasonal burning. The middle level has both ashy middens and some architectural remnants. The most recent level has small-roomed structures and at least one headless burial beneath the floor of a house (Matthews: pers. comm. 2011).

Anatolia

For Central Anatolia, a consortium of archaeologists has proposed an alternate periodization for prehistory based on data from their region of study. Their Early Central Anatolian chronology (ECA I-V) begins at the Younger Dryas and extends to the beginning of the Anatolian Bronze Age. Interestingly, there are no fully-excavated sites known during ECA I, from the Younger Dryas to c. 9,000 cal BC. ECA II lasts from c. 9000-7200 cal BC with Aşıklı Höyük, Musular and Canhasan III as type sites. Lithics are dominated by obsidian, buildings are rectangular, bi-polar core technology is known, and resources are still wild. ECA III (late 8th millennium-6,000 cal BC) is distinguished by the appearance of pottery and agriculture (after Özbaşaran and Buitenhuis,

CANeW). As this terminology is so regional, it will not be used in this study, but it is worth mentioning as two of the case study sites (See 4.8) are in this region.

Central Anatolia - Cappadocia The burned deposit near the visible base at Aşıklı reliably dates back to 8300 cal BC, though the lowest levels had not yet been reached. The sequence continues to 7600 cal BC (Thissen 2002: 325). Aşıklı höyük, dated to the mid-9th millennium cal BC by charcoal and rectilinear architecture, is firmly within the PPNB (Todd 1968: 157; 1980: 149; Esin 1995: 144-146).

The three similar dates from Musular fall between 7600 and 7200 cal BC (Cessford 2001; Thissen 2002). Both Musular and Aşıklı were abandoned in the mid 8th millennium, and nothing is known from the area until about 6000 cal BC when occupations are dated at Köşk höyük and Tepecik-Çiftlik (Bıçakçı 2001), though both were inhabited prior (Fig. 4.12). Nine dates from juniper charcoal place Köşk between 5300 and 4720 cal BC, corresponding to the transition from the Ceramic Neolithic to the Chalcolithic (Düring 2010: 148).

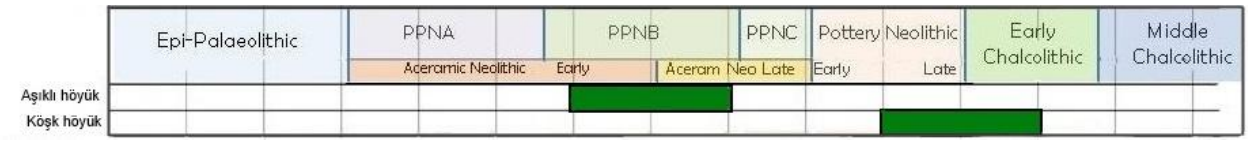

Figure 4.12: Radiocarbon dates for sites from Cappadocia. References are listed in Appendix 2.

Central Anatolia- Konya Plains

Three dates from the open area of Pınarbaşı A gave a range of dates from 8540-8230 cal BC (CANeW), though the rock shelters may possibly be earlier (Fig. 4.13). Both areas yielded materials dating to the 9th mil cal BC (Baird 2003). The later area of Pinarbasi B yielded dates between 6400-6230 cal BC (CANeW).

The earliest levels at Çatalhöyük East (level XII-IX) date between 7300 and 6800 cal BC. The most recent levels (levels VIII-II) date between 7200 and 6400 cal BC (Aurenche *et al.* 2008). The basal layer of Çatalhöyük West dates to 5990-5810 cal BC (CANeW). 16 dates from the earlier mound of Can Hasan III fall between 7650 and 6600 cal BC, while the single published date from the later Can Hasan I falls between 5320 and 5070 cal BC (CANeW). The roughly contemporary site of Guvercinkayasi is dated by ten samples to 5210-4850 cal BC (CANeW).

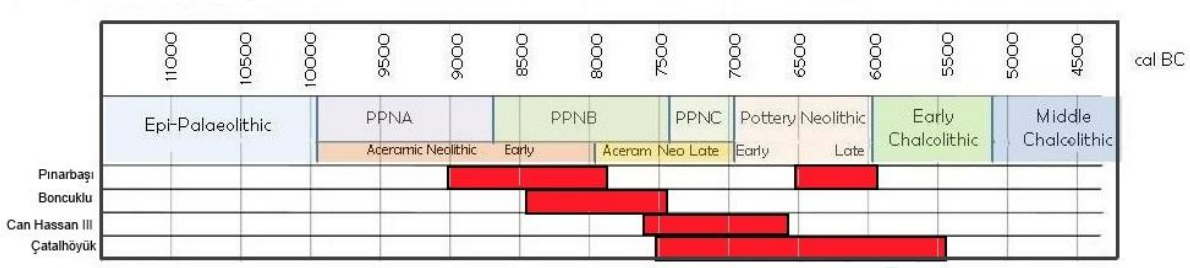

Figure 4.13: Radiocarbon dates for sites from the Konya Plain. References are listed in Appendix 2.

Central Anatolia- Lake District

Duru suggests dating Höyücek as follows: Early Settlements phase 7000-6550 cal BC; Shrine phase 6500-6000 cal BC; Sanctuaries phase 5900-5700 cal BC; and early chalcolithic after 5600 cal BC (Duru 2005: 228). 3 dates from charcoal, all from the "Shrine phase" provided dates of 6480-6100 cal BC (TAY 2003), though architectural similarities with Hacılar (double thickness of mudbrick walls, tree branch frames in thinner walls, and rectangular ovens opposite the door) would suggest an earlier date (Fig. 4.14).

Seven calibrated radiocarbon dates from charcoal found in the Aceramic levels of Hacılar date to 8200 – 7550 cal BC (TAY 2003), while the five good dates from Level VI range from 6600-6200 to 6300-6000 cal BC.

3 calibrated bone dates from Kuruçay date to 6200-5800 cal BC across three levels (TAY 2003).

The six dates from across level III at Suberde can be combined to provide a range of dates in the mid and late 8th millennium cal BC, with a sum of 7400-7000 cal BC (De Cupere and Duru 2003). Only one reliable date comes from Erbaba, falling around 6500 cal BC from its basal level (Bordaz 1973). There is much material from the upper half of Erbaba that is clearly linked to the late Neolithic at Hacılar, such as figurines and sherds. The sum of dates for Erbaba is 6690-6440 cal BC (Özbaşaran and Buitenhuis 2002).

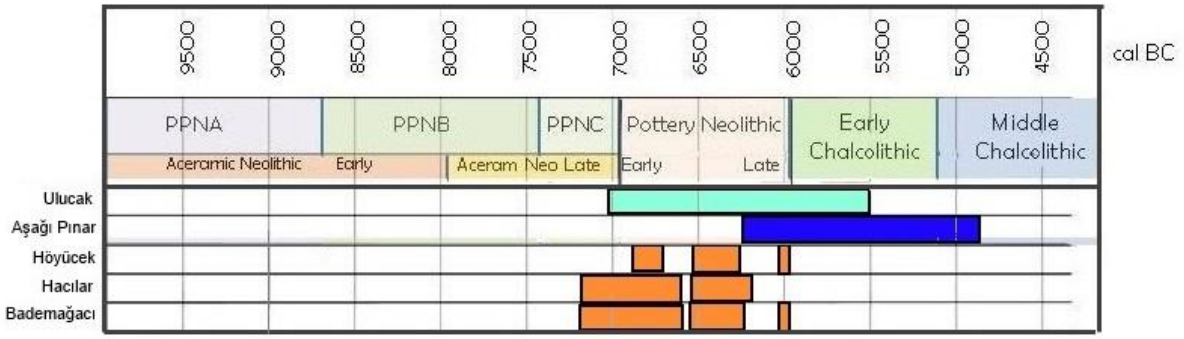

Figure 4.14: Radiocarbon dates for sites from the Aegean region (sea green), Thrace (blue) and Lake District (orange). References are listed in Appendix 2.

The *Thracian sites* tend to be later in date (Fig. 4.14). Hoca Çeşme is largely dated by pottery, though absolute dates from level IV give 6500-6100 cal BC (Thissen 2002).

Four charcoal dates from Bademağacı provided dates for the following levels: level 8: 7050-6075 cal BC; Levels 4 and 3: 6450-6270 and 6380-6250 cal BC; and Level 1: 6220-6080 cal BC (TAY 2003).

Ilıpınar's earliest occupation dates to 6000-5900 cal BC (Roodenberg 2008: 1). A total of 66 radiocarbon dates were processed, creating a nearly unbroken sequence across seven phases, including 19 building levels.

Aşağı Pinar is placed by nine carbon samples and one cereal sample from level VI (Özdoğan 2007). The sum of the level VI dates yields 5840-5510 cal BC (Özdoğan and Schwarzberg 2008: 20-21).

The *Aegean* sites also tend to be later in the Neolithic (Fig. 4.14). Ulucak höyük was settled without breaks between 6800-5700 cal BC. A sample from the red-coloured lime plaster floors was dated between 7000 and 6600 cal BC (Özdoğan and Başgelen 2007).

To conclude, there is no single set of accepted terminology that is relevant across the entire study area. As such, occupation horizons are usually provided in calibrated radiocarbon dates. The earliest excavated sites tend to be in the eastern part of the study area, though this may well be due to previous assumptions about the location of the Neolithic (Lloyd 1956). An understanding of chronological context is crucial to a study of ritual, as we then may be able to trace developments in ritual or depositional activity over time.

For the purposes of the database manipulations in this study, I will use the term PPNA (knowing full well that it usually denotes a specific cultural assemblage) to refer to the period between 9500 and 8700 cal BC. I will use PPNB to refer to depositions and occupations between 8700 and 6900 cal BC, and PN to refer to any deposition after 6900 cal BC. The use of such broad chronological periods can be seen as problematic, especially as higher resolution is possible for many of the sites included in the study. However, the decision to proceed with a low resolution was taken in order to allow for depositions that were only chronotypologically dated, as well as those from sites excavated before more rigorous recording techniques became standardized. These broad comparisons set the stage for future, higher-resolution ones that are not within the scope of this inquiry due to time constraints.

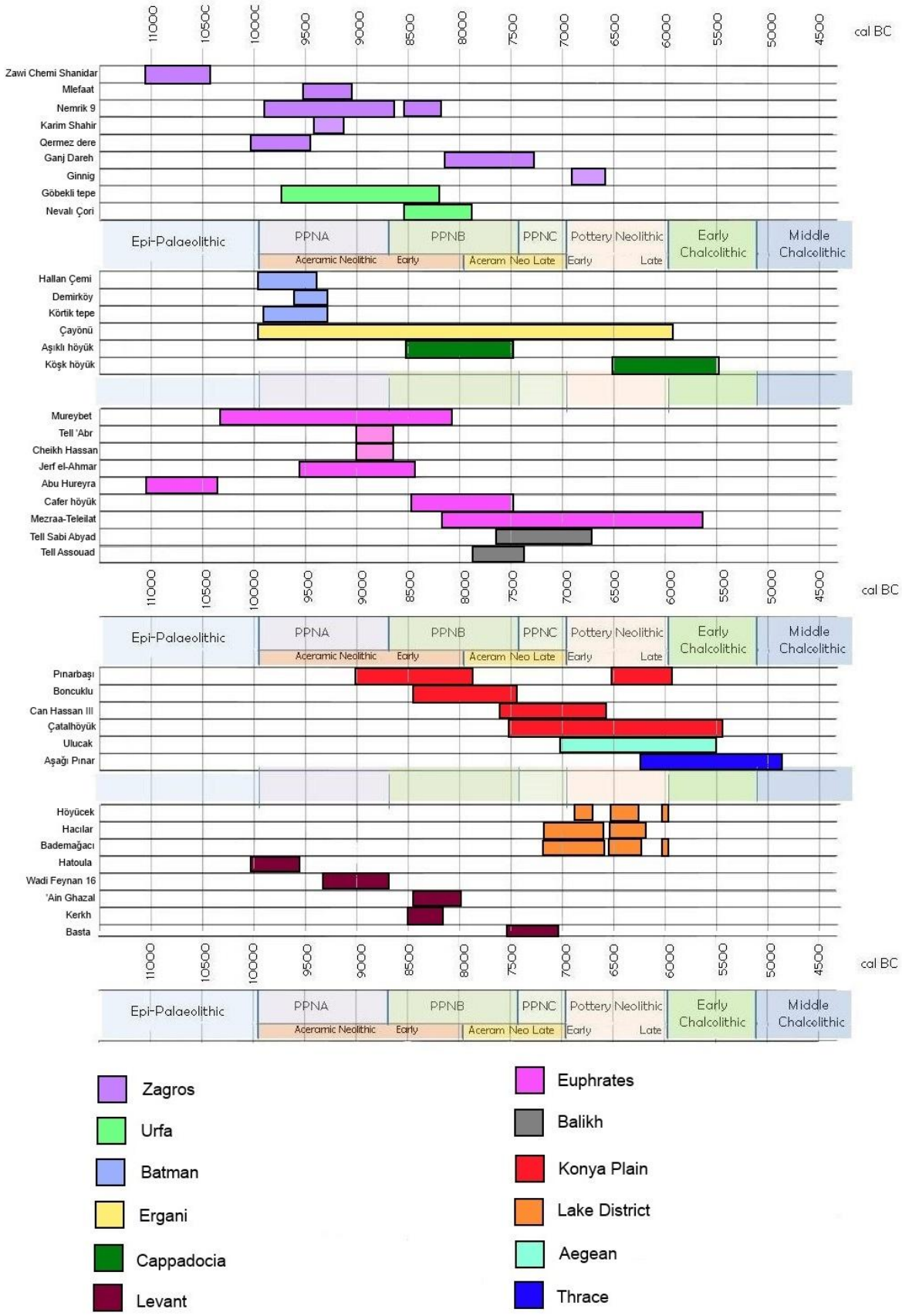

Figure 4.15: Radiocarbon dates for the sites in the database. References are listed in Appendix 2.

4.5 Households

This chapter serves to investigate some of the major lines of inquiry concerning household organization and meaning in the Neolithic, with special attention to those aspects most relevant to ritual activity. Examining the fundamental elements of a house, its role in structuring the lives of its inhabitants as well as its symbolic connotations allows me to pose questions that I will be able to return to in later chapters. I will begin by discussing the household as both a home and as an economic unit, followed by the social and ideological implications of personal territory. I will describe the differences in the function of the physical house for the immediate purposes of the living, and the function to facilitate ancestral and social memory. The symbolic aspects of first structural, and then non-structural elements of a house will be considered. Following a discussion of the meanings and decisions involved in the construction of a permanent shelter and possible indications of sedentary behaviours, I will conclude with a discussion of communal and non-domestic structures. An exploration of these ideas can shed light on the decisions made with respect to the location and meaning of ritual activity.

The erection of the first permanent shelter meant more than simply protection from the elements. The walls that enclosed a community or family group delineated territory, giving rise to privacy, gossip and the control of information. The creation of specific spaces within the larger territory facilitated site-specific ritual, and the structure itself came into possession of a sacred or symbolic meaning. Some permanent structures were inhabited year-round, and were partitioned into smaller areas; each with a specific function and meanings. The behaviours and meanings associated with households both shaped and were shaped by the world-view of those who built and inhabited the households. In this section, I will address the meaning of structures in the early Neolithic, using more modern ethnographic analogies as well as evidence from archaeological investigations.

Household economies came to the forefront during the PPN (Flannery 1972). During the PPNA, the role of a structure changed ideologically to become a *home* for family, centre of activity, and symbolic of their values (Watkins 1990: 337). This departure from the economic interpretation of anthropologists (*e.g.* Flannery 1972; Wilk and Rathje 1982; Smith 1987) allowed archaeologists to expand the definition of the household to encompass more of the problems that arise from a physical investigation of remains. While broadening the scope of inquiry beyond the purely economic aspects of households was fruitful, the use of the term *home* is problematic in that it conjures modern biases. A more useful conception of a household is a: "...task-oriented residence, that combines aspects of economic production and consumption, is co-residential at some level, and is socially constructed around symbolically meaningful groups" (Kuijt *et al.* 2011: 503). It is important to consider that our modern conception of a household and household activity may not resemble the conceptions held by the inhabitants (Düring 2007: 162; Bloch 2010: 155).

The change in focus from the economic practices to the social implications of coexisting in households was spearheaded by Wilson's study of how settling down in houses "domesticated" people (1988). Hodder (1990) piggybacked on this idea to suggest that an ideological shift created a dichotomy between the house and the wild; the beginnings of the nature/culture divide. More

recent publications have focused on the ways in which this purpoted ideological shift affected the inhabitants of houses. Kuijt (2000) sees in the increasing compartmentalization of internal spaces the indications of ever-increasing social stresses of village and household life. Düring (2006) focuses on the interaction between social collectives and houses, using architectural and pathway reconstruction to propose neighbourhood and community organization in the Central Anatolian Neolithic.

Much has been said on the functions and purposes of households (*e.g.* Peterson 2002). Banning (2003) describes how households facilitate transmission of both physical objects and social information across generations. The Neolithic house has been analysed as a centre of ritual activity, a facilitator of social memory and identity (*e.g.* Kuijt 1998; Kuijt 1999; Hodder 1990; Tringham 1995; Rosenberg 2003; Banning and Chazan 2006; Cauvin 2000; Pels 2010)

Houses function not only as dwelling for the living, but also as ritual centres or ancestral houses for kin groups. Some clans in South-East Asia and Amazonia expend enormous expense to maintain an unoccupied building (Waterson 1997: 43; Politis and Saunders 2002: 125). Like the example of the fetish-houses of some Amerindian tribes, these ancestral houses are where the sacred clan heirlooms are kept, and are the site of many ritual activities. Larger houses which are inhabited by a crowd of people are "intimately bound up with the religious conceptions of its inhabitants, that it functioned not only as a dwelling but also as a sacred place for the community in general" (Nooteboom 1939: 222 in Waterson 1997: 38).

The elements of a house have their own symbolic significance. Body metaphors are frequent in many cultures, such as the Dogon, Barsana and Toraja, with the roof referred to as the head or ribs, and the paving as the feet or legs (Griaule 1965; Hugh-Jones 1985; Waterson 1988). Anthropologists prone to dichotomization associate the hearth with women, and the door with men. Micromorphological analyses of house floors at Çatalhöyük have shown that different parts of houses were treated differently; raised platforms were kept cleaner (Matthews 2005).

Just as a house could be identified with human parts, so too could the identity of a house be associated with individuals. Baird (2011: 235) points to an interesting correlation between strong household identity and objects that may symbolize individual identity. Ornaments and personalized tools often have strong connections with personal identity, and may comprise the paraphernalia kept in or associated with the maintenance of an ancestral or clan house.

Non structural elements are a very significant component to the physical house. It is from these that many suggestions of ritual activity come. The incorporation of animal elements into walls, floors, benches and niches could not all have been haphazard. There was a set of meanings embodied in the actions which produced and were reproduced by the installation of animal bones. The carved figures and horns before the men's house in a Bontoc Village (Luzon, Philippines) represent the old practices of taking human heads (Waterson 1997: 65). Architecture itself can be used as a mode of external symbolic storage, with meanings and symbolic representations coded into the built environment (Waterson 1998: 88; Watkins 2006: 7). Just as the forms and patterns of building choices can inform about past intentions, so too can the decorations upon the

structures. Plastered and painted walls are not rare across the Neolithic of the Near East. Wall paintings range from patches of colour to figural or narrative scenes. Even geometric patterns can be laden with meaning, or even express a "ritual use of symbolic iconography" (Marshack 1983: 112; Naumov 2010: 265). As the house possess its own vital force, it must be shown respect; both totally and to its parts.

The psychological separation from the elements may have been the first step to the sort of conceptual compartmentalization that led to the origins of agriculture (Waterson 1997:91). The creation of an artificial climate allows human persons to see their control over the environment, whether they choose to separate themselves is another matter. Some animistic Austronesian societies, such as the Iban, believe in a world soul that all life takes part of. Though they are agricultural, they believe each grain of rice has its own soul, which are combined into societies (Freeman 1970). Waterson's argument is that this exemplifies one of the many conceptual stages between being in the world, and being apart from the world.

The creation of stone structures indicated a symbolic shift to a more sedentary, permanent lifestyle (Boyd 2008). Mesolithic peoples that used permanent structures have been discerned in the Natufian period of the Levant, in the middle Euphrates, and in the Caucasus Mountains. For the thousands of years during which the process of gradual Neolithization took place, much of Eurasia was still home to wandering bands. Those in the mountains tended to remain in fringe communities, and retain their Mesolithic lifestyle far longer (Sherratt 2006; Kozłowski 1999: 25). The lack of technology associated with pottery indicates that those populations were either resistant to new technology, or had limited interaction with less conservative peoples. Certain semi-nomadic people used two kinds of structures; a summer tent, and a more permanent winter dwelling. The modern analogue are the Turkish yaylacılar, who live in black goat hair tents during the spring and summer, and return to their more substantial homes in the autumn to secure them for winter.

Archaeological indications of permanent settlement include: solid architecture, storage facilities, burials, heavy duty material culture, seasonality indicators of occupations at all seasons, commensual fauna and evidence of long-term settlement planning.

Many ground stone items were not exclusively used for food producing, as ochre on pestles and shaft damage point to. Heavy ground stone mortars, such as those embedded in floors, most certainly were not transported from site to site. This does not preclude the use or existence of several campsites with embedded mortars. To say that heavy material was never transported would be absurd. Indeed, raw material was often transported long distances, as is evidenced by obsidian cores and bowl and quern blanks.

The absence of heavy duty material culture is another indication that populations were at least semi-nomadic, especially in the light of mobile populations that left and periodically returned to base camps where their heavier goods were stored. It must be remembered that some European Gravettian structures, though designed by mobile persons, exhibited similar forethought in spatial usage (Kozłowski 2006: 48-9).

Large, non-domestic structures appeared during the early Neolithic (Schmidt and Hauptmann 2003). Both their "size and form implies communal activity" (Mithen *et al.* 2011: 352). To demonstrate common interpretations of these structures, I will discuss the identification and evidence for non-domestic buildings at three sites: Nevalı Çori, Çayönü, and Aşıklı höyük.

The nondomestic structures at Nevalı Çori are set apart from the domestic structures both spatially and through care of construction (Hauptmann 1999). They are placed to the west of the known domestic structures, and have a disparate plan. The second non domestic structure was built within the walls of the first, and took advantage of extant architecture. Both of these constructions show evidence of communal use in the stone-slab benches lining the walls and standing pillars both centrally and in the walls. The earlier structure, entitled Cult Building II, was constructed with a large niche in the eastern wall, so that attention directed beyond the niche fell upon the contemporary domestic structures.

Like the sequestered structure at Nevalı Çori, the two contemporary non domestic structures at Çayönü were set apart from the domestic structures, with the further inconvenience of the entrances facing away. The "Flagstone Building" existed throughout the Grill and Channel building phases (PPNA-PPNB), while the "skull building" was curvilinear throughout the Grill phases (PPNA), and re-built to a square plan atop the old building during the channel building phase (PPNB). After the second skull building was burnt, a building with a terrazzo floor was built 15 m to the north of the skull building, but with an identical orientation (final PPN). Both construction and contents of these three building support the theory that they were not used as houses. The importance of the Skull Building is attested by the multiple rebuildings in the same location, as well as the placement of over 450 secondary burials and possible presence of human blood (Croucher 2005: 614; Özdoğan 2012). Both the Flagstone and Terrazzo buildings had great care taken in the construction of their floors; with two pairs of parallel white limestone lines in the red floor of the Terrazzo Building, and two great standing stones set into the flagstones of the other.

At Aşıklı, two stone structures with an unusual plan stand out among the mudbrick houses. HV was a large open structure, possibly with columns or a bench lining the walls, surrounded by isolation chambers. Structure T had red-painted floors, benches and walls, an unusually large hearth and a drainage channel (Esin and Harmankaya 1999: 124).

In some cases, there are good arguments both in support of and against the non-domestic function of certain buildings. A good example is the largest structures at Hallan Çemi. Domestic accoutrements commensurate with the artefacts from other buildings were found in the two largest structures, in addition to the bucranium that had fallen from a wall opposite the entrance. For the purposes of the database, buildings with unclear functions like those at Hallan Çemi are classified as "structure-use unknown."

All of these buildings are often interpreted in terms of ritual activity, as they are framed with respect to domestic structures. However, this assumption is dangerous, as it precludes the unframed house itself as a location for ritual activity. The absence of domestic production equipment, the greater effort in construction and the presence of group seating or monoliths all serve to differentiate these buildings from the typical houses at each site. By making a distinction between domestic and non-domestic structures, as well as allowing for structures of unclear

function, the analysis of structured deposits gains in richness and complexity. Different types of objects may be deposited in structures which served separate purposes.

In conclusion, the concepts of permanent settlement, psychological separation, body metaphor and building use all enrich the dialogue concerning ritual activity in prehistory. For example, if symbolic divisions in houses can be identified, they may be reflected in the ritual depositions. Differences in the types of deposition found within, without or near structures may also shed light on the conceptual categorization of prehistoric minds.

4.6 Relationships with Animals

The purpose of this section is to investigate the major lines of discourse concerning animals in prehistory. Being neither human nor an accident of the environment, animals occupy a key discursive space, providing the opportunity for the deployment of a variety of meanings. In the previous chapter, the meanings of animals and their relationships to humans were discussed. This section will build on the previous treatment by considering in turn how the concepts of totem, taboo, masks, costumes, tattoos, herding, ritual use of remains, pets and domestication have been investigated by scholars focusing on the Near Eastern Neolithic. This will set the stage for a return to these concepts in the analysis.

Most of the discussions of totems in the Anatolian Neolithic concern the site of Göbekli tepe (Schmidt 2010). Representations of the totem animal and deposits of the totem animal's bones within or on structures can be archaeological indications of a belief in totems. At Göbekli tepe, the association of one major animal with each structure indicates a probable totemic relationship. 2 of the 3 decorated pillars in structure A have depictions of snakes, and the central pillars in structure B both show foxes. The PPNB Lion Pillar Building has the two eponymous pillars in the east wall. These foxes or lions could be interpreted as totemic icons, reinforced by lesser totems or mythical creatures on the surrounding pillars. The idea of a dominant totem is reinforced by the intentional deposition of a fox's tail at the base of a pillar with a fox relief (Schmidt: personal communication). The central pillars in enclosure D both appear to be wearing fox-tailed loincloths (Schmidt 2010: 243). However, systematic analysis of the figural placement does not support a totemic interpretation (MacBride 2011). Similar to the skins and tails depicted on the pillars at Göbekli tepe, the central pillars of structures at Nemrik 9, Nevalı Çori and Qermez Dere may have been covered with animal skins or simply been representative of a totemic animal.

The archaeological investigation of totemism requires a cross reference between animal representations and remains onsite. One would expect the remains of the totem animal in greatest concentration around the areas or structures associated with those groups. There may also be evidence for taboos associated with eating the totem animal. Russell (2012) suggests Hallan Çemi as a site for totemic activity, due to the presence of three sheep crania in a midden area, and one aurochs skull which was hung from a wall in a structure. The archaeological indications of sheep and aurochs remains do not fit the pattern suggested for totemic activity, as both sheep and aurochs remains are found with butchery marks.

Tabooed animals can be determined in the archaeological record in two main ways. The absence of an abundant animal in the archaeological record may be evidence of taboo (Marciniak 2005), or the presence of only small numbers of a few specific elements "used as artefacts or found in special contexts may signal a tabooed and ideologically important animal..." (Russell 2012). At Çatalhöyük, there is an abundance of representations of leopards: in reliefs, on paintings, on a stamp seal and as figurines. The skin is also shown as worn by some humanoids in paintings. Despite all these representations, only one single claw bone was found. The importance of the leopard is implied by the number and variety of representations, and the paucity of remains signifies a taboo (Russell *et al.* 2009).

Another possible case for taboo at Çatalhöyük is that of waterbirds. The settlement was in a very wet, marshy area, and representations of ducks and geese are not rare. However, the number of bird bones compared to the nearby site of Boncuklu is quite small. The abundance of waterbirds is clear from both the Boncuklu remains and the amount of recovered eggshell from Çatalhöyük, yet the relative paucity of remains suggests some cognitive interference. Deer remains are "extremely rare" at Çatalhöyük, particularly after the level XII occupation (Russell and Meece 2005: 223). Paintings of cervids appear in Level V, and become quite common in level III. The interaction of humans with groups of deer in wall paintings shows that the image of deer had meaning beyond that of a common foodstuff.

It is clear that 'what is good to eat' is not the same as 'what is good to think' (Lévi -Strauss 1964). Aurochs remains from Çatalhöyük show that while bones were significantly under-represented compared with sheep and goat, the amount of meat provided would have been comparable. Perhaps more importantly, the social significance of the animal is clear from representations and installations. Aurochs body parts were found in architectural remains across the Near East. A bucranium was buried in a bench at Tell 'Abr; a bovine rib was built into a hearth at Boncuklu; and bovine horn cores were buried in a specially-coloured wall at Mureybet. Bucrania were also displayed on shelves and suspended from walls, as at Hallan Çemi or Çayönü. Other species' skeletal elements were similarly displayed or used in installations. Goat horns were buried in a bench at Wadi Feynan 16; and a pair of wild sheep skulls was displayed in a niche at Ganj Dareh. Larger specimens were preferred for special treatment (Russell and Twiss 2009: 29). The use of the large, masculine horns in installations supports Cauvin's theory that the wild bull represented virility and masculinity to Neolithic people (2000: 125). While the repeated use of masculine elements certainly points to a symbolic interpretation, others have interpreted their meaning differently. Hodder (2006) discusses the use of hard and pointy bits such as horns, teeth and beaks as representative of danger, violence and untamed aggression. Later, Hodder and Meskell (2011:236) discuss the piercing ability of horns in order to argue for a phallo-centric interpretation of early Neolithic imagery. Russell and Martin point out that the aurochsen from Çatalhöyük had not been domesticated, and that a disproportionate amount of cattle bones were

associated with feasting deposits (2005)[4]. A focus on the larger, wild animals is also noted by Verhoeven (2002: 251-253).

There is very little evidence for mask-wearing at sites in the Near Eastern Neolithic. The majority of construction materials available are organic, and prone to decay. Heavier material, such as stone, is unlikely to be worn in quantity due to extreme discomfort to the neck. Funereal masks can be of any weight or material, as the wearer no longer complains. Fragments of limestone masks have been found at Basta, Nahal Hemar, and possibly other sites from the Judean Hills in the Levant (Bar-Yosef and Alon 1988; Nissen *et al.* 2004; Bienert 1990). Banning (1998: 227) sees these as far too heavy to have been worn, but may have been affixed to walls or posts as totemic symbols. The more complete mask from Nahal Hemar had 18 drilled holes around its circumference (Bar-Yosef and Alon 1988: 23-27). Unless the mask was affixed to the top of a post, the holes around the top of the mask are senseless. Asphalt patches along the rim with hair imprints about the crown, temples and chin indicate that the stone may have been the front of a larger headdress, designed to disguise more than simply the face. Were the mask used to cover the face of dead persons during the laying-out, it would have preserved a more pleasant image during rapid decay. The masks(s) may also have been used multiple times (Kuijt 2008: 182). Both masks from Nahal Hemar show evidence of several re-paintings with red and green stripes, which could indicate a change in presentation for each use. By the MPPNB, there was a strong focus on the human face (Kuijt 2001: 94). Figurines were more likely to have carefully modelled facial features, rather than a pinched, globular head. Human skulls themselves were treated to become ritual masks (Kuijt 2001: 86).

Turning to therianthropic representations, there is evidence from both Çatalhöyük and Nevalı Çori of creatures that appear to be human-animal hybrids. Birds and humans seem intertwined in several sculptures from Nevalı Çori, and there may be images of vultures with human legs at Çatalhöyük (Mellaart 1967:67). These may represent therianthropic creatures, or humans in costume.

The practice of wearing animal skulls is known from Bronze Age Crete and Iron Age Syria (see Chap 3). The two truncated bucrania from Boncuklu may have been worn as masks prior to their deposition; the odd cut of the lower portion would allow a space for a human head to be created. Another candidate for a skull worn as a headdress comes from Çatalhöyük. An oddly-truncated boar skull had certain cheek teeth knocked out and the mouth packed with wheat and barley (Twiss 2006). A lovely reconstruction by John Swogger shows how the wheat and barley may have held the skull to the wearer's head.

[4] While it seems that they have identified morphologically domesticated aurochsen in the latest levels, the aurochsen used in feasting deposits and in installations were wild (Russell *et al.* in press).

Figure 4.16:. c 2005 John Swogger

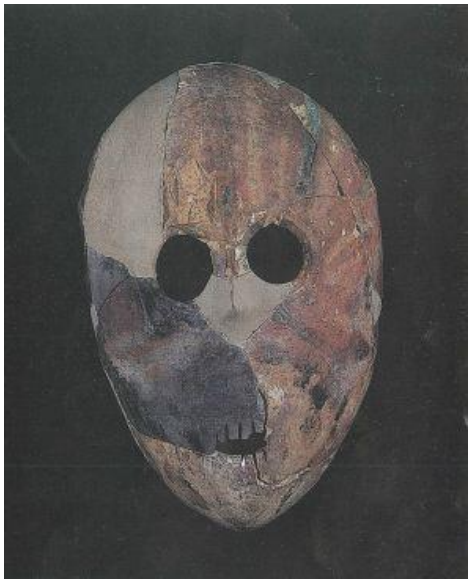

Figure 4.17: Mask from Nahal Hemar

There is much more evidence for the use of feathers and wings in costumed ritual. The dump of wings of predatory birds at Zawi Chemi Shanidar may have once been fitted for costumed dancing. As the wings were carefully cut off, without standard butchery marks (Solecki 1977: 44), it seems the minimum of 17 complete wings had some other use than alimentary satisfaction. The bird bones from Çatalhöyük are mostly the feather-bearing ulnae, which have no meat (Russell 2005). Storks (2005: 102); owls (107) eagles (102) and crows are almost exclusively represented by non-meat bearing bones, indicating another reason for their appearance at the site. Bird bones in general are scarce, and their use declines over time (99). The best evidence for wings worn as costume elements comes from a nearly complete crane's wing deposited with other unusual objects during the construction of Building 1 (Russell and McGowan 2003). The bones of the wing were incised in such a way as to allow a fibre to be passed through the skin along the radius (2003: 447).

The evidence for tattooing in the Near Eastern Neolithic is again scarce, if at all extant. Soil conditions do not lend themselves to soft tissue preservation. Depictions of humans with patterns on their skin are described from wall paintings (Mellaart 1970: 64) and from anthropomorphic figurines and statuettes (Mellaart 1967: fig 79). The best evidence for body markings come from palettes with ochre residue, and clay stamps that may have been used to temporarily decorate skin. Stamp seals of stone or baked clay are known from Çatalhöyük, Boncuklu, Hacılar, Çayönü, Höyücek, Bademağaci and Hoca Çeşme (Çilingiroğlu 2009; Baird 2010: 12).

Figure 4.18: Höyücek figurine with possible tattoo markings.

Figure 4.19: Stamp seals from Çatalhöyük.

Wearing animal remains as masks, amulets, and costumes was likely a part of Neolithic life. The transformations associated with shamanistic dance or spirit channelling was equally probable. The association of animals with transformative properties are clear from at least one Neolithic site, that of Körtik tepe. Within burials at Körtik, plaques with a single engraved figure, resembling, in my opinion, a butterfly emerging from a chrysalis, are found. Many other interpretations have been offered, such as dogs, goats, or bees (Özkaya and Coşkun 2011: 98). The "curls" at the top of the creature's head resemble the antennae emerging from the chrysalis, and the large circle where one might expect a face is too similar to the unfurling proboscis to overlook [See Figs 4.16 and 4.17] The depictions of spots on many of the plaques may show either the spiracles of the chrysalis, or the colouring of the emerging creature. While the most-commonly photographed eclosions are of Monarch butterflies (native to the Americas), other spotted species, including many of the Argynnidae, Lycaenidae and Satyridae are native to Anatolia (Baytaş: 2007). The lines along each side of the image may be lines of weakness along the pupa cuticle, or the folded wings as seen through a translucent chrysalis. The double zig-zag below the proboscis likely represents the first pair of legs to emerge. These plaques were buried with individuals, lending credence to the metamorphic quality of the imagery.

Figure 4.20: Monarch butterfly emerging from chrysalis. Note the curled proboscis, positioning of the open cuticle and legs, as well as the visible spots.

Figure 4.21: Plaques from Körtik tepe displayed "upside-down."

Another important transformation that occurred during the course of the Neolithic is the gradual alteration in the way humans and animals interacted. The transition to herding and domestication of wild animals is a crucial issue in discussions of ancient cognition. These changing relationships are an important issue in discussions of the Ancient Near East as the wild ranges of animals existed first in the study area.

Upper Mesopotamia is at the intersection of the ranges of many of the wild progenitors of the first managed animals (Zeder 1998). These animals had to have been tolerant of change and capable of breeding under pressure (Clutton-Brock 1999). The first managed animals are documented by female survivorship curves, and the kill-off of young males (Zeder and Hesse 2000). Morphological size diminution followed some 1,000 years after initial herding (Zeder 2006: 172). Penning could be inferred from pathologies associated with cramped conditions, and on-site butchery from body part distribution. During the PPNA, domesticates were only a minor part of the broad subsistence base, (Willcox *et al.* 2008) and were perhaps exploited for their secondary products (Sherratt 1981). There is evidence that populations differentiated between wild and domesticated animal parts for use in feasting and ritual (Twiss and Russell 2005).

The best evidence for keeping animals as pets currently comes from burials. At 'Ain Mallaha, a man was buried with his hand on the head of a dog (Davis and Valla 1978). The lamb buried next to a woman with many grave gifts at Çatalhöyük may have been an example of a pet, but the odd placement of the lamb and the matting which prevented skin contact points towards a different explanation (Russell and Düring 2006: 81). As the lamb from Çatalhöyük shows us, not all burials of complete animals were persons should be considered as evidence for keeping pets. The large pregnant ox from a grave at Basta would have been difficult to tame, and its gravidity makes for a double sacrifice (Becker 2002).

In conclusion, the relationships, meanings and uses of animals are crucial to a study of prehistoric ritual due to their important symbolic connotations. Animals and their varied attributes provide a broad range of symbolic and social connections that could be deployed in ritual acts. An insight into the relationships between humans and animals can help in interpreting the differences between depositions of animal remains or of objects depicting animals. This study may shed light on a range of transitional behaviours, one of which is the evolving relationship between certain animals and humans. The change to a herding lifeway may have been expressed in ritual acts, and may be visible in the depositional record.

4.7 Death and burial

This section will assess whether burials (both of bodies and of objects deposited with bodies) fall under the scope of this inquiry by first describing common mortuary practices in the Near East and then the interpretive themes used by anthropologists when discussing more modern mortuary ritual. Even if burials are not included as part of database, the discussion is certainly useful for setting the context for the study of other forms of structured deposition, as it is quite clear that burial are one particular form of a structured deposit. After a brief introduction, I will describe the diverse attributes and practices of Neolithic mortuary ritual in the Near East and then narrow the scope geographically in order to make statements about finds from the Levant, the Eastern Wing and from Anatolia. I will then discuss the interpretations offered for these acts, their relevance to the project at hand, and reach a conclusion.

Of the background issues underlying an understanding of the Near Eastern Neolithic, death, burial and mortuary ritual is prevalent in publications. An inquiry into one of the most well-preserved aspects of prehistoric behaviour prompts discussion of several themes still relevant to modern anthropologists. These include: pollution, treatment of corpse, mourning roles, land relations, symbolic opposition, the importance of rituals, and social versus biological death. Many quantifiable aspects of Neolithic mortuary practice, such as fragmentation, presence of grave goods, or location can inform these anthropological avenues of inquiry. For example, comparing the number of bodies per grave across a site could bring up issues of community, regrouping, pollution and ancestry. It is crucial, then, to begin with an overview of common mortuary practice in the Neolithic of the Near East, then discuss the themes relevant to these practices, and finally situate these practices within the present inquiry. For a table of common mortuary practice, see appendix 5.

In contrast to the unpaved pits dug into abandoned structures from the Natufian (Bar-Yosef 1998: 164), mortuary practice during the Neolithic was widely varied in terms of location. Many inhumations were placed under the floors of residential structures, as at Boncuku, and Çatalhöyük; and cemeteries are known from Nemrik 9. The first purpose-built structures for communal burial are found in the Neolithic. Nearly 400 disarticulated skeletons were found in the “skull building” at Çayönü (Özdoğan 1999). '*La Maison des Morts*' at Dja’de contained 59 human skeletons (Coqueuniot 2000), and at Abu Hureyra a possible mortuary structure was identified with the remains of over 50 individuals (Moore and Molleson 2000).

The wide range of burial locations was not restricted to structures, and was rarely uniform across a site. At both 'Ain Ghazal and Jericho bodies were buried in courtyards, middens, as well as at other locations (Rollefson *et al.* 1992). At some sites however, such as Aşıklı and Halula, burials were only found in houses (Guerrero *et al.* 2009). Between the PPNA and PPNB, the locus of burial activity narrowed almost exclusively to domestic structures. While a great majority of burials were found under living floors, burials have also been found in bench, walls, under foundations. Within the house, there is great variability in burial location at Abu Hureyra, yet at Halula, all persons are buried at the entrances to structures (Guerrero *et al.* 2009: 387). Some settlements display a preference for burials at certain cardinal or symbolic locations, as at Çatalhöyük, where burials tended to be in the "clean" or northern part of the house (Hodder and Cessford 2004: 22).

Burials were often of single persons, or of multiple bodies in the same pit. Single, primary burials are the norm at many sites (Çatalhöyük, Boncuklu) and multiple burials are known from many sites as well. In a few cases, individuals are buried with animals; such as a lamb at Çatalhöyük (Russell and Düring 2006); a pregnant aurochs at Basta (Becker 1999: 73); pig remains at 'Ain Ghazal (Rollefson and Köhler-Rollefson 1993: 38); or a dog at Çayönü (Özdoğan 1999).

Burial marking is a common practice, especially as people often continued to live on and with their dead. At the earlier cave sites of Nahal Oren and Hayonim, cupholes pecked in rocks marked graves (Belfer-Cohen 1988). Clay plugs at Halula were placed to fill the pits dug into the floors (Guerrero *et al.* 2009). At Kfar HaHoresh, small posts were inserted into the plaster surfaces above burials (Goring-Morris 2000), while at Çatalhöyük, the plaster used in the platforms under which there were burials was often whiter than the plaster used for surrounding surfaces (Hodder and Cessford 2004: 22). The practice of marking the floor with red paint at 'Ain Ghazal likely served as a reminder for later re-opening of the grave for cranium removal (Kuijt 2001).

Primary burial is permanent, but secondary burial requires planning and social sanction to implement perpetual rebirth (Kuijt 2008: 175). The location of secondary skull burials in the PMMNB Levant differed from those of primary burials (176). The position of the body within the grave also varied between sites and graves. Most inhumations were placed lying on one side, often flexed in the hocker positions. One clear exception is at Halula, where vertical pits were dug and bodies were placed in a seated position. Seated burial also known from Ilıpınar and Qaramel. In order to facilitate the placement of a large body in a small pit, bodies were sometimes wrapped in matting, as at Wadi Feynan 16 and Çayönü. At Köşk, evidence for matting appears on treated skulls.

Skull removal is seen at a few Natufian sites, but these are largely considered the precursor to a Neolithic practice (Bar-Yosef 1998: 164). Pits were dug into burials to retrieve skulls once decomposition had loosened the sinews (Andrews *et al.* 2004). Much has been said about the evidence in favour of a "skull cult" during the PPNB (*e.g.* Bienert 1991), but it is clear that the majority of bodies were not selected for special treatment or even on-site burial (Goring-Morris 2000: 116). The timing of the ritual cycles involved with the removal, treatment and re-burial or display of skulls has been put forward by Kuijt (2008). Secondary burial of removed skulls is found at sites as widely varied as; Nemrik, Nevalı Çori, Hacılar, Boncuklu, Tell Sabi Abyad, Köşk and Çatalhöyük. Caching, or nests, of skulls are known from Qermez Dere, Cheikh Hassan, Nevalı Çori

and Aswad. The practice of plastering, or "re-fleshing," skulls is common at PPNB sites from the Levant to Central Anatolia, as at Jericho, 'Ain Ghazal, Beysamoun, Tell Aswad, Tell Ramad, and Körtik tepe.

The reason for these practices may never be certain, though some of the more popular theories include: ancestor worship (Kenyon 1960: 53); the completion of skull deformation practices that had been initiated during the lifetime of the individual (Arensburg and Hershkovitz 1988); the preservation of ritual practitioners (Kuijt 2002); the veneration of specific individuals (Simmons *et al.* 1990: 109) and even the facilitation of the end of mourning through the constant presence of the deceased (Kuijt 2008: 172).

It may be that a combination of these theories is correct, or that the meanings associated with the plastered and displayed skulls were in flux. Skulls could be modified and re-painted several times (Bar-Yosef and Alon 1988: 21–23). The changing features of some treated skulls argues against the individual identity of the modelled face, as does the formal stylization of many of the skulls, such as those from Aswad (Stordeur 2003). Kuijt (2002) suggests that the identity of the plastered skull was important for a limited time, then became communal once nested with other skulls.

Mortuary practice in the *Levant* is rare, but known, from the end of the Paleolithic just prior to the Natufian (Byrd and Monahan 1995). Sites such as Kharaneh and 'Uyun al-Hammam have burials which are single, primary, and usually away from living areas. Durable grave goods are rare, occasional stone tools or pendants are known. Notable exceptions include: Burials involving acts of structured deposition include: a single, primary adult male from Kharaneh interred with two gazelle horn cores above his head (Maher *et al.* In press); dogs and gazelle horn cores with three human burials at Hayonim Cave (Tchernov and Valla 1997); a single, primary adult female buried below a living surface with three gazelle horn cores from 'Ein Gev (Arensburg and Bar-Yosef 1973); and fox remains transferred from one multiple grave to an adjacent multiple grave at 'Uyun al-Hammam (Maher *et al.* 2011).

Burials associated with Natufian cultural assemblages are widely varied in terms of position, number, sex, arrangement and age of bodies. In general, burials are in pits, either shallow or deep, and within the settlement area but away from living areas in use. Some trends between earlier and later sites are possible to see. Multiple burials are more common in the Early Natufian, while secondary burials increase by the Late Natufian (Belfer-Cohen and Goring-Morris 2011). Postmortem skull removal begins in the Late Natufian, and is known from sites such as Hayonim Cave. Burials are generally sunk into abandoned structures or pits. Early Natufian burials at Mallaha had rich grave gifts, as well as the primary burials from Hayonim Cave, though later burials from both Mallaha and Hayonim Cave had no grave goods. The late Natufian at Nahal Oren had a specially designated area for burials. No evidence of social stratification can be found through demographic analysis of burials (Parker-Pearson 1999), despite varied evidence for excarnation, burials covered with stones or limestone slabs, or associated with broken mortars.

> Besides the individually decorated burials of the Early Natufian (making up ca. 10% of the total burials), there are also unique burials of the kind exposed at Late Natufian Hilazon Tachtit: the "shaman" burial (Grosman, Munro, and Belfer-Cohen 2008) or the "gazelle-horned" individuals in Grave 10 at Eynan (Perrot and Ladiray 1988). The joint human and dog burials observed at both Eynan and Hayonim Terrace represent another unique mortuary practice presaging later developments (Davis and Valla 1978; Tchernov and Valla 1997).
>
> - Belfer-Cohen and Goring-Morris 2011: S212

During the PPNA, mortuary variation exploded. Inhumation was usually single, and associated with or beneath the floors of buildings. Caches of crania and skull fragments are widely found (*e.g.* Jericho, Netiv Hagdud), and both wrapping and plastering of bodies is known (*e.g.* Wadi Feynan 16) (Finlayson *et al.* 2009).

Mortuary practices during the PPNB in the Levant continued to focus on homes. Skull removal is known from many sites, including Basta, Beidha, 'Ain Ghazal, Jericho, Beisamun, Nahal Oren and Abu Ghosh. Modelling of faces onto removed skulls is known from Assouad. Secondary burial practices across the PPNB point to careful planning by communities (Kujit 2002).

By the end of the PPN, attention to mortuary practice waned. Multiple burials became more common, as well as multiple internments in the same pit. Decapitation became rare and burials in jars appeared.

There is not enough evidence from sites dating to the Zarzian to make generalizations about burial practices in the *Eastern* flanks of the Fertile Crescent. More evidence from Neolithic sites allows for generalization. Grave good were rare, but appeared in the form of ochre sprinkled on bodies (*e.g.* at Asiab and Ganj Dareh) (Braidwood 1961; Smith 1972). Some of the more idiosyncratic aspects of Levantine PPNA burial practice are found this far south, including matting around a skeleton. Some particularly Eastern practices include ossuaries, and the creation of mud-walled cubicles within houses for bodies. At the site of Ganj Dareh, only children and adolescents had grave goods (Smith 1974).

Burial practices in Anatolia are known from the end of the Palaeolithic, with a few flexed inhumations at cave sites near the Mediterranean. Later burials share many similarities with the Levantine PPNA.

No burials are known from the earliest PPNA-contemporary site in Anatolian Upper Mesopotamia; Hallan Çemi. The earliest levels at Çayönü had bodies buried in pits dug into house floors or courtyards. Grave gifts were rare, sometimes including ochre. By the grill building phase at Çayönü, bodies were buried between grill walls or beneath the central room. Burials were both single and collective, and were laid on the right side. Grave goods became more common, especially ground stones. A dog burial and a boar skull were placed near the burial of an adult male between grills. During round and grill stages, primary burial was the most common. (Özdoğan 1999) By the cobble-paved building phase, pits full of bones were common in open areas. A special

building was dedicated to the preparation of secondary burials and display of skull on shelves. Many secondary burials with and without skulls, grave gifts, and a burial within a bench were found in this 'skull building'. By the end of occupation at Çayönü, no human remains were recovered in or near the large roomed buildings, denoting a distinct change in the mortuary practices (Yılmaz *et al.* 2000).

6 human and 2 canine burials were uncovered at Demirköy. The humans were flexed, on the right side, but otherwise rather varied (Rosenberg 2011: 83). Over 450 burials from Körtik tepe have so far been recorded (Özkaya and Çoşkun 2011: 93-4). Most are intramural, under the floors of houses, and have considerable grave gifts. Many have been smeared with plaster, either before or after the decay of flesh, and painted with bands of red and black ochre. Grave gifts are often intentionally broken stone bowls, completely covering the burial. Ground chloritic stone with incised figural representation is found exclusively in graves. 16 bodies were found with tortoise shells covering their face. Interestingly, those burials with tortoises never have the chloritic image of a butterfly emerging from a chrysalis (Benz 2012, pers. comm.).

The earliest levels at Göbekli have yet produced no burials. The similar site of Nevalı Çori produced both skulls and partial skeletons from its earliest levels (Hauptmann 2011: 91). Most complete inhumations were flexed and either in the foundations of structures, on buried under floors.

The Konya Plain sites tend to have burials in pits, under the floors of houses, sometimes wrapped in matting. At Pınarbaşı, during the Epiapalaeolithic, only two damaged skeletons were recovered; one with a tortoise shell full of ochre and shell beads near the skull (Baird *et al.* 2011). During the 9th millennium, there were several flexed burials, none of which were found under houses but in a cemetery (Baird 2012: 194). Burials at Boncuklu were laid in pits dug into the floors of houses, yet much human skeletal material is found mixed in with the middens (Baird *et al.* 2012: 225-227). One female skull was found in an unstratified pit. At Çatalhöyük burials are almost always under the floors of houses. Some heads were removed and interred as part of foundation or abandonment rituals (Hodder 2012: 252).

Two flexed inhumations were found at Cafer höyük; one covered by a large stone, the other by white plaster (Cauvin *et al.* 2011).

At Aşıklı, bodies were buried in pits under house floors, in varying positions; thought most often tightly flexed and wrapped in mats (Özbaşaran 2012: 138; Esin 1996: 2). Over 400 rooms have yielded 70 bodies (Esin and Harmankaya 1999: 126). In contrast, most of the burials at Köşk höyük were found in houses, and very few are of adults (Öztan 2012: 35; Özbek 2009). Burials are re-opened for decapitation and plastering without bias towards age or gender. Finished skulls are displayed on benches.

At Hacılar no burials were found within the settlement during the Aceramic Neolithic, so there was likely an extramural cemetery. However, many human skulls were found on floors or near ovens (Mellaart 1970). Three burials were found from the burnt layer VI, two together with gifts, and one alone, without.

At Eastern Marmara sites such as Ilıpınar and Menteşe höyük, bodies were buried within the community land, either at the edge of the settlement, in courtyards, or dug into a built-up area in single pit graves. Burials were primary, and so tightly flexed that they must have been wrapped. Occasionally bodies were placed on wooden boards, or with simple grave goods. (Roodenberg 2008: 48). Occasionally animal scapulae or mandibles had been placed on the interred (46). Many of the dead at Ilıpınar were infants or juveniles who had succumbed to anaemia, probably caused by malaria (47).

4.7.1 Discussion of burial practices

Quantifiable aspects of the preceding methods of body disposal can inform as to the symbolic worlds which produced them. The number of bodies in a grave, or distance between single graves or graves and houses or other buildings may shed light on ideas of pollution, and the extent of the power of pollution. The location of bodies within a site or a home elicits discussion of ancestral land relation, gendered areas, landscape interactions and community involvement. The intentional fragmentation of bodies informs the concepts of reincorporation with society or the land, as well as the existence of an afterlife. The positioning of bodies, whether extended, oriented to some cardinal direction, or crouched prompts debate as to space-saving, utilitarian positioning or the symbolic foetal birthing position and the pollution of biological birth. The presence of ochre on some bodies informs discussion of gifts, transformation, symbolic opposition of colours, and preservation of bodies (I liken ochre to gold in Egypt, which was used by the pharaohs in mortuary preparations as it never tarnished or lost its lustre. Any archaeologist can see the durability of ochre). The preferential treatment of skeletal elements produced ideas of rank and demography, transformation, social *versus* biological death, the importance of the past and the landscape, as well as questions of those who prepared and treated these bodies. Special types of grave goods, such as beads, inform as to appropriate mourning roles, gifting, and extending a living relationship beyond the grave. Others, such as broken stone bowls, elicit ideas of gendered roles (female knee pathology shows grinding a common action) and gendered power, community mourning (if every group were to bring one bowl), regrouping the ancestors, fragmentation, as well as protection and preservation.

4.7.2 Conclusion

The symbolic associations of items placed with inhumations range from a desire for the deceased to have access to important goods in the afterworld, as a method of communication or continuation with the living, to protection from ritual pollution as may be associated with biological death.

Due to both the ubiquity across and within sites that grave goods are found, and the subtle variations that require entire theses to be composed simply to analyze the patterns within single sites, the majority of grave goods are not included in the present discussion.

Similarly, inhumations are TOO common a practice, and not anomalous with respect to the standard practice of body disposal across a site. The shattered pieces of stone bowls which cover nearly every grave from Körtik tepe are certainly anomalous compared to other contemporary

sites, but not within the site itself. Thus those burials have not been specially delineated with respect to the other burials from Körtik tepe.

It is clear that the treatment of human remains was an important part of Neolithic symbolic life, but it is equally clear that this is not within the scope of the present study.

4.8 Case Studies

This section aims to describe in more detail the stratigraphy, material culture and analyses of a few of the sites that provide the best evidence for several different types of structured deposition. Each case study site has been chosen for a particular set of reasons. Hallan Çemi is a good example of an earlier site small with small structures around a central activity area, very common for earlier sites. It is one of the more extensively-excavated of earlier sites, provides a range of structural types and is relatively very well-recorded. Göbekli tepe is a spectacular site that has received a lot of media attention and therefore, funding for excavation. It was chosen as the monumental architecture across the entire site is evidence for communal ritual construction. The nearby site of Nevalı Çori, now underwater, was not chosen as a case study site even though it shares many common characteristics with Göbekli tepe. It was excavated quickly, and the types of ritual activities do not substantially differ from those found at Göbekli tepe. The occupation at Çayönü spans the time periods contemporary with the PPNA and PPNB, and is situated between central Anatolia, the North Euphrates and the Zagros mountains. There are great varieties of structures and depositions, as well as very clear evidence for ritual activity. Boncuklu is firmly dated contemporary with the PPNB, shows a very interesting sequence, and is currently being excavated with a range of investigative specialist techniques. Finally, the extensively-excavated site of Çatalhöyük, dated to PN, was selected as representative of sites contemporary with the PN, as it has examples of nearly every kind of ritual deposition described in section 6.1.

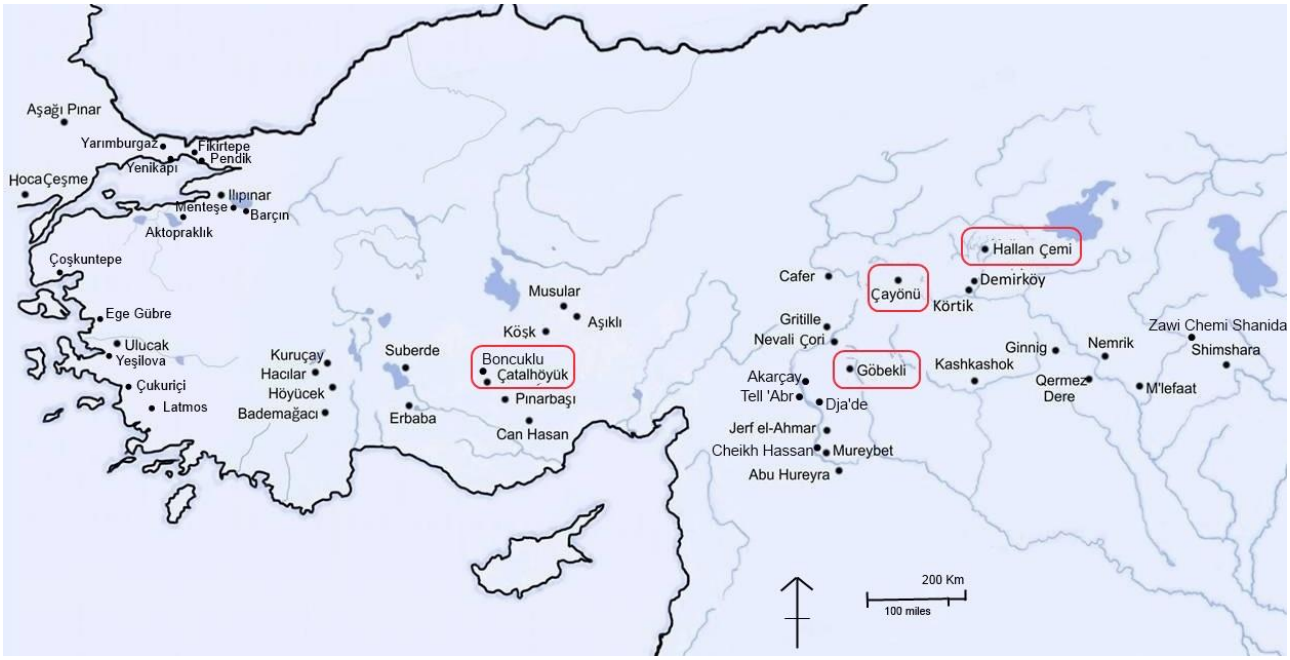

Figure 4.22: Map of Case study sites.

4.8.1 Hallan Çemi

Hallan Çemi is considered a transition site between the epipalaeolithic of the Zagros region, and the PPNA of Eastern Anatolia. As such, it's an important site for tracing the earliest Neolithic in Upper Mesopotamia (Rosenberg *et al.* 1995).

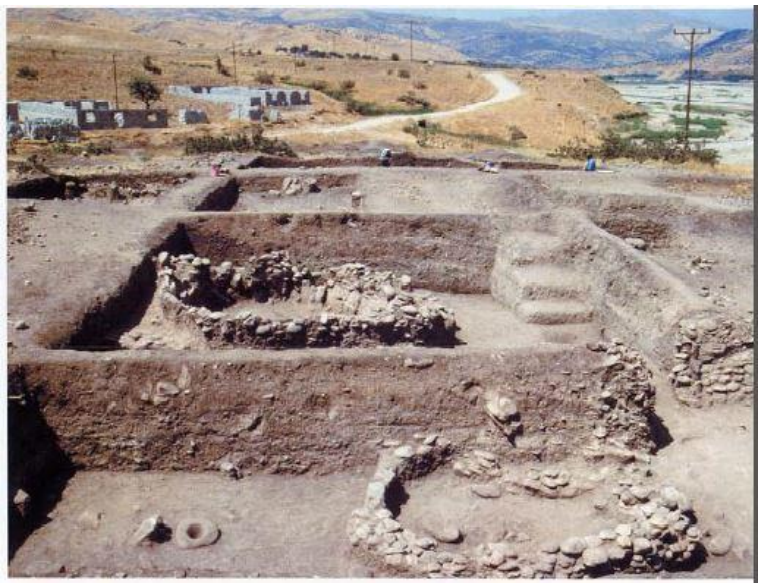

Figure 4.23: Round houses A and B from Hallan Çemi. Photo by B. Peasnall.

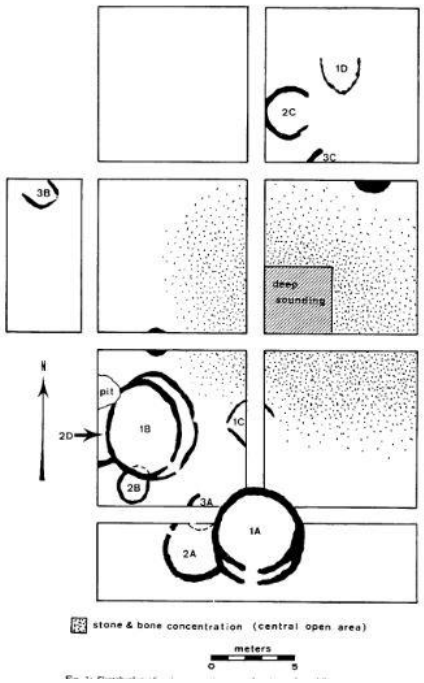

Figure 4.24: Building levels at Hallan Çemi. After Rosenberg 1994.

The uppermost three of four discovered Aceramic building levels were partially excavated between 1991 and 1994 by a small team headed by Mike Rosenberg. Each excavated level had an open area in the centre; a depression filled with bones and fire-cracked rocks. Many features were found in this central activity area: low raised plaster hearth boundaries; circular platforms made of stone, packed mud or plaster; as well as large and irregular expanses of plaster and postholes (Fig. 4.24). Numerous fragments of burnt wattle and daub impressions in mud indicated organic superstructures for these more temporary features (Rosenberg 1994). At each building level, different types of structures were found around this central feature. The lowest building level has three unpaved structures made of coursed river cobbles plastered in a U shape. Like the structures from the lowest building level, those of the second building level are also surface structures constructed with plaster-mortared river cobbles. Of the five total structures, only four were excavated. Of these four, three had floors paved with sandstone slabs. All four of the excavated structures from the uppermost building level are constructed from sandstone. Two are U-shaped surface structures, and two (buildings A and B) are fully round buildings with a doubled wall at the entrance. Both buildings A and B are between 5 and 6 m in diameter with a semi-circular stone bench or platform against a wall, gaps for posts and a U-shaped stone slab feature in the centre (Fig. 4.23). This stone feature may have served as a footing for a roof-post. The floors in both

buildings had been resurfaced many times with yellow sand and plaster. There are no burials on site (Rosenberg 2011).

The chipped stone industry was very unusual, with a dearth of projectile points; a huge number of microlithic geometrics; and a great proportion of obsidian pieces, most of which were quite small. Despite the high proportion of microlithic tools, most were the product of intensive re-use of obsidian. Blades were removed using indirect percussion, likely using deer antler tines as a punch. 129/135 geometrics were shaped as elongated scalene triangles, most similar to the assemblages from later cave sites along the Caspian Sea. Nearly all of the blades and pieces with retouch were made from obsidian identified by trace elements to have come from over 100 km away (Rosenberg 1999; Hughes 2010). Though the chipped stone industry foreshadows the later Trialetian industry, the ground stone implements resemble those from other early sites in the Taurus-Zagros arc. Obsidian is rare or even absent at Zagros Protoneolithic sites, which are at least 500 km from obsidian sources (Kozłowski 1994).

Mortars and querns are rare, and celts are non–extant. There was a great deal of re-use among ground stone tools: handstones re-used as nutting stones, and pestles curated after breakage (Rosenberg 2011). Common artefacts recovered included pierced stones, pestles and notched batons. Ornamentation was not uncommon on each of these types. Of special note are the fancy pestles similar to the so-called "gods" of Nemrik, and the hundreds of fragments of bowls made of a dark chloritic stone with perforated rims and/or incised decoration. Both geometric and figural motifs appear on the bowls, and foreshadow the mortuary use of incised bowls at Körtik tepe. Decorative vessels made of the same dark chloritic stone were recovered from the contemporary or slightly later round house subphase at Çayönü, and again from the Grill plan subphase. Nearly a third of the pestles from Hallan Çemi are fancy, with straightened shafts and/or decorated finials depicting goat's head, down-curving barbs and possibly a pig or bear. Other sites with fancy pestles include PPNA Nemrik, PPNB Çayönü and PPNA Demirköy (Rosenberg 2011; Peasnall 2000; Özdoğan 1999).

Subsistence evidence suggests that wild resources were exploited, though nuts and pulses played a more significant dietary role than small-seeded grasses (Rosenberg 2011; Savard *et al.* 2006).

The major issues that have come out of a discussion of this site revolve around the origins of sedentary behaviour. The debate as to whether the largest structures were used as communal structures rather than as residences is ongoing. Due to the hurried excavation, incomplete evidence for multi-seasonal occupation was recovered. Other issues concern the possible symbolic implications and uses of the fancy pestles and decorated bowls, as well as their connection to sites both east and west.

4.8.2 Göbekli tepe

Göbekli tepe is important not because it is representative of other sites, but precisely because it is not. The two main differentiating factors are its widely visible location on top of a hill, and the impressive monumental architecture (Fig. 4.26). Other sites in the Urfa plains (Karahan tepe, Hamzan tepe, Sefer tepe, Nevalı Çori) display iconography and sculptural styles similar to that from Göbekli, but this is the largest and only excavated non-residential sanctuary (Schmidt 2011; Hauptmann 2011; Çelik 2011).

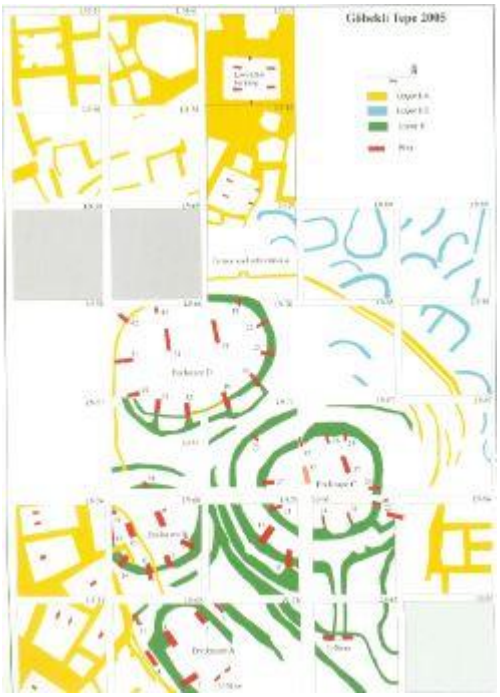

Figure 4.25: Building levels at Göbekli tepe. After Schmidt 2011, Fig. 2.

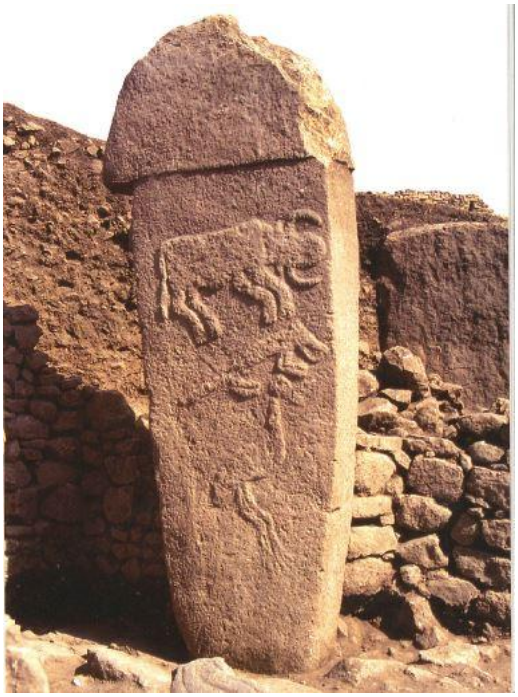

Figure 4.26: Pillar 2 from enclosure A. After Schmidt 2011, Fig. 14.

The earliest layer (IV) has yet to be fully excavated. It is thought to have curvilinear structures similar to enclosure G, as G had been cut by structures firmly placed in level III (Fig. 4.25). Level III had been dated contemporary with the PPNA, and bears 4 monumental enclosures. Each of these has T-shaped pillars arranged symmetrically and set into

curvilinear walls, with stone benches or platforms against the walls, and a pair of larger T-shaped pillars in the centre of the enclosure. The excellent preservation of these enclosures is due to the practice of backfilling with settlement refuse. 51 pillars have so far been discovered in level III with figures in both high and low relief. Of note are a net of snakes (A); male foxes on both central pillars (B); many boars but only one snake (C); and central pillars with anthropomorphic arms, wearing loincloths (D). Enclosure C is architecturally interesting for the 4 concentric rings of walls and pillars, while D - the largest enclosure – shows ancient damage that had been repaired during the Neolithic. Other, smaller, structures share some of the characteristics of the larger enclosures (Schmidt 2011).

Layer II dates to the E/MPPNB. Though the structures with pillars continue, their shape is much smaller and rectilinear, and the pillars decrease in both size and number per structure. Of particular note in Layer II is the lion building, which has the only clearly female depiction at the site, incised on a bench between two lion pillars. Another architecturally interesting piece is a huge "totem pole" set in the NE wall of a rectangular room with three carefully carved figures. This pole had been entirely covered by the wall (Schmidt 2011).

Porthole stones have been found in both Layers III and II. One side is completely smooth, and the other had a lip – or collar – around the central rectangular hole. A very large porthole stone was found in enclosure B (level III) in front of the central pillars, creating speculation that this class of artefact may have been positioned on the roof, rather than in a wall. A recently excavated double porthole stone is notable for three large animals carved in high relief. There are no burials on site (Schmidt 2011).

Many ground stone objects were found in filling debris, probably as offerings to pillars or closing deposits. There is evidence that several of these sculptures were once part of a larger pillar, or used as a protome. Limestone was also fashioned into large (50-100 cm) rings, game boards, as well as very large and heavy containers. There are a very few vessel fragments with incised lines. Incised decor also appears on shaft straighteners. Miniature T-pillars, figurines and one tiny mask are all shaped from limestone. No clay figurines have been recovered. Another interesting class of items are the "buttons" of greenish stone (Schmidt 2011).

Chipped stone tools are commonly found in the fill of buildings. Large oval scrapers with grooves like those on shaft straighteners are quite common. Cores tend to be bidirectional, and are often naviform. Chipped stone tools are almost entirely made of flint, of which there are plenty of deposits in the limestone foothills. While there are obsidian sources in the eastern Taurus range, they were not exploited at Göbekli tepe. The presence of Byblos, Nemrik and Helwan points indicates later influences coming from the south and east. However, the Epipalaeolithic microlithic assemblages common at the Antalya region cave sites are not present at Göbekli tepe, and no precursors to the PPNA have yet been revealed in the Urfa region. Of course, such a huge body of carved stone cannot be *sui generis*, so it is expected that survey will produce exciting results (Schmidt 2011).

There has been no evidence to support the practices of animal husbandry or farming since excavation began in 1995. The most common animal remains are of wild gazelle, consistent with what one would expect from a landscape "consisting of low undulating grassy hills and isolated stands of trees on the plateaus and mixed galley forests along the water courses..." (Schmidt 2011: 42).

The bulk of the early discussion concerning Göbekli tepe revolved around the monumental architecture and its implications in terms of manpower, community, symbolism, totemic clan identity, and ritual activity. More recently, the non-residential character of the site has been challenged, using ethnographic examples to show that art and ritual exist in houses (Banning 2011). Evidence to support to the non-residential character included a lack of roofing, occupational debris, hearths or food processing items (Schmidt 1999). However, more recent publications have drawn attention to possible depictions of roofed structures on Pillar 43 in enclosure D; the contents of the infill of the closed structures; offsite mortars carved into bedrock; and several large limestone objects from level II that could easily be mortars (Schmidt 2006: 229; Banning 2011). Further evidence to support the idea that these monumental structure were habitations comes from comparison with contemporary sites such as Nemrik 9 and Qermez dere, at which houses were thoroughly cleaned before infilling. As no clear answer has yet been reached, the structures from level III at Göbekli tepe are considered as "structure-use unknown" in the database. There is also ongoing debate about the inhabitants: whether they were hunter-gatherers, and if a significant shift in habitation and practice be seen between earlier and later levels.

4.8.3 Çayönü

Çayönü is famous for the length of both occupation and excavation. It was also one of the most important sites in terms of training the "new generation" of Turkish archaeologists. Occupation has been divided into four main stages, with different types of subphases. Each subphase was named after the dominant type of building or settlement plan.

PPNA Round house; grill building subphases.
PPNB Last quarter of grill building subphase, through channel building subphases.
PPNB Cobble plan; beginning of cell plan subphases.
PPNC End of cell plan and large room subphases.

During the earliest stage, structures are small, semi-subterranean round huts 4-5 m in diameter, very similar to the "Round House Horizon" of the Zagros. Rudimentary walls of reed bundles evolve to sturdier branches and sapling, and finally posts for support. The latest round buildings have stone footings and plaster floors, one of which was even painted red. The open areas between structures were used as activity areas, with fires and middens.

The architecture of the next phase is characterized by grill-shaped rows of unmortared stones which supported a raised floor to the north, and separated a central activity area from the southern isolated cells (Fig. 4.27). The central room often had a plastered floor and an indoor fireplace. Superstructures are still made of wattle and daub or basketry, and supported by large posts flanking the long sides of the building. Evidence for craft activities on the raised surfaces may have been due to flooding. During both the round house and grill building phases, Graves are placed in pits in the open areas or below the floors of huts. Burial gifts are rare. If anything is left with a body, it is ochre (Erim-Özdoğan 2011).

Figure 4.27: Examples of grill buildings from Çayönü. After Erim-Özdoğan 2011, Fig. 11.

The second major stage straddles the shift between the PPNA and the PPNB. The grills are rebuilt with a change in plan, as the settlement transitions to a rectilinear multi-room house. The central area is subdivided and most activities take place in or near the houses. The open areas are used a refuse dumps, and stone sidewalks appear alongside buildings. Another red painted floor is known, and buildings are symbolically buried with a layer of pebbles at the end of their use-life (Özdoğan 2011).

During the channel building subphase more space exists between buildings, and definite settlement planning is evident. The western area is exclusively residential, and the east communal, with special buildings and roasting pits dug into the abandoned grill buildings. The special buildings are semi-subterranean, with a buttressed north wall and standing stones. All buildings, regardless of function, have roofs of brush and reeds.

Mortuary practice undergoes a series of changes during this period. Graves are placed between the grill walls, then skulls appear in huts, and finally exclusively in the special building. Pressure flaking techniques and the Çayönü tool appears, while end scrapers and burins disappear. The diet is still wild, but there is evidence for the management of pigs (Erim-Özdoğan 2011).

During the third stage, raised flooring is given up entirely. Tripartite rooms are paved with cobbles. Open areas slowly diminish in size. A pebbled plaza with two rows of standing stones is created to the east with several special buildings to the south. Most burials are now in the skull building, in which two altars or large special stones appear: one made of pink limestone, the other, brown sandstone (Erim-Özdoğan 2011).

The next subphase of the third stage is named after the Cell buildings. These houses have little cells, second storeys, and flat roofs. There are closed courtyards between houses (Fig 4.29). The presence of several floodwalls suggests that the stream to the north of the settlement was rising or flooding more frequently. Outdoor working areas were moved further west as the pebbled plaza was enlarged. Evidence for cattle, deer and goats increases, as does evidence for the use of tempered clay. A particularly beautiful innovation is the terrazzo floor in one of the special buildings. Crushed pink limestone was poured on top of white limestone chips, mortared with lime and then burnished. There is a wide range of mortuary practice. During the course of this subphase, the tool set becomes standardized and an increased reliance on domesticated animals and cereals in seen in the archaeological record (Özdoğan 2011).

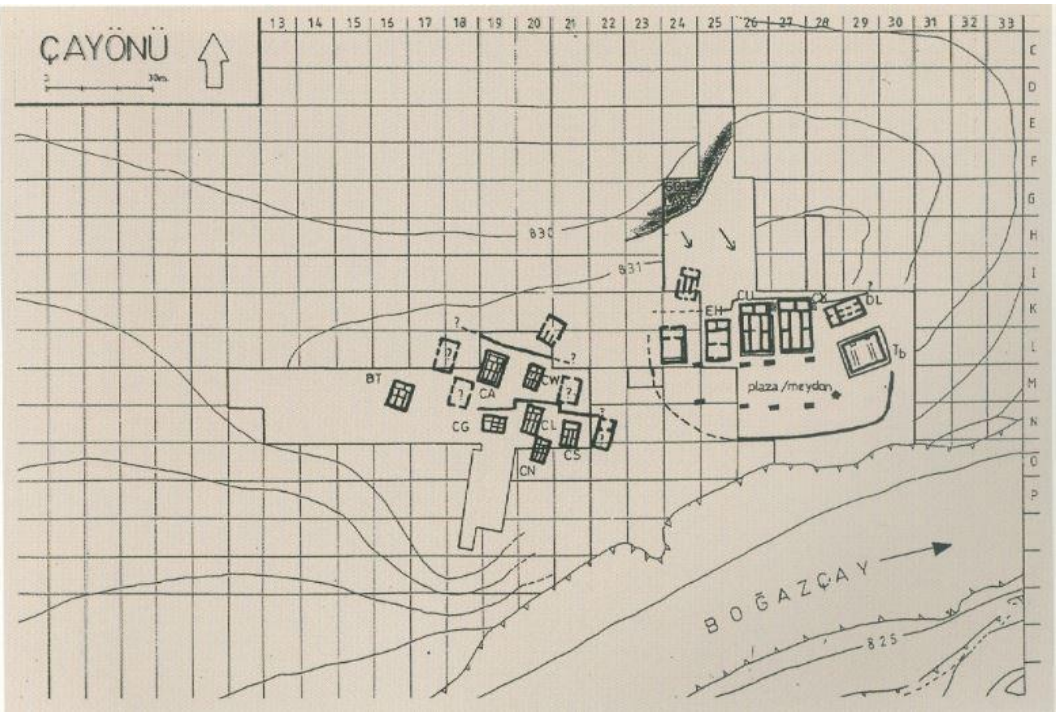

Figure 4.28: Buildings associated with the early cell phase. After Özbaşaran and Duru 2005.

The area near Çayönü is very rich in raw material. Basalt comes from Karacadağ; copper and malachite from near Cermik; marble and limestone from Hilar; and between 10 and 20 k distant are excellent sources of metamorphic rock, and flint. Legumes and cereals could have been found in the oak and juniper forests to the south (Erim-Özdoğan 2011).

The key questions involving the site of Çayönü concern the changing structures and orientations across the site, as well as the evolution of mortuary practices and their possible inclusion in a larger set of practices.

4.8.4 Boncuklu

Boncuklu höyük is important as it may shed light on the transition to species management. The 1 ha mound rising 2 m above the plain was discovered during the 2005 survey of the Konya Plain by Douglas Baird. Although it was one of several sites found in the southwestern part of the Konya Basin, the decision to excavate was taken as the surface finds indicated an earlier settlement with ties to the important and famous site of Çatalhöyük. Just as it will be crucial to investigate whatever site appears to be a precursor to Göbekli tepe in order to discover the origins and development of complex ritual activity, it was deemed necessary to excavate Boncuklu.

Figure 4.29: Location of the trenches at Boncuklu.
After Baird *et al.* 2012, Fig. 1

Figure 4.30: Post holes in Building 1.
After Baird *et al.* 2012, Fig. 7

Generally, buildings are ellipsoidal and made of mudbrick. They are of low density but clustered together. Several trenches were opened across the site, and will be described in rough chronological order (area K, then H, and then N) (Fig. 4.30).

In area K there was a series of 6 buildings on top of each other. They are all roughly 3x5 m with a hearth in the northwest. There is evidence for posts in the south but as these are ephemeral, they are likely non-structural (Fig. 4.31). In the southeastern area the floors are harder and thicker, and kept quite clean. Against the north wall and on the floor are the remnants of a painted red plaster relief.

The earliest building had a mix of brick and mortar or plaster lining a cut, so it was at least partially subterranean. The structure was narrow enough for a flat roof to have been possible. During the second building, the southeast area was deliberately built up to create an elevated space away from the dirty sunken area. The hearth was directly reconstructed, and red paint was found on some late floors. The final building had two phases. During the first phase the hearth shifted to the south, and there is evidence for clustered stakeholes around hearth. In both the second and final structures there is a painted plaster and clay relief on the North wall. Its shape changes over the course of at least 40 re-plasterings with paint.

In area H there is a sequence of 3 buildings which cut into each other, though without necessarily replacing each other. Buildings are set into a curvilinear cut, which is then thinly plastered. In the south wall of one building two bucrania had been placed as a foundation activity, before the walls were built right up to them. The plaster facing of the walls covered the faces of these bucrania. There is an interesting plastered feature with red ochre mixed in with the floor (not painted) in the final building in sequence. During the life of the building, the hearth (and therefore the dirty area) was moved, more resembling the situation at Çatalhöyük.

In area M there is an open-air midden accumulation with evidence of burning *in situ.* There are also tiny human skull fragments, suggesting that skulls were treated outside the buildings. There is also evidence for a flimsy structure on the midden that had been used over a long period and had been shaded with reeds, not roofed.

Area N is the considered the latest area, as it is stratigraphically the highest on the mound. B6 is the earliest known structure in this area. It is semi-subterranean, possibly entered via stairs. The northwestern area is sunken, with an elaborate and stone-lined hearth. It is divided from the southern area by a lip, into which a rib had been pressed. Posts are paired and used as structural support.

Chipped stone tools are mostly made of local (*i.e*. not East Anatolian) obsidian, which is intensively re-used. The industry is largely blade-based, though re-made forms are not coming here; production is on-site. Large projectile points have been found in the later midden/activity area. Pressure flaking places the lithic industry in the late Aceramic Neolithic.

Ornamentation of small or personal items made of ground stone is very common. Many of the decorated items are shaft straighteners. Stone sources are about 40 km away. Beads are common as well, made from stone and shell. Interestingly, *Theodoxus* and *Dentalium*, two genera commonly found pierced at Çatalhöyük, have been recovered, though there is no evidence for their use as beads. Clay objects are found all over the site. Clay found in middens tends to be geometric; discs or spheres, while clay bits found in structures often have reed impressions, suggesting their use as a sealant.

Subsistence remains point to an inordinate amount of bird, fish and tortoise. Aurochs and pigs are represented far more than sheep or goats. Crop plants do exist on site, though they have probably not been domesticated. Small wild seeds appear in every sample. Reeds were burned on site, and there is very little evidence of wood charcoal. The Bozdağ, at only 15 km distant, would have been a good source of woodland resources, including nuts (Baird *et al.* 2011; Baird 2006).

The key questions that arise of an investigation of Boncuklu are the origins of agriculture and herding behaviours, which could then inform the evolution of subsistence practices on the Konya Plain. An investigation of ritual activity will also be crucial to determine the degree of autochthony in the development of domestication. The use and differentiation of space within structures is a key area that can be addressed as well.

4.8.5 Çatalhöyük

Çatalhöyük is a site famous for all the wrong reasons. It has been the centre of accusations of fraud (Mallett 1993) and the focus of new-age histrionics that may distract from the reasons they are included in the site's interpretations (Türkcan 2007; http://www.catalhoyuk.com/library/goddess.html). Nonetheless, it is an important site as it spans the transition to a pottery-using lifestyle and has produced some of the most spectacular evidence for symbolic activity. The huge horizontal exposures allow for much concatenation and cross-referencing of data (Fig. 4.32). The earliest levels (before level XII) date to the very end of the Aceramic Neolithic, though the exposure is limited. The bulk of the occupation took place during the Ceramic Neolithic, with levels X-VI dating to the early ceramic Neolithic.

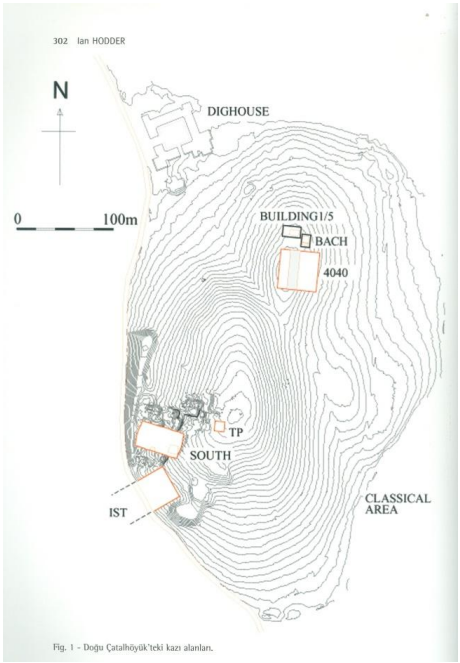

Figure 4.31: Çatalhöyük trenches. After Hodder 2012, Fig. 1

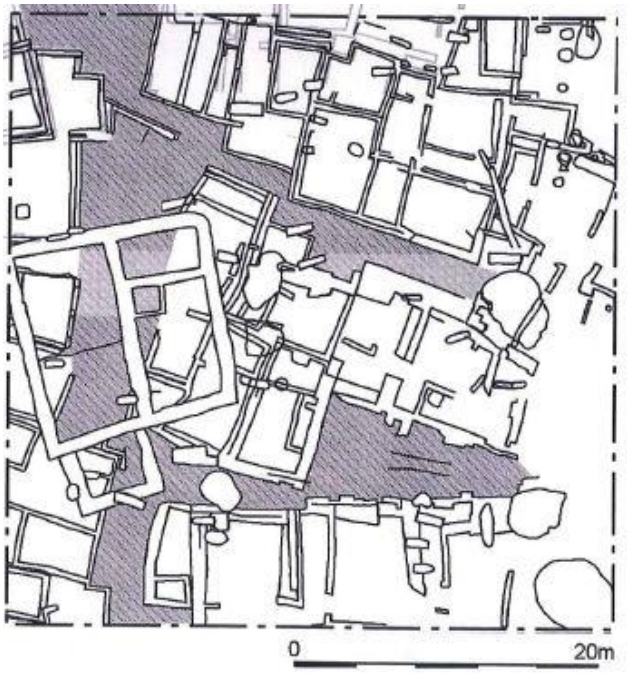

Figure 4.32: Density of construction in the northern part of the East mound. After Hodder 2012, Fig. 3

Düring (2006) separates the spaces found at Çatalhöyük into three types: mudbrick buildings, courtyards (or enclosed open areas), and unbounded open areas (Fig. 4.33). Buildings were likely grouped into neighbourhoods (Düring 2006: 159). Between the buildings, and often in the shell of an abandoned building, were middens for dumping rubbish or keeping animals. Buildings were rebuilt in the same place several times, perhaps due to a lack of stone for foundations, or perhaps due to symbolic identifying factors. The previous structure was dismantled, doors and ovens blocked up, closing deposits may have been placed, and then the walls were pushed in and filled to create a platform for the following structure. New walls were usually built directly atop the old, and party walls were few. Flat roofs were likely sealed by mud packed into branches which had been spread over beams. Buildings are created with one or more rooms, yet even some multiple-room buildings do not have an internal hearth. The majority of buildings are single roomed-structures with a fire installation and possibly one or two small anterooms. The compartmentalization of space was most common in "living rooms" (rooms with hearths). This delineation of spaces was achieved through raising and lowering different sections of a floor; through posts or pilasters; wall paintings; or benches. The northeast part of these rooms was usually raised the highest and kept the cleanest. This cognitive separation invokes ideas of purity. Ladders for entry were usually in south part of house, with the hearth (a kind of Neolithic trash can) underneath. Impurity entered and exited in the south. Posts were not likely structural, as they were rarely paired. Most often posts were found on the north or east side of a building, and low benches for display were almost always in the east.

This careful attention to cardinal direction is also visible in the evidence for symbolic activity in the placement of wall paintings, installations, and burials. Most wall paintings and fragment are geometric, but the figural ones are of course the famous ones. Some images are associated with certain structures or building levels, for example; vultures (and headless people) appear only in levels VIII and VII, while people in skins with weapons around animals are seen only in V, IV, and III. Wall paintings are most likely to be found on the north and east walls, which causes Last and Hodder (1998) to suggest that these paintings are associated with burials, though Düring disagrees (2006: 192).

Another type of evidence for symbolic activities is the installations and mouldings depicting and/or including parts of animals. The visible types are most commonly found in levels VII and VI, and include figural representation of animals (such as leopards in levels VII, VII and VI; or the splayed bear in levels VII and VI); moulded plaster heads of ruminants with or without horns; animal horns in pillars and benches (mostly found in the north east of levels VI and V); and curious features variably called "breasts" (Mellaart 1968) or "clay protrusions" (Düring 2005). These clay protrusions are usually found on the east wall (Russell and Meece 2005). An interesting hypothesis is that the clay protrusions had not been covered in plaster during the use-life of the buildings, and that they were covered over as a type of closing act (Düring 2006: 198). Invisible installations include caches, and objects pressed into plastered walls or thresholds.

Burials are typically found under house floors. There is some evidence for skull treatment, but the one plastered skull was found in a grave, and is likely a relic owned by the inhumed party.

The chipped stone is mostly obsidian, and a majority of knapping took place off site, as debitage is rare. Direct percussive techniques were used between levels XII-VII, but during level VI and after pressure flaking was employed. Common features of the assemblage are large oval arrowheads and daggers. Caches of obsidian blanks were frequently found in shallow pits in houses (Carter 2007).

Pottery was rare until level VI. When it did exist in the earlier levels it was tempered with vegetation, very thick, and unevenly fired. Figurines were made of both stone and baked clay. After level VI nearly all are female and clay. Some of the humanoid figurines had been intentionally decapitated. Animal figurines usually had their heads, but many showed signs of having been stabbed. In general, the animal figurines were less carefully made than humanoids. Most figurines were recovered from middens, and they were never found in graves. From the highest levels of the site come baked clay seals with both geometric and figural designs. Many kinds of personal ornaments were found in all levels.

Crop plants were domesticated at all levels, leading to the supposition that the settlers of the site had brought with them the seeds (Düring 2006: 227).

The most discussed issue that comes of the Çatalhöyük excavations is the role of interpretation (Hodder 1996; 1999). While this is interesting theoretically, the key issues that the results of excavations can inform include the effects of living with animals on early people, and the conceptualization of a house and its liminal spaces and the results on human social interaction. Other theoretical issues that may be profitable involve processes of hiding and revealing, re-use of human artefacts and the delineation of space into neighbourhoods.

4.9 Conclusions

The introduction of the previous issues (geography in 4.2; palaeoclimate in 4.3; chronology in 4.4; households and settlement planning in 4.5; the role of animals in 4.6; mortuary practices in 4.7; and a more detailed description of key sites in 4.8) helped define the intellectual space I will occupy in relation to broader questions for the Neolithic of the Near East. These broader questions revolve around the role of ritual and religion in the developments of the Neolithic in the Near East. For example, in order to investigate the role of ritual in the shaping of households, the major issues and theoretical background to the study of households must first be fixed. Other questions involve the role ritual might have played in the appearance of new relationships with animals, or with the landscape; how social interactions are expressed through the location of ritual acts; how the materials used in certain rituals changed in accordance with geographical or chronological considerations; or even the relationship of communal or private ritual with the presence or types of on-site mortuary rituals. These broader issues concerning ritual will be addressed in chapter 6, now that my study has been situated within the context of previous studies. It was necessary to

highlight the background issues that informed the conditions under which ritual activity flourished in the early Neolithic in order to perform a contextual analysis (See chapter 5). The types of questions that can be asked of the data are broadened, and the possible relationships between types of structured depositions and contextual variables can be investigated with logical validity. How these questions will be asked is the topic of the following chapter.

Chapter 5: Methodology and Model

5.1 Introduction

This section will proceed by describing and evaluating approaches to archaeological data in general; and in particular with respect to the question of ritual. The types of data available must inform the methodology chosen for its analysis and interpretation. Thus, first the nature of the data, and then the nature of current methodologies will be presented. Finally, these approaches to archaeological data will be evaluated *qua* an archaeological understanding of ritual. It will be shown that a new model for the identification and interpretation of ritual activity is required, and one will be outlined.

5.2 Nature of the data

I have chosen to investigate 39 sites across a broad geographical and chronological range according to a narrow range of analysis, rather than to perform an exhaustive analysis upon a few similar sites, in order to best understand the variant ways in which structured depositions appear and can be understood across the early Near East. While it is possible to focus on one particularly well-published site, a comparative approach broadens both the scope of the inquiry and the questions that can be asked of the data. In order to understand properly the nature of structured deposition in the Neolithic, it is necessary to appreciate its variability across many types of site. Such a range of sites taken in a roughly horizontal swath between the Aegean and Lake Urmia provides the opportunity to investigate the nature of depositional activity during the Neolithic of the Fertile Crescent and into Anatolia (Fig 5.1, Table 5.1).

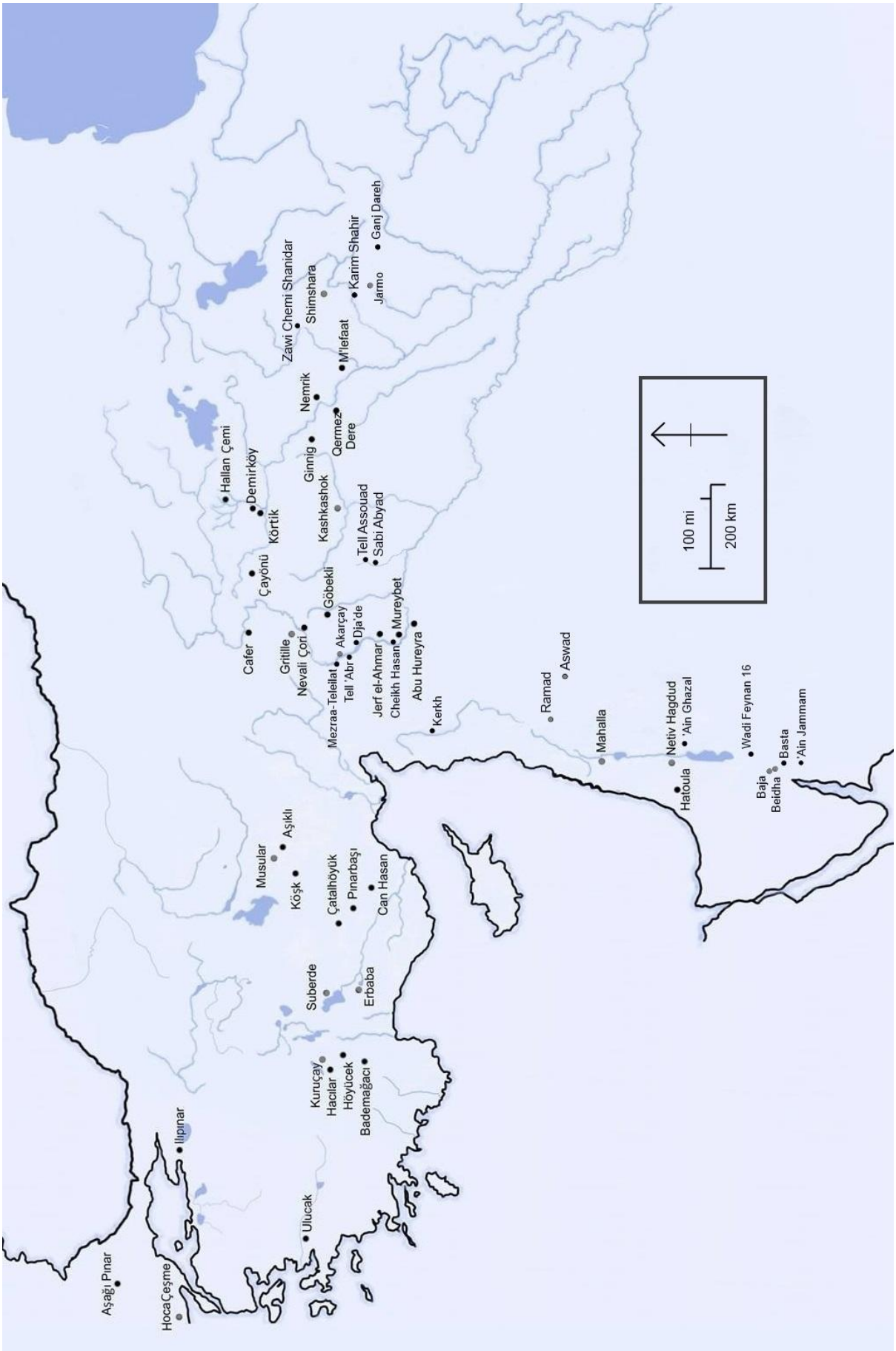

Figure 5.1: Map of sites with depositions included in the database in black, other important sites in gray.

Many sites, especially those excavated in recent years, have been very well recorded with respect to the contextual idiosyncrasies of particular deposits, while sites that were excavated longer ago have not. Sometimes, reference to context even makes its way into the few publications, though much data must be mined from primary sources. As much of the older data is piecemeal, some care must be taken to reconstruct the context in which particular depositions were recorded. When this is impossible based upon careful consideration of the extant documents, the site will be mentioned only briefly.

While it is the goal of some inquiries (*e.g.* Hill 1995) to reconstruct (or re-fill by imagining the reverse processes of their creation) the contents of depositions with the intent of then explaining the intricacies and processes of their creation, it seems that this is a poor attempt at conceptualization, and that it is only possible to reconstruct the activities that created that particular deposition, and not to attain a more general understanding of the forms and uses of depositions unless the deposition is taken in context with the rest of the site. It is rather difficult to reconstruct the excavation procedure even with detailed records, more so the reconstruction of the site itself.

region							
Zagros 31	Ginnig 11	Ganj Dareh 2	Karim Shahir 1	Zawi Chemi Shanidar 2	M'lefaat 1	Nemrik 9	Qermez dere 5
Batman 11	Hallan Çemi 9	Demirköy 1	Körtik tepe 1				
Euphrates 49	Mezraa-Teleilat 2	Cafer 11	Abu Hureyra 9	Mureybet 12	Tell 'Abr 7	Jerf el-Ahmar 7	Cheikh Hassan 1
Levant 29	Hatoula 4	Wadi Feinan 16 3	'Ain Ghazal 9	Basta 2	Kerkh 10	'Ain Jamam 1	
Ergani 10	Çayönü 10						
Konya 419	Çatalhöyük 401	Pınarbaşı 7	Can Hasan III 1	Boncuklu 9			
Urfa 39	Nevalı Çori 19	Göbekli tepe 20					
Capadocia 19	Köşk höyük 17	Aşıklı höyük 2					
Lakes 14	Höyücek 7	Hacılar 6	Bademağacı 1				
Balikh 13	Assouad 1	Sabi Abyad 12					
Thrace 2	Aşağı Pınar 2						
Aegean 6	Ulucak 6						

Table 5.1: List of regions from which the 661 total deposits from the 39 sites included in the database, and the number of acts of structured deposition per site.

5.3 Approach to the data

One must make the decision to start from the data and choose a methodology that seems appropriate, or choose a methodology without any recourse to the data, Should one allow the methodology to be used affect which data to assemble, or should the data be assembled first? (See discussion at end of 5.5) In this instance, it was important to create a research question around a broad geo-chronological zone first; then choose a methodology with which to approach the problem and decide which sites had data relevant to the question. In the end, the data and the methodology determined each other.

In essence, one goal of this thesis is to determine the “ritualized,” or "framed" deposits (using the methodology set out by Catharine Bell 1993:74) within a site and analyze first their context and then their contents (using the guidelines provided by Fontijn 2002) as discussed in sections 2.5.1 and 2.5.2. The criteria by which deposits are considered are made explicit in section 6.1.2, beginning with a detailed description of the nature and content of the pertinent depositions at a particular site, before considering spatial distribution of depositions, contents and depositional types across the site.

The analysis of context and contents will be performed by using quantifiable data (*e.g.* weight of inclusions, number of inclusions, presence of human bone, fragmentation) and plotting their correlations among themselves and to other types of contextual information (*e.g.* type of matrix, location of deposition, association). Potential associations between variables in terms of presence and absence will also be considered, so long as a reasonably large data base exists for a site. While Hill (1995: 125) claims that the simple presence of anything in the archaeological record from prehistoric sites should be considered "special," his focus was on the later prehistory of Europe, where much recovered material comes from hoards and pits. Many sites in the drier Near East have a much greater percentage of material that survives, and several large settlement areas are currently being excavated. This allows not just for the investigation into presence and absence, but an investigation into variables that appear in great abundance.

These basic data manipulations will provide a wealth of information from which to springboard analyses of ritual activity and religion in prehistory. Discussion of meaning-loaded contexts such as burial, style, exchange, refuse, discard, and settlement organization will shed light on the cultural performance of ritual activity. It is the context of archaeological material that leads excavators to consider it as having a ritual purpose, thus any investigation into potential ritual activity must proceed with great care taken to understand context.

"The human past took place in the context of those material conditions we recover as fragmentary remains today. It follows that our knowledge of the past is context specific...Theory precedes knowledge in as much as it tells us how to observe the contents of the past, but knowledge has to be built out of a practical engagement with the details of the evidence" (Barrett and Kinnes: 1988).

In order to fully understand why a contextual approach is most appropriate, we must first understand the other methodologies available and discuss their shortcomings with

respect to the data.

5.4 The Hypothetico-Deductive Method

Processual approaches to archaeology use the Hypothetico-Deductive method to ensure that their practice follows those of other sciences, which ensure the generation of justified, true beliefs. In brief, this method involves explicitly creating a hypothesis, using the process of deduction to find its logical consequences, and the subsequent testing of these hypotheses (Renfrew 1989: 40). This focus on measurement and prediction can be traced back to the goal of validating a hypothesis. For many philosophers of science, such as Karl Popper, validation rests on testability (1959: 46-48) and so a hypothesis must be posited in order to proceed with the scientific method. This method, like much of current archaeological research and fieldwork, is problem-oriented. One does not simply scrabble about in the dirt, making random observations with no goal. While this method seems most appropriate for laboratory work with controllable conditions and quantifiable variables, the 'hard' sciences for which it was originally devised do not encounter variables such as style or culture.

Culture, as due to chance and the laws of psychology (Aberle 1960: 3) is not within the purview of science, but of culture historians and palaeo-psychologists, according to the renowned processual archaeologist Lewis Binford (1965: 204). To deal with the unscientific vagaries of culture, processual theory considers culture an adaptive process, an extra-somatic system in which people participate, and reduces cultural meaning to adaption to the natural environment. This process of adaptation, as well as other unquantifiable variables can then be discussed as predictable, law-like relationships.

Processual methods use a Hypothetico-Deductive model in order to arrive at an explanation of past events. They may seek to explain one event, a class of events, a pattern or a process. They do not seek understanding of motivations or human agency, only explanation of acts.

In a concise gathering of the main tenets of new archaeology, Yoffee and Sherratt put three phrases into the mouths of processual archaeologists: "culture is a means of adaptation to the natural environment...material culture is the passive product of human adaptation to the natural environment... and ...explanation consists in constructing universal laws through the hypothetico-deductive method" (1993: 4).

Measurement and statistical analysis are the important beginning of any archaeological inquiry, however, using a processual methodology, questions are not pushed beyond direct measurement of observable data, or correlations made between these data. This disallows inquiry into many aspects of material culture that some would claim are crucial for a fuller understanding of ancient people. The biggest disadvantage to the Hypothetico-Deductive method is that it does not move beyond what can be empirically observed "in discussing meaning, agency and history" (Hodder and Hutson 2003: 41). Proccessualist approaches do not allow for questions about mental states such as intention or meaning. Cultural change or variability, style and symbolic behaviour are described only

in terms of material function and their possible adaptive advantages. This type of analysis, while 'scientifically' rigorous, is superficial.

The "deductive-nomological" model of scientific explanation, also known as the 'covering law' model, insists upon the presence of at least one general law among the deductive statements in valid explanations. Positivist philosophers such as Hempel and Popper support covering laws in scientific explanation. A good example of this type of law should be "limited to the world of experience and seek causality in the pattern of similar experiences, the regular associations, the observed laws..." (Hodder and Hutson 2003: 21). However, the publication pressure felt by many archaeologists led some to present the academic world with "discovered" laws of either little relevance or no necessity. Flannery called these Mickey Mouse Laws (1973: 51).

A behavioural methodology also makes use of universal laws and does not allow for discussion of human intent or other mental states. While behavioural approaches have added much to the discussion about formation processes of the archaeological record, ironically there has been no contribution to explaining past behaviour.

Cognitive processualism is an attempt by processualists to use the methods of cognitive science to approach the "human ability to construct and use symbols" (Renfrew 1994: 5). There is no desire to approach meaning of symbols in any way; rather the focus is on the *use* of symbols. Bell (1994: 18) offers some suggestions to those attempting to use a cognitive processual method: 1) restrict statements to claims about cognition; 2) link statements to data about artefacts using formal logic; and 3) make statements as objective as possible.

While this method allows for inference in addition to deduction, the inferences allowed must remain close to the data and must entail statements which are directly testable by the data. Cognitive processualists aim to make testable explanatory statements, not interpretations, which they see as being easily changed to accommodate anomalous data (Bell 1994: 17).

Middle range theory also involves the application of universal measuring devices. The methods of this approach involve the development of operational concepts with which to seek out behavioural patterns within the material record (Bailey 1983: 2). Middle range theory is therefore not context-specific and tends towards superficiality. It is useful in the same sense as ethnographic analogy is, in that it provides a useful starting point from which deviation is presumed. The range of possibilities opened up by reference to analogy or middle range theory can help narrow the infinite direction of study to a more appropriate, targeted data set.

In describing processual methods of approaching archaeological data, many theorists have made use of the "ladder of inference" (Hawkes 1954: 161-2). This ladder as intended by Hawkes did not necessitate understanding one 'rung' before proceeding up to the next, but merely as a hierarchy of difficulty of inference. Material technology tends to be easiest to make inferences about, followed by subsistence economics. Communal organization is

more difficult still, with religious and spiritual life at the apex of difficulty. Hawke's goal was to show that it is the human-ness of these activities that make them difficult to infer based solely upon material remains (162). Processual theorists allow movement only up the ladder (Hodder and Hutson 2003: 43).

Hodder turns this upside down in suggesting that without an understanding of social organization or religion, technology and economy are themselves incomprehensible: "looking for patterns is inadequate, we need to make abstractions about the meaning of the pattern" (Hodder and Hutson 2003: 69).

Despite many attempts by processualists to find a covering, universal law of human behaviour, the only universal law concerning human behaviour with predictive success is that there is no universal law concerning human behaviour.

On the basis of these critiques, an entirely processual approach using the hypothetico-deductive method is inappropriate to pursue the topic of ritual. Explanation alone is insufficient to describe crucial elements of ritual acts, such as the meaning of acts and symbols, as well as human intent. In order to be able to include all elements of my definition of ritual (in 2.2), the ability to make inferences about the data was necessary. Therefore, I turned from purely deductive methods and considered inductive methods, which promoted the use of analogy and interpretation as analytical tools.

5.5 Interpretive Methods

Post-Processual or Anti-Processual approaches to archaeology seek to uncover meaning. As such, they are deemed relativist and anti-scientific by their processualist detractors.

One of the first alternatives to a processualist approach to make its way into the archaeological literature involves the historical materialism of Karl Marx. Various interpretations of Marxist materialism corresponding to approaches in the social sciences (*e.g.* functional, structuralist, phenomenological) have been put forward (Spriggs 1984: 2). But in general, for Marxist theory, the point of departure is society itself (Kristiansen 1984: 74). This starting point allowed for discussions of social and ideological themes that were not possible using a strictly processual approach. As Marx was concerned with socio-economic change, any discussion of social structures will reference the modes of production which bring about these structures.

The mode of production is comprised of the means of production (the raw materials needed to produce goods) and the (social) relations of production. From the relations of production arise the superstructure, or ideologies. In Marxist theory, human society is divided into two economic parts: the base and the superstructure. Although Marx himself was not concerned with prehistory, his successors used his analysis of history as a springboard to understand prehistory in terms of modes of production. Sahlins dedicates two chapters to a description of the domestic mode of production, in which the household is the unit of production (Sahlins 1972: 76).

Godelier, not unproblematically, attempts an understanding of the distinction

between infrastructure (or base) and superstructure in precapitalist societies (Godelier 1980: 4). Like processualist methods, Marxist approaches can be too reductive, calling kinship a superstructure hovering over the real social relations - those tied to economic production. When the crux of culture is reduced to labour processes like hunting and fishing, it is easy to overlook discussion of religion, power, and family. Another issue that has been raised is how to approach classless or egalitarian societies. Parker-Pearson suggests replacing the idea of class in the class struggle with another idea found in Marx, the "interest group" (1984: 61). One example of an interest group in prehistoric bands could be the young women about to come of age, as their labour is similar, and they are on the verge of adding another valuable productive capacity to the group as a whole.

Ideology, as part of the superstructure can be seen only as it is "determined by and functions in relation to" the ancient economy (Hodder and Hutson 2003: 80). Thus, the ideological manifestations of wealth, status, and the value can be seen in the archaeological record.

Historical materialism has social implications which are applicable in archaeology. However, returning to Hawke's ladder, one must distinguish between material function and cultural form in order to examine social organization. One way to do this is to seek "conditions that govern cultural manifestations of material functions in societies" (Kristiansen 1984: 95). Marxist archaeologists using an analytical framework focusing on the economy of ancient peoples immediately have a wider vocabulary that those using the hypothetico-deductive method.

Even with a Marxist focus on production, it is important not to privilege prehistoric production over another economic force: consumption, especially if evidence arises that the ideological and religious components of superstructure emphasized ritual consumption. "If production is emphasized at the expense of consumption, exchange is looked upon as a primarily economic transaction" (Bradley 1990: 33). This strictly economic focus can distract from the superstructure, or perceived ritual functions of structured deposition. Both sacrifices and offerings may be considered ritual consumption, as in both cases, highly-valued items are removed from public consumption.

While the advent of Marxist theory has opened up many fruitful avenues of dialogue within archaeology, Renfrew is correct in his criticism that methodologically, Marxist archaeology aims to force data into congruence with a set of theories that were created to explain 19th century capitalism. As such, it is not the most expedient way to understand structured depositions across the Neolithic.

Structuralist methodology approaches a set of data as belonging to a complex system of interrelated symbolic elements, often in opposition to one another. Analysis of 'structured sets of differences' can be said to be processual in basic form, though this kind of analysis allows us to investigate the meaning of material culture through its transformations, as culture is meaningfully constituted (Hodder and Hutson 2003: 74). Structuralism relates what would have been separate systems or sub-systems in a

processual approach according to a deep, underlying structure that permeates all and determines the position of each piece in the picture.

Claude Lévi-Strauss was one of the first anthropologists to develop the idea of structuralism derived from linguistic analyses, and used binary oppositions in discussion of ritual, food preparation and mythology in order to seek out the creation of cultural meanings. Structuralism also draws our attention to the missing pieces of the puzzle; it draws us to investigate absences in data (Hodder and Hutson 2003: 72-3). In addition to seeking out the parts of the set, "structuralists look for the structuring factor behind the structured set" (Pouillon 1980: 282). This may at time seem circular, as the parts are used to find the structure, and the structure is also used to seek out the parts.

Structuralist approaches tend to seek out opposed extremes in a cultural product, and "assume them to be the limits of the world in question *and* to be parts of the generative core that produced it" (Gellner 1982: 114). Imagine trying to figure out the parameters of a deck of cards as they are laid down one by one. Eventually we would have seen all the possible types and be able to guess the extremes: black and red, suits, numbers. One underlying assumption with this is that the generative core will come to light given a large enough range of material exhibiting it. If we only have two cards from which to understand the whole deck, and one is the two of spades and the other is the seven of clubs, we would draw inappropriate conclusions about the range of possibilities, having seen only numbers and the colour black. Another assumption is that there *are* such binary antipodes in prehistoric thought. How can we be certain we are not choosing arbitrary structures? Any linear spectrum points to two extremes (Gellner 1982: 115), but how can we be sure that prehistoric thought was linear?

With this system, it is useless to apply meanings without recourse to context. When asked to validate structuralist interpretation of material culture, archaeologists tend to fall back upon context. The question of validation of structuralist approaches is a tricky one; Hodder tries to find rigor by demonstrating that the same structures account for different types of data in the same context (Hodder and Hutson 2003: 68-9). Why not then begin with context? One page later, Hodder then recants his verification procedure by claiming that many structures are quite specific and not verifiable. "Part of the validation ...must therefore concern the abstraction of particular meanings related to the structures" (70). We must assume that structures are shared societal norms, there is no rebellion? Is there to be no room for individual agency? Elsewhere, Hodder has shown that the structure of symbols and style can be used to rebel against the elders of a tribe. It is clear that the applications of structuralism are enjoyable, but haunted by claims of arbitrariness and verification difficulty, and do not take into account individual agency.

There are many other theoretical approaches, such as those that focus on agency, feminism, ranking, and embodiment, but none of these have developed methodologies specific to their theory.

The beauty of contextual analysis is how it privileges the data, and uses the data as a starting point to find ways of studying its contexts in order to arrive at meaning. Contextual

analysis means continuously going back and forth between theory and the data, trying different theories to see which is the best fit. The archaeologist searches for similarities and differences across the data and tries to tabulate them. In addition to looking for similarities and difference in terms of structuralist antipodes that would have been overlooked in a strictly processual approach, an archaeologist employing a contextual method also looks for differences temporally and spatially, and in terms of depositional context (Hodder and Hutson 2003: 174-5).

The most basic type of context that all archaeologists with pretensions to scientific rigour are concerned with is that of provenience. A contextualist method looks beyond provenance to all that surrounds the deposit as useful to interpretation. The relation to other nearby deposits, the placement in the overall site, all these considerations must be analysed for potential sources of meaning. It is not simply the physical context that must be taken into consideration, but the environmental, technological and behavioural contexts as well (Hodder and Hutson 2003: 204). "The task of the archaeologist is to go round and round the data in a hermeneutic spiral" (Shanks and Hodder 1995: 6).

Concerns have been raised about the efficacy of a contextualist methodology. "Contextualist arguments...prove too much" (Wylie 1993: 21). If data requires interpretation, why would we privilege one kind of interpretation over another? "Does this contextualism not entail that inferences concerning the past are unavoidably circular?" (Wylie 1993: 21). Interpretation is certainly a process, and by returning to the data to steer us towards appropriate theory, the circle may become a spiral. Though the spiral may not ever arrive at one answer, it will more likely place us closer to an answer than mere measurements and graphs.

In my consideration of interpretive methods, “more likely” to arrive at an answer seemed better than “not at all,” yet still not yet sufficient. The drawbacks of interpretive models: circularity, arbitrariness, and forced congruence with particular disciplines must be mitigated before such a methodology can be put to use. Of the interpretive models, the contextual approach best fits the types of data considered in a discussion of ritual activity. My solution to the drawbacks of using a contextual approach will be discussed in 5.8, with the explication of a new model.

The choice to proceed with a contextual methodology avoids the traps of rigid processualism and allows for flexibility in interpretation. It would be unwise to treat the evidence from sites that differ with respect to preservation, excavation strategy, technological experimentation and adaptation or even environment in exactly the same way. A contextual approach allows the site itself to determine the starting point and the extent of possible investigation. As such, this approach will influence the evaluation of previous models for the recognition of ritual and necessitate the construction of a new, more purely contextual, model.

5.6 Anthropological models in Archaeology

Anthropological approaches to ritual are almost entirely functional or teleological;

explaining ritual as a specific goal-oriented mechanism, or as a means to some end. Durkheim, Evans-Pritchard and Radcliffe-Brown explicitly described ritual as purely functional, while others skirted the underlying issue and described the purpose of ritual without addressing the concept of function (Durkheim 1971; Evans-Pritchard 1956; Radcliffe-Brown 1922; see also Bell 2009 for more discussion). Malinowski and Freud focused on the emotional aspects of ritual, ascribing a cathartic role to repetitive, socially significant actions (Malinowski 1925; Freud 1930). The 'intellectualist' approaches of Frazer and Tylor placed ritual in the service of explaining the motions and denizens of the larger world; making existence less frightening in its knowability (Frazer 1924; Tylor 1891). The function of ritual in a structuralist approach (*a la* Lévi-Strauss) is to reinforce the status quo (Lévi-Strauss 1962). Godelier's Marxist approach employs ritual as a justification of shared ideology and, like processual approaches, tends unfortunately to reductive explanations (Godelier 1980).

In an attempt to reconcile processualist archaeology with a need to reference the intentions and symbolic behaviour of the actors who created the artefacts we now study, cognitive archaeology was prematurely delivered. Cognitive approaches consider the internal mechanisms that create and are created by ritual acts. Archaeologists using this sort of approach have notoriously confounded the use of 'mind' and 'brain.' References to intuition and cognitive development take precedence over physical remains or material culture, and the use of symbols is crowned over their meaning. This sort of methodology is thus of little use to an archaeologist with any hope of interpreting material remains.

Contrarily, symbolic approaches to ritual behaviour focus on meaning, communication, and the expansion of human cognition through external symbolic storage. In this way, symbolic approaches attempt to interpret, rather than simply describe, symbols implemented in ritual behaviour. Any attempt to understand ritual activity must have recourse to symbolic meanings. The static processes of structuralism have proved too inflexible to cope with the constantly created and re-created world of symbols that the archaeologist hopes to interpret. Meaning can be created through a codified use of symbols which, though arbitrary, may be deciphered through their 'grammatical' uses. Of the three main approaches to meaning: structuralism, semiotics, and symbolism; each has drawbacks and interpretive value, though symbolic approaches to meaning are often overlooked. Structuralism is arbitrary, relying on binary distinctions. Semiotics largely relies on Peirce's tripartite categories, with emphasis on the agent or interpretant. Symbolism reacts against the empiricist's focus on "science in search of law" (Geertz 1973: 5), and insists that all human behaviour is symbolic action (10).

Again we return to the idea that ritual is an action. The performance of the action itself is more important than any meaning ascribed to it by the participants or the spectators. The social situations created by ritual behaviour leave sensible impressions upon the outside world: burnt offerings are odiferous, enclosure within a space casts shadows and restricts vision, bodily purification changes the texture of our skin, smearing of unguents leaves coloured swaths upon a pillar and both feasts and hallucinogenic plants

leave palatable traces. Many of these sensory ritualizations are immediate and ephemeral: we do not hope to recount them here. Others leave a more permanent impression on the human landscape.

Approaches that focus on the action of ritual are more conducive to be relevant to material remains. Bourdieu's focus on action differs from processualist approaches in that actions may reveal the social strategies by which persons reinforce and generate their social landscape, whereas processualists do not allow for inference. Similar action, or practice, -oriented approaches, such as that of Bell (1993) specifically describe the process by which material objects become 'ritualized,' explicitly making the theoretical approach relevant to archaeologists.

5.7 Archaeological Models

A few archaeologists have gone beyond sifting through the anthropological and psychological methods for dealing with ritual acts, and have formed models for interpreting ritual acts specific to their field (Table 5.2). Certain deposits are generally accepted, *a priori*, as evidence of prehistoric ritual. These include: disposal of human bodies; monoliths; special architecture; wall and floor paintings; conspicuously displayed artefacts; and anything deposited prior to, but in relation to, the construction of a structure. However, this sort of intuitive approach to ritual has no basis in theory.

One of the first attempts to create a model for the recognition of ritual acts in prehistory was Colin Renfrew (1985). Though his work at the Phylokapi Sanctuary on Melos, he provided a list of possible indications of ritual activity. While this proved to be very useful for large-scale ritual activity, there was no attempt to explain or interpret the meaning of any of the listed elements to the participants in these rituals. The explanatory power for small-scale, or personal, rituals was weak at best, and the assumption of continuity or the "hard-wired" aspect of all human brains concerning religion undermined the central argument.

Other theorists focused on specific aspects of ritual acts, such as the location (Marcus 2007: 46) or artefacts involved (Nikolaidou 2007: 185), to facilitate identification of ritual acts, though neither of these approaches had more success than the list created by Renfrew. Some anthropologists attempting to contribute to the archaeology of ritual have only muddied the waters by suggesting that ritual is a quality of an action, and that it is a displaced intentionality that separates the same action from mundane and ritual meanings (Humphrey and Laidlaw 2007: 256). While intentionality certainly needs to be taken into account, it is perhaps the hardest attribute to recover from the archaeological record. As such, if intentionality is to be the only determining factor of ritual activity, this criterion is useless to archaeologists.

Most archaeologists agree that a starting point for the identification of ritual activity is discerning anomalies within an assemblage (*e.g.* Bell, Verhoeven, Kyriakidis), while others insist on the identification of repeated actions (*e.g*. Marcus, Bell, Edwards). These positions are not incompatible. Kyriakidis tasks the archaeologist with first discerning the "normal,"

from which she may identify the "special." If this "special" activity shows evidence of having been set or established, through formal repetition and invariance, then the action has been "crystallized" and can be considered as ritual (Kyriakidis 2005, 2007). Bell (1998, 2007) attempts to understand ritual activity through the distinctions that prehistoric people made between their various ways of acting (2007: 285). She calls this sort of differentiation of objects and acts "ritualization." Verhoeven (2002) combines this concept with Bateson's "framed" acts to create a list of possible ways in which objects remaining in the archaeological record may be seen to have been set apart from quotidian activities. Gazin-Schwartz (2001) insists that classifying anomalies as evidence for ritual is problematic, as so many utilitarian objects are used in ritual activity. She then goes on to suggest a softer version of Richards and Thomas' structured deposition, without discussing how the patterning of functional objects is to be interpreted as the result of ritual activity.

The definition of ritual as any repeated action (Bell, Marcus, Edwards) is of no use to the archaeologist. It has been shown that symbolic activity is necessary for ritual. Edwards (2010) claims that symbolically structured deposition is meaningless, and that modern usage forces an untenable dichotomy between what is valuable and what is refuse (108). He also claims that ritual is *only* useful as a concept if it can be separated from these sorts of dichotomies. His arguments would be valid, but there is a simple way to avoid forcing the dichotomies; and that is not to make the assumptions 1) that we rely on our modern classifications of valuable and rubbish, and 2) an object never changes its status. As we only see the final deposition of an object, we cannot seek a covering law for all kinds of ritual deposition. The notion that no symbolic quality is required for an action to be considered a ritual is absurd.

Kyriakidis warns against the attribution of ritual status to any object "on the basis of its context alone" (2007: 18), while claiming "My position is that as long as you cannot distinguish between two identical things, they are the same" (291). Despite this bleak forecast, he maintains that a reconstruction of ritual practices is possible (297) even though he appears to be concerned only with analytical knowledge. This contradiction cannot be overcome.

Hodder (1992: 222-3) cautions that ritual activity is often defined as the odd man out from an assemblage, and suggests that this is insufficient to establish a ritual act, and that a more comprehensive understanding could provide a stronger sense of ritual activity. The contextual approach he offers attempts to maximize all aspects of information on all aspects of the past. A similar problem is faced by the proponents of subjective objectivity in epistemology; in order to make an objective description, every term in a proposition must be defined as it is used. The non-reliance on any assumptions or inferences inhibits communication in the name of truth. Despite his own desire to introduce human cognition, agency and intention to archaeological theory, Hodder still falls victim to the dichotomies of structuralism by focusing on wild/domestic; male/female; and clean/dirty in his interpretations of Çatalhöyük. This does not invalidate his approach, but shows he himself has not been able to remove his theory from binary constraints – in other words, he has not

yet figured out how to put into practice that which advocates.

Verhoeven's model has a step by step approach, but hard-wired into the model is a desire for feedback between each of the steps, detracting from its orderly approach. He also excludes possible functional depositions from a consideration of ritual. This is the main failing of his model. As Brück (1999) reminds us, the conception of the separation of ritual actions from functional ones is a modern conception, born of the Enlightenment and Westernization of ideas. "The sequence of retrieving tools, for instance, might not only be the workings of a functional *chaine operatoire* but the result of an established ritual conferring perceived success on the technical operation being pursued, and here context will be critical in beginning to assess underlying ritual intent" (Insoll 1994: 11).

Theorist	Description	Strengths	Weaknesses	Application
Bell	Ritualization	Framing acts.	Over-inclusive, vague. Refuses a definition, imprecise.	Many
Verhoeven	Flowchart with cyclical re-absorption of results at each step	Easily applicable. Designed with Near East in mind.	Initial context ignored. Disregards functional deposits.	Tell Sabi Abyad
Renfrew	Cognitive processualism	Easy to use, Checklist.	Assumes continuity. Individual meaning is lost.	Phylokapi
Hodder	Contextual	Acknowledges theorist is biased, changing descriptions.	Can prove too much.	Çatalhöyük
Kyriakidis	Cognitive Crystalisation	Intention discoverable through patterning.	Contradictory. Does not address symbols, meanings.	Minoan peak sanctuaries
Humphrey and Laidlaw	Displacement of intentionality	Allows for the same action to be both ritual and quotidian	Useless to archaeologists.	Mergen Monastery, Inner Mongolia

Table 5.2: A summary of some archaeological models for understanding ritual.

5.8 A new approach

By prioritizing a contextual approach to ritual, other common approaches for understanding ritual -functional, communicative, emotional, cognitive, structural, Marxist, performative and relational - are tackled in the interpretation stage. Several deposits that may be considered solely functional, such as an obsidian cache or a bone shoring up a post are considered throughout this model, rather than dismissed at the start, as they would have been in previous models (Table 5.3). There is no evidence that ritual activity had no function, nor that functional acts were not ritual in nature. This approach then avoids the trap of functionalism, which is itself an outdated thought experiment of the analytic philosophers (see 2.3 for discussion). Functional approaches to meaning have long since been left by the wayside in the other social sciences, and there is no need to pretend it is the only way forward in archaeology.

My model begins with a detailed description of the nature and content of all possible structured depositions at a particular site, setting the context of the investigation (see 3.1 for a description of structured deposition). Any anomalous behaviour may be due to ritualization, "a way of acting that is designed and orchestrated to distinguish and privilege what is being done in comparison to other, usually more quotidian, activities" (Bell 1993:74). Both Bateson (1972) and Verhoeven (2006) have termed this method of setting apart activities or objects for ritual purposes 'framing.' For my purposes, this is an adequate starting point, though not all "framed" depositions will be considered as the result of ritual activity by the end of analysis.

In my understanding, framing is an intentional human act of setting apart an activity, object, structure, person, area or even colour. Examples of the ritualization of colours can be found at a Chinese wedding: the bride and only the bride may wear red. Ritualization, or framing, of an object may be discovered only through a contextual investigation. An object may stand apart from others by a special or unusual location; a building may be exceptionally large or made of different materials. Special features or unusual associations may frame a colour. The colours deployed in everyday life are different from those used during special occasions. The frame of reference against which potentially anomalous behaviour is compared can affect what appear to be framed. For example, looking only at one burial from Körtik tepe, it seems very clearly framed in relation to other acts of inhumation in the Near East. However, looking at the same burial in the context of other burials from Körtik, it appears as standard practice, and not set apart. Using an individual site as the frame of reference is a good starting point, unless micro-stratigraphic work has been performed. In most cases, the ability to differentiate between parts of houses or between houses is not available.

Those acts that are anomalous or 'framed' relative to the site norm are then quantified in terms of their context and contents, and analysed with respect to

symbolization (see 2.2), timing and formality. Once these steps have occurred, then interpretation is possible.

Contextualization	Become familiar with norms of the site
Ritualization	Identify anomalies, ritualized acts
Quantification	Context and contents of deposit (database)
Symbolization	Locational meaning, repetition of symbols
Final Interpretation	Symbolic communication, ID actors, audience, function, structure, ideology, relations

Table 5.3: A new model for approaching ritual in prehistory.

The nature of the data in this study included widely disparate instances of structured deposits, separated by thousands of years and kilometres. To organize this information, I created a specialized database. Each structured deposit was given its own code, and, when two objects were deposited together, each got a related code, but a separate entry in the database. Each object is described in terms of contents and context, or the *what*, the *where,* and the *how*. *When* derives from the analyses of the excavators and chemists, and *who* and *why* for interpretation.

5.8.1 Methods for establishing which acts are to be considered ritual depositions

In order to include any act of deposition in the database, it must first have met certain criteria to be considered as a ritual deposition. In other words, each act can be explicitly described with respect to how it had been framed or ritualized. Some depositions are framed or ritualized due to attributes of their material (such as size, shape, or colour), placement (such as location or orientation), visibility, reference, or any combination of the attributes recorded in the database (Table 5.4). The multiplicity of possible ways in which a deposit could be understood to have been ritualized reflects upon the many dimensions in which a ritual could be expressed. Verhoeven (2002: 235, Table 1) provides an excellent description of different ways in which a deposit might be framed, although he unfortunately focuses on contrasting ritual with domestic functions. The depositions in the database can be grouped into 17 main types, labelled A though Q, as demonstrated in Table 5.4 below.

Type of deposit	Database ID number
A: Complete material, unusual for broad location, and placement can be interpreted as intended for display (*e.g*. clearly visible, on a wall or bench)	1, 23, 32, 102, 103, 106, 147, 157, 401, 1170, 1293, 1327-1331, 1633-1637, 1701, 2047, 2061, 2062, 2064, 2161
B: Fragmented material, in a group or cluster, for display	2, 3, 9, 67, 70, 195, 1645, 2111-2118
C: Singly placed material, for display	4, 5, 193, 197
D: Unusual material placed in relation to a displayed object(s), not nec for display itself	6, 121, 148, 1306, 2065
E: Composite object(s) in evocative placement or arrangement, colourful, on display	7, 16, 59, 64-66, 160, 1089, 1167, 1177, 1178, 1338, 1349, 1351, 1372, 1373, 1377, 1382, 1387, 1392-1396, 1398, 1406, 1407, 1411-1413
F: Object(s) "marking" a pit or activity	8, 34, 93, 155, 156, 1014, 1015, 1018, 1090, 1127, 1274, 1325
G: Massive cluster of chipped stone. n>10	20, 1110, 1111, 1162, 1213, 1244-1246, 1257, 1259, 1261, 1286, 1287, 1303, 1307, 1318, 1319, 1324, 1507, 1631, 1641
H: Massive cluster of similar objects, not butchery waste	13, 14, 176, 1119, 1252, 1262, 1263, 1508, 1632, 1637, 2066
I: Unaltered material placed invisibly, unusual for broad/specific location	17, 18, 24, 26, 30, 31, 44, 46, 60-63, 71, 85, 91, 92, 97, 143, 144, 145, 220-222, 1011, 1012, 1086, 1195, 1205-1208, 1240, 1250, 1270, 1272, 1300, 1323, 1504, 1505, 1643, 2041, 2042, 2125, 2130, 2142
J: Deliberately altered material, hidden, buried or re-incorporated. Care taken in creation, then again in placement	19, 83, 84, 111, 118, 131, 151, 154, 159, 196, 219, 225, 227, 230-234, 1088, 1117, 1160, 1161, 1169, 1197-1200, 1209, 1254, 1273, 1282-1284, 1291, 1292, 1297, 1320, 1327, 1501-1503, 1506, 1601, 1602, 1646-1648
K: Unusual material placed with human burial	21, 22, 25, 33, 45, 51, 223, 234, 1085, 1087, 1112 - 1116, 1170, 1234, 1315-1317, 2131
L: Object(s) placed visibly at a liminal location	39, 177, 178, 190-192, 207, 1013, 1168, 1180, 1242, (invisibly placed – 902)
M: Isolated object in centre of space or on path	82, 208, 1509, 2063
N: Unusual material, hidden, possibly related to other, nearby hidden depositions	152, 153, 1123, 1124, 1203, 1204, 1260, 2001-2007, 2144-2154
O: Cluster of different materials, unusual for broad/specific location, not necessarily for display	52-54, 88, 182, 183, 187- 189, 198-200, 209-211, 801, 1001-1010, 1016, 1017, 1019, 1031-1035, 1097-1099, 1120-1122, 1133-1137, 1165, 1166, 1248, 1285, 2009-2022, 2043-2046, 2049-2052
P: Hidden cluster of materials	68, 68, 89, 96, 142, 201-206, 1020-1030, 1036-1040, 1050-1074, 1092-1096, 1100-1109, 1118, 1125, 1126, 1128-1132, 1138-1159, 1247, 1249, 1251, 1253, 1255, 1265-1269, 1271, 1275-1281, 1289, 1290, 1294-1296, 1298, 1299, 1304, 1305, 1308-1314, 1321, 1322, 1326, 1333-1335, 1642, 1644, 1648, 1650, 2000, 2008, 2121, 2122
Q: Pillars	95, 98-101, 104, 105, 112-117, 119-130, 158, 216-218, 226, 228, 229, 402

Table 5.4: Criteria for establishing depositions as having been ritualized, for inclusion in database.

An example of a Type A ritualization is the complete aurochs skull which had been suspended from a wall in a large building at Hallan Çemi (database ID# 1). Like other Type A deposits, it was complete, and clearly visible from its position on the wall. In addition, it was framed as most animal bone was found in the central activity area, and was therefore unusual for its broad location in a structure.

An example of a Type B ritualization, also from Hallan Cemi, is the three interlocking sheep skulls placed in the centre of the activity area (ID# 2). These skulls had been fragmented, paced in an easily visible, public location, and arranged into a coherent group.

Type C ritualizations are clearly-placed, individual objects that may or may not be fragmented, such as the detached human skull placed in the angle between the wall and floor in a house at Mureybet (ID# 66).

Depositions that have been classified as a Type D ritualization have been placed in relation to an object that was clearly on display, though they themselves might not have been easily viewed. An example would be mandible found just below a clearly visible horn in the midden at Hallan Çemi (ID# 6).

Type E ritualization involves a composite and colourful deposition in a clearly visible or display location. In addition, these deposits that have multiple elements (rather than one object made of multiple materials) are arranged in an evocative manner, such as the aurochs skull with a polished red stone in its mouth from Hallan Cemi (ID# 7).

Deposits that point to or mark a previous activity, such as the infilling of a pit, are ritualized in accordance with the Type F description. A clear example of this is the antler placed atop a pit at Hallan Cemi (ID# 8).

Clusters of similar or identical objects that do not appear to have been dumped in midden contexts can be separated into two types. Type G depositions are clusters or caches of chipped stone, often found unused in a shallow scoop, such as the cache of 168 pieces of obsidian in a bin at Çatalhöyük (ID# 1267). Type H depositions are massive clusters of the same type of bone, clay, or stone objects, such as the huge pile of bird wings at Zawi Chemi Shanidar (ID# 13).

Type I depositions are most commonly found in pits and postholes, material that has not been elaborated by human hands, yet care was taken in its deliberate and invisible placement in an unusual broad or specific location (These depositions are often considered to be apotropaic in nature). An example of a Type I ritualization is the aurochs rib built into a hearth at Boncuklu (ID# 46).

Type J ritualizations consist of material that has been altered by human hands (*i.e.* chipped, ground, incised, coloured, pierced or shaped) and then hidden, buried, or re-incorporated into another structure. Care was taken first in the creation of the material, and then in its invisible or partially visible placement. An example of a deposit that was ritualized in accordance with Type J is group of 4 figurines and pendants at the bottom of a stone robbing pit from Basta (ID# 1602).

Type K depositions are ritualized as they are material that is anomalous for the site placed with a human burial. The tortoise carapaces from Kortik tepe are not considered as ritualized, as they occur in at least 17 graves. The pig scapula placed on the back or pelvis of a female burial at Boncuklu, is the only known example of a deposition of pig bones with a burial at the site (ID# 45).

Type L depositions are ritualized by their specific location in a liminal area such as a doorway, threshold or window. An example of a Type L ritualization is the rib pressed into the threshold, dividing a building at Boncuklu (ID# 39).

Type M ritualizations are identified by their intentional isolation from other deposits - intentional or unintentional. An example of this would be the stone figurine from 'Ain Ghazal that was placed at the end of a pathway leading away from the main area of habitation (ID# 208).

Ritualizations of Types N, O, and P are perhaps the most troublesome to corroborate in terms of intentionality, as they are often found in middens or the fills of abandoned buildings. Type N ritualizations are material(s) that are unusual for a specific or broad location; hidden from view; and are probably related to other, nearby material that is also anomalous and hidden. An example of a Type N ritualization is the dog burial in a Grill-plan building near a boar skull and a human male burial at Çayönü (ID# 152). Types O and P concern clusters of objects. Type O ritualization occurs when a cluster of different types of materials is found that appears to be anomalous for the broad or specific location, such as the horncores, ground stone, bone point and chipped stone placed during the abandonment process of building 1.3 at Çatalhöyük (ID# 1132). Type O ritualization may or may not be visible. Type P ritualizations are hidden clusters of objects, that may be of the same or of different materials. An example of a Type P deposit is the group of 14 female figurines in a niche from Hacılar (ID# 1466). A great many of Types O and P come from Çatalhöyük, and are discussed in detail in Nakamura's chapter in *Religion in the Emergence of Civilization* (Hodder 2011). Q, the final type of ritualization in this set, is comprised of pillars; vertically-oriented columns of clay or stone. Examples of pillars include the fabulously carved examples from Göbekli tepe (*e.g.* ID# 113) and the clay column from Qermez dere (ID# 101).

5.8.2 Description of the database

Each database entry involved both a free text description, as well as a description structured by pre-set terms (see beow for list). Using a pre-set categorization allows the qualitative description to be grounded in quantitative terms. This is the basic organizational principle of the database; quantifiable attributes are recorded using drop-down boxes with set terms, while less or unquantifiable description is recorded in the free text description. Thus, there is no set of terms to describe the different ways in which a deposit may have been symbolized. There, decision was taken to exclude how a deposit was framed, as many of the deposits are multiply framed. For example, the three sheep horn cores in the central midden at Hallan Çemi are framed by location, placement, material and treatment. The ways in which each deposit was considered as framed are described in 5.8.1 (Table 5.4), but not included in the database.

The context and contents of each act of deposition have been subdivided into quantifiable attributes, chosen from a drop-down box (Fig 5.2). The range of physical attributes was chosen to include as many commonly-recorded attributes of artefacts in

order to maximize the search for patterns. Previous attempts to seek patterning across Neolithic sites focused on physical location (*e.g.* Richards and Thomas 1984; Russell and Twiss 2009), so the decision was taken to broaden potential correlates.

In addition to geographical location (described in 4.2), the attributes of each deposition have been broadened to include many more quantifiable possibilities. These are my definitions and, in some cases, I have returned to the context sheets or excavation reports to re-classify the attributes of deposits according to the following scheme. For every attribute, the option "no information/unclear" was available.

ID: Individual number assigned to a material or object that has been specially deposited.

1-10:	Hallan Çemi	Late Natufian/EPPNA (before 9500 cal BC)
11-15:	Zawi Chemi Shanidar	
16:	Mlefaat	
17-25:	Abu Hureyra	
26-29:	Körtik tepe	
51-55:	Hatoula	
56-63:	Mureybet	
71-80:	Demirköy	
81-82:	Karim shahir	PPNA (9500-8800 cal BC)
83-90:	Tell 'Abr	
91-100:	Nemrik 9	
101-105:	Qermez Dere	
106-110:	Sheikh Hassan	
111-140:	Göbekli tepe	
141-149:	Jerf el-Ahmar	
150-175:	Çayönü	
176-179:	Wadi Feynan 16	
30-50:	Boncuklu	
201-215:	Cafer höyük	EPPNB (8800-8200 cal BC)
216-300:	Nevali Çori	
301-350:	Tell Aswad	
351-400:	Dja'de	
401-500:	Ganj Dareh	
501-600:	Gritille	MPPNB (8200-7500 cal BC)
601-700:	Shaqarat Mazyad	
701-800:	Kfar HaHoresh	
801-900:	Aşıklı höyük	
901-999:	Can Hasan III	LPPNB (7500-7100 cal BC)
1000-1500:	Çatalhöyük	
1501-1600:	'Ain Ghazal	

1601-1620:	Basta	
1621-1630:	Tell Ramad	
1631-1640:	Höyücek	
1641-1650:	Tell el-Kerkh	
1651-1670:	Tepecik	
1701	‘Ain Jammam	
2000-2020:	Pınarbaşı	
2021-2040:	Zaghe	Early Ceramic Neolithic (7100-6600 cal BC)
180-200:	Köşk höyük	
2041-2060:	Ginnig	
2061-2080:	Hacılar	
2081-2112:	Yarim tepe	
2113-2120:	Ulucak höyük	
2121-2140:	Aşağı Pınar	
2141-2160:	Tell Sabi Abyad	
2161-2170:	Tell Assouad	

Cardinal Location Within Site: This applies not only to the location within the excavated area, but the assumed extent of the settlement or mound. The locations are divided into *central*, *northern*, *southern*, *eastern* or *western* periphery. When an event does not fall neatly within the five categories, the direction nearest the greatest concentration of human activity is chosen.

Broad Context: There are 9 possible descriptions for this attribute: *Extrasettlement* applies to those deposits that are away from the main settled areas. A *midden* is defined as an area with repeated dumping events. A *non-bounded open area* within site is distinguished from a *courtyard*; which is a bounded area related to or attached to structures. Structures are considered *domestic* when there is evidence for roofed subsistence activities such as food processing, and no evidence to indicate monumental ritualization of the structure. A *non-domestic structure* is a construction without a clear domestic purpose; these may include silos, and outdoor plastered working areas. A deposit that is classified as *related to non/domestic structure* is near enough that the association is clear, but not within the structure. A *cemetery* is an area designated for inhumation, not within structures. The designation *In structure (use unknown)* was largely used for those sites that were excavated before micromorphological chemical analyses were available, without sieving, or when there is still controversy over the potential domestic nature of a structure (as at Göbekli tepe).

Specific Context: The attribute describes the most obvious explanation of the location of a deposition. When there are two specific contexts, a second drop-down box (called specific context 2) can be used. Most objects will be *In*, *On*, or *Near* a: pit, post-hole, floor, threshold, wall, niche, window, bench, hearth, oven, basin, bin, platform, pillar, grave,

midden, wall-painted, fill. A *post-hole* is distinguished from a pit by regular, smaller size and steep walls. A *threshold* is the intersection of two spaces, marked by a raised floor or doorway. A *niche* is a hollow in a wall that does not penetrate through to the other side, while a *window* is a hollow in a wall through which one may pass items. A *bench* is narrow raised area, often against a wall that a human may sit on or use as a low table. A *platform* is also raised, but is much wider and not usually very tall. A *hearth* is an uncovered area for fire, while an *oven* is a covered fire installation. A *bin* is a plastered storage area, often built up from the floor. A *pillar* is a free-standing object, often sunk into the floor and appears to be load-bearing. A *grave* is a human burial dug under the surface. *Midden* is an area of repeated dumping events. *Fill* is the material that is intentionally placed in a hole, pit or empty building to remove a vacant space.

External Associations: This term is used to describe objects that are not within the structured deposition but appear to be relevant due to proximity. If there is more than one external association, a second drop-down box can be selected. Potentially meaningful external associations could include: Other structured deposits, painted surfaces or food storage facilities.

Character of Placement: *Vertical* is in terms of orientation, the object is not touching any basal surface. *Upended* objects are in contact with a basal surface. *Horizontal* objects may be lying on a basal surface, but *horizontal and upended* objects are lying on a slim or unnatural edge.

Visibility: This refers to the probable visibility of the deposition at the time of use, not at the time of excavation. *Clearly visible* depositions would have had an unrestricted line of sight from within the same structure as the deposit, or from the centre of the site. *Invisible* depositions were placed in pits or buried in fill. *Partially visible* objects were obscured by structural features or by the deliberate placement of other objects. *Plastered over* is also considered a type of intermediate visibility, as the surface of the object is not visible through the plastering event, but its location is clear.

Quantity: How many (*e.g.* pieces of obsidian) are in the deposit.

Total Types of Material: This numerical description applies to composite artefacts, such as a plaster object with an embedded horn core.

Main Material: Applies to homogeneous and composite objects. *Ground stone* is divided into 9 separate categories based on the type of stone used. *Ground stone-unknown* is used when no indication is given in publication. Chipped stone is divided into *obsidian* and *chipped stone – not obsidian*. Animal bones are divided into *horn, antler, tusk, long bone, scapula, knucklebone, claw/talon, tooth, cranium, articulated animal bone* and *disarticulated animal bone*. When the element was unclear, I selected disarticulated animal bone. *Human bones* were similarly divided by element and articulation. Other commonly

used descriptions included; *unworked stone, plaster*, clay and ceramic. *Clay* objects are thicker and untempered, while *ceramic* objects are tempered and intentionally subjected to heat. Less common materials included shell, seed, matting and basketry.

Secondary Material: Applies only to composite objects.

Elaboration: Has the object been altered been human hands? Has it been *incised, coloured, sharpened, pierced, rounded, shaped*, moulded into a *figurine*, or rolled into a *sphere*? Clay balls were recorded as having been *spheres*; while all chipped stone was recorded as *shaped*.

Decoration: If there was no elaboration, there can be no decoration. Common decorative forms included *ruminant* shapes and *anthropomorphic* design. Pillars, especially those with hands, were considered as evidence of anthropomorphic decoration. Geometric designs, parallel lines, and the image or shape of birds and felines were also found.

Condition: This attribute describes the condition of the deposit at the time of its deposition. Unused items showed no microscopic wear. Worked items had been deliberately shaped. Complete items were unbroken. Deliberately broken items are the result of active violence before their deposition, and can be identified though a great deal of effort required to damage an object (such as shattering a thick stone); or regular edges along a break that appear to have been scored or cut.

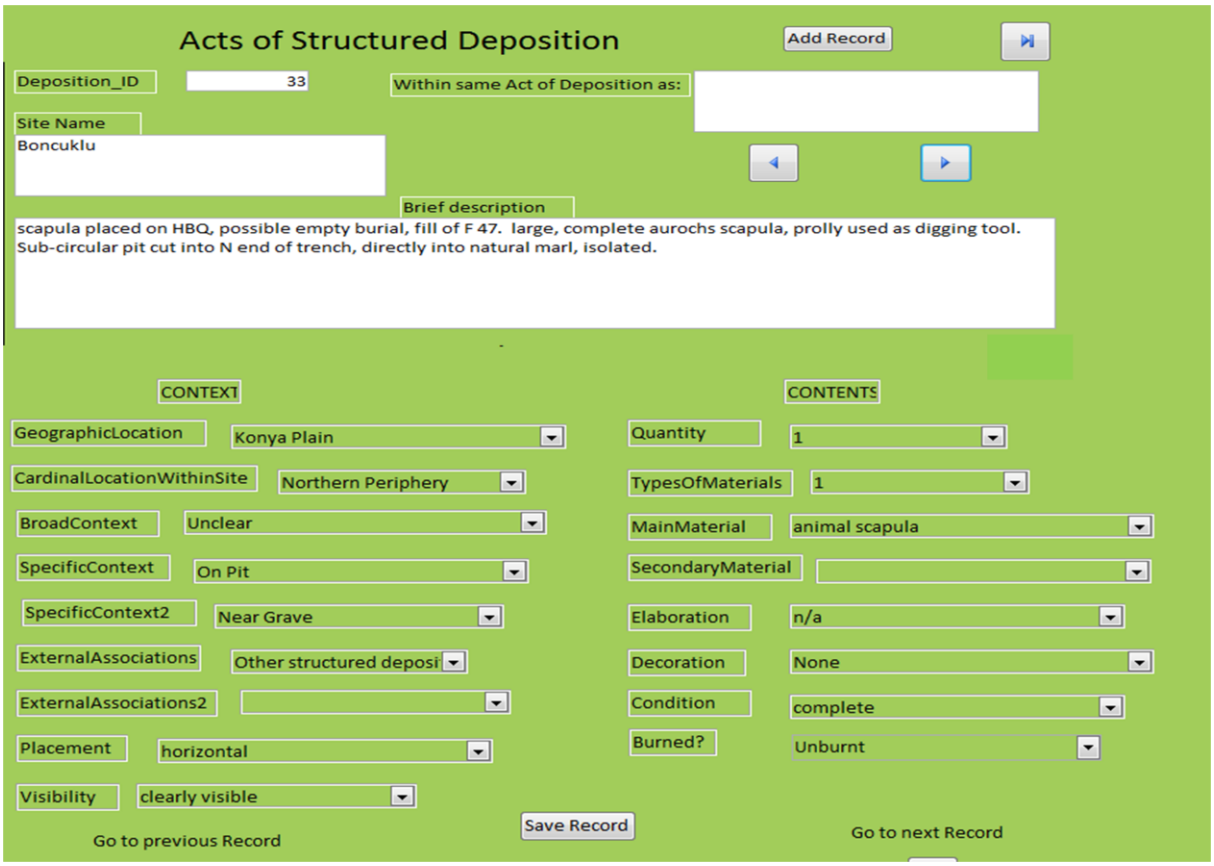

Figure 5.2: Screenshot of one deposit as entered into the structured depositions database.

The attributes, or variables, were then statistically analysed for patterns. There are over six billion possible combinations of attributes between contextual variables alone. Especial care was taken to analyse relationships between attributes of context and content. Both pattern-seeking and the subsequent search for meaningful associations through the use of statistical analysis (see 5.9) allow for quantitative analysis of qualitative variables.

In summary, after becoming familiar with strandard practices across a site, or at certain phases within a site, one can then identify anomalies as potential ritual acts. The quanitification phase involves data entry into the specially-designed database and analysis of the entries. Much of the analysis involves querying the database for possible interrelationships between elements (Fig 5.3).

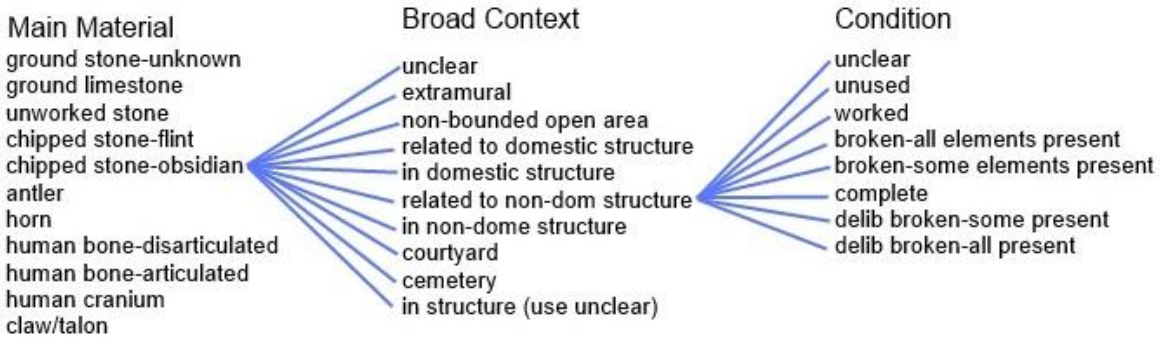

Figure 5.3: Possible interrelationships between database elements (part of the quantification, or third, step of the model outlined in Table 5.3).

The identification of possible symbols (or 4th step in the new model) was not included in the database, as this attribute is not empirically quantifiable, in the same sense that presence or absence of sharpening or burning is. After the analyses of content and contextual variables were performed, the results were organized to investigate possible symbolic meanings of location, material, or treatment. The emotional meaning of symbols is often overlooked in favour of the cognitive meaning, yet a "study of symbols must include the study of sentiments" (Lewis 1977: viii). Symbolization is a key element of identifying something as a ritual act, so at this stage if no potential avenues of symbolization have been identified, the likelihood of the act withstanding a ritual interpretation is very low.

Once potential avenues of symbolization had been identified, the bulk of interpretation began.

No model is perfect, yet the benefits of this one far outweighed the costs in terms of the time and effort in the creation of the database and the few false positives. The initial work in the creation and testing of the database was immense, and the population took over a year. While this was a heavy cost, it has been done and is now available for other

researchers to use. The inclusion of "obviously functional" deposits allowed for a broader investigation of possible symbolization without falling victim to the wholly contemporary separation of ritual and mundane paraphernalia. Indeed, many of these "functional" deposits withstood interpretation, while other, more unusual deposits were no longer considered ritual. One of the false positives was a piece of chipped obsidian found in the mortar between two mud bricks at Boncuklu. Its size and position, in addition to its odd location, suggested its placement was the result of framing behaviour. However, analysis determined that the piece of obsidian had been accidentally mixed in with the mortar. The other framed obsidian pieces from Boncuklu had been placed in a pit or a cache, with other artefacts. Other objects placed in walls (ostensibly for protection, focusing attention or to strengthen walls) extended through the walls and were visible from the inside.

Other problems that were flagged stemmed from an initial rearrangement of geographical categories in the database: the Middle Euphrates and North Euphrates categories were combined, as were the Zagros foothills and the Mesopotamian Plains. This was addressed during the analysis stage (See Chap 6), but could easily be solved by importing the data into a new database with more categories, and altering the mistakes by hand.

Perhaps the greatest contribution of the database is how it allows for multiple quantifiable aspects of contextualization to be considered. Contextualization makes sure that ritualization or framing was appropriate, and not simply flagged by the excavator due to a gut feeling. Rigourous contextualization also avoids inappropriate cross-cultural lumping, such as the assumption that a "skull cult" persisted across the Near East for thousands of years and kilometres. The focus on within-site patterning of previous investigations of structured deposition can also be expanded through analysis of the larger context, allows for regional or chronological trends to emerge from the data.

The ultimate goal of interpretation in the archaeology of ritual is to attain a window into past belief. This is most expediently achieved though the attempt to see the entanglements that created emergence. Success is never guaranteed, but the constant progress in archaeometrical investigations allows for more and more evidence to be gleaned from scant remains.

5.9 Description of the Statistical Tools

After the data had been entered into the Access database, it was translated into Excel in order to perform certain tests. These two tests were chosen as they can correlate the particular type of variables available. Rather than continuous, or quantitative, variables (such as numbers or ratios), the majority of the variables used to describe the attributes in the database are categorical, or qualitative. Because different types of decoration, for example, do not have an intrinsic order, nor can they be made dichotomous, any given type of decoration is called a nominal variable. Very few statistical tools deal with nominal

variables. The first test, called Pearson's χ^2, tests for the independence between nominal variables by comparing the observed and theorized frequencies of the variables. A contingency table is made with the two variables to see if one affects the other (Fig. 5.4). For example, whether cardinal location of deposition is affected by the material of the deposition:

	Centre of site	Periphery
Bone		
Not bone		

Figure 5.4: Example of a contingency table testing the relationship between bone and central depositions.

There are three steps to calculating the in/dependence of variables. The first is to find a value for the χ^2 statistic. Second, the degrees of freedom (d) would be calculated, but since the number of variables tested is always two, d=1 for this experiment. Finally, the χ^2 value is compared to the χ^2_d distribution to find the P-value, or chance that random sampling could provide the same association between variables. To find the χ^2, the following equation is used:

$$\mathrm{X}^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

O_i is the observed frequency of the variable. E_i is the expected (or theoretical, assuming no relationship between the variables) frequency. *n* is the number of cells in the table. The calculation for the χ^2 statistic looks like the following:

x^2 = 15.77144

Exp	Centre	Periph	Total
Bone	29	14	43
not bon	11	33	44
Total	40	47	87

theoretical	Centre	periph
Bone	19.77011	23.22989
not bone	20.22989	23.77011

	categ #	Oi	Ei	Oi – Ei	(Oi-Ei)^2	((Oi-Ei)^2)/Ei
centre bone	1	29	19.77011	9.229885	85.19078	4.309068
periph bone	2	14	23.22989	-9.22989	85.19078	3.667292
cntr not bone	3	11	20.22989	-9.22989	85.19078	4.211135
perip not bone	4	33	23.77011	9.229885	85.19078	3.583945
					x^2 =	15.77144

Figure 5.5: Example of a contingency table with values.

The P-value is calculated by comparing the χ^2 statistic to a χ^2 distribution table (Fig 6.3). The higher the χ^2 value, the lower the P-value, and more likely associations are not random.

A probability of 0.05 or lower is the standard for the claim that the row variable is dependent on the column variable (Drennan: 2009).

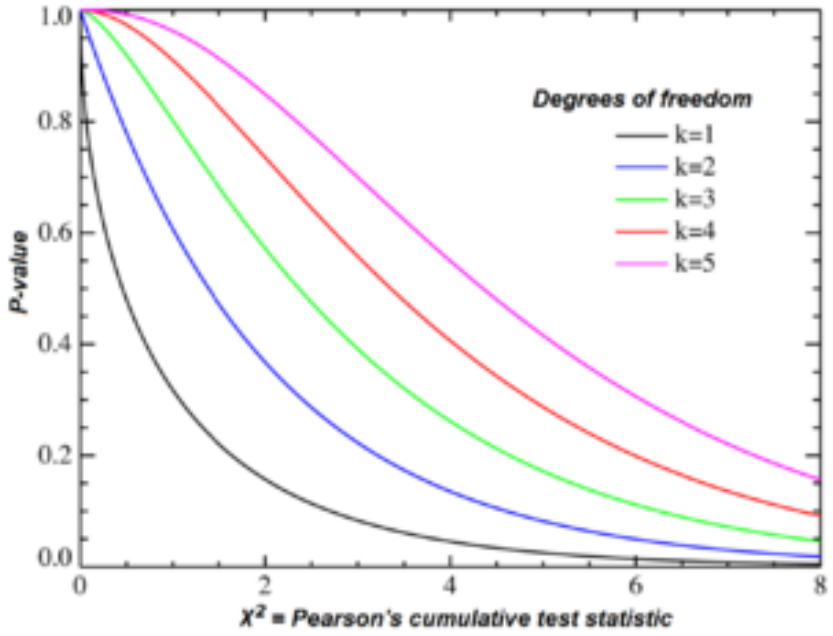

Figure 5.6: χ^2 Distribution table.

The second test, Fisher's Exact test, looked at specific relations between variables to determine the chance that random sampling could produce the same (or better) associations. When the P-value, or chance that random sampling could provide the same association, is far from 1.0, then the results are statistically significant. There are, of course, varying levels of statistical significance. There are three different methods used to calculate the two-tailed P-value for Fisher's test, and I chose the most commonly used method; summing small P-values. The Fisher's Exact test was used in conjunction with the χ^2 test, as the χ^2 is not as accurate when used on contingency tables, or in the event that n>5 for any cell in the table. χ^2 is preferred when there is a very large sample size, or when contingency tables are well-balanced.

In order to test the broadest scope of possible correlations, each variable was tested multiple times, using both Pearson's χ^2 and Fisher's Exact tests. An animal jaw would be included in the tests for jawbones, cranial elements, animal bone, and all bone. Each of these would then be tested against each of the other variables from each of the tables.

There are certain weaknesses of the data and assumptions that must be made with any statistical test. The Fisher's test assumes that the variables are independent of each other. In a laboratory experiment, one variable is altered, and the changes of the second variable are dependent on the first, or independent variable. There are no such controls in

archaeology. Dependence of variables may be inadvertently created through the structure of research. In order to avoid the traps of dependant variables, I took extra care to note the context of the entire excavation, in case all trenches were opened on the western periphery, or only structures were excavated.

Perhaps the greatest weakness of this sort of data is that the methods of recording and the decisions of what to record have varied greatly across the sites. It is very rare to find an attribute that has a 100% record rate. For example, of 391 instances of structured deposition in the Konya Plain during the PPNB (an extremely well-recorded area), only 95 have any information about the state of burning, while 375 have their specific context recorded. In this case, statistics performed on burning ratios are very unlikely to be representative of the entire population, and are not used.

An example of a successful test follows. To decide whether Euphrates sites differ in elaborated (altered by human hands through sharpening, chipping, decoration, etc) objects over time, the following contingency table is made:

	PPNA	PPNB
Elaborated	5	8
Not elaborated	27	3

Table 5.5: Contingency table of elaborated objects.

Performing a χ^2 test on the grid above, we get a P-value of 12.65474. This is rather impressive, but we will run a Fisher's Exact test, as one of the cells has fewer than 5 elements.

Performing a Fisher's Exact test on the grid above, we get a P-value of 0.0010 (extremely statistically significant). Thus, we can conclude that the elaboration of artefacts was dependant on the time period in which they were deposited.

5.10 Final Concerns

We use method to distinguish between truth and belief. The claim has been raised that any method is "impure" as it has been tainted by the minds that created it (Lucas 1997: 40). Mental phenomena have both objective and subjective elements. Processual methods aim only to grasp at the objective elements, such as the use of symbols. Two archaeologists are less likely to disagree over the use of a loom-weight than over its meaning.

Whenever possible, I have tried to address issues of excavation bias and research bias at particular sites in following section, when they are pertinent to the interpretation and analysis of results.

Finally, "it is an empirical question whether, or to what extent and in what areas, human behaviour is systematic, constrained, or uniform enough to support reconstructive inference from accessible to inaccessible contexts" (Wylie 1993: 21). In order for archaeology to proceed with any method, be it processual or interpretive, this basic assumption must be made: that answers are possible.

Chapter 6: Results and Interpretation

6.1 Introduction

This chapter will review the patterns and trends found in the data as a result of the analysis described in 5.9, consider their statistical significance, and then bring in themes touched on in Chapter 4 to consider their relevance to the larger picture of the Neolithic of the Near East. The main questions that drove this analysis included an overall assessment of the model described in 5.4; to include or exclude certain acts of depositions based on the overall trends (6.4 and 6.5); and to evaluate the success of this type of analysis. The purpose of this particular type of analysis was twofold: to assess robustly (rather than simply intuitively) the possibility that an object or deposition had a ritual use; and also to go beyond description and to say more about the nature of patterning to provide a broader understanding of ritual in the early Neolithic of the Near East.

This introductory section serves to describe the purpose and structure of Chapter 6. In order to explore a wide range of relationships between different features of the data set, I will begin by describing the data according to *broad geographic regions*; *e.g.* what may be said about depositions in the Aegean region during the Neolithic in section 6.2.1, and then progressively narrow the scope.

Section 6.3 will describe the results of database manipulation according to analyses of context and contents. These will be general conclusions about the nature of structured deposition in the Near East; things that are true of the *entire dataset*, without respect to location or chronology.

Each subsection will focus on *a single database attribute*, in the order in which the attributes were entered into the database. For example, 6.3.1 will consider broad location; 6.3.2 will focus on specific location; 6.3.3 will describe main material, 6.3.4 visibility, 6.3.5 decoration, 6.3.6 number and types of materials, 6.3.7 placement, and 6.3.8 quantity.

Section 6.4 focuses on the patterns found when analysing structured depositions separated *chronologically*. 6.4.1 will be concerned with a description of the major trends contemporary with the PPNA and earlier, while 6.4.2 will describe trends contemporary with the PPNB. Section 6.4.3 will be organized in the same was as section 6.3: 6.4.3.1 will describe broad context shifts between the PPNA and PPNB; 6.4.3.2 will consider shifts in the specific context of structured depositions between the PPNA and PPNB; and so forth.

The next section, 6.5, will consider first those depositions dated contemporary with the Ceramic Neolithic, and describe changes across all three time periods. I will return to the main questions in 6.6 to assess if and how they have been answered.

6.2 Synthesis and Analysis of the database results.

6.2.1 Description of the data according to Geographic Region

I will begin this section with an overview of the data grouped according to geographic regions and some of its more obvious conclusions and limitations. The first five subsections, 6.2.1a-e, are concerned with structured depositions in regions peripheral to this study, but included for comparison. The first subsection concerns those depositions in Thrace, the second the Aegean, third the Lake District, fourth the Balikh region, and finally the Levant (See 4.2 for a description of these areas). The main focus of the study begins in 6.2.1.f with a description of the structured depositions from the Zagros and Upper Mesopotamian regions. In describing all of these depositions, I will make use of the terminology described in 5.8.

6.2.1.a Thrace

The one clearly identifiable structured deposit from Aşağı Pınar was given several database entries, as it was comprised of several objects. A sheep skeleton surrounded by 8 pots was found on the floor of a (probably intentionally) burned house belonging to Ceramic Neolithic layer 6 (E. Özdoğan 2011: 220). This room may originally have been part of a structure that was split first into rooms 3 and 2, and then again into 2b and 2a.

6.2.1.b Aegean

An interesting association is found at Ulucak höyük. A stone bowl (DB ID# 2112) containing 2 figurines (2111 and 2114) and fragments of flint (2113) was placed before a wall painted browninsh-red in Building 13, level IV. The association of flint and figurine in a bowl is repeated in Building 6 as well (2115-2118), though with the addition of some obsidian tools. Other associations between flint chips and figurines are found across level IV, but with no evidence for placement (Çilingiroğlu 2009: 60). The presence of grain, bins, loomweights and other household tools shows that both of these buildings can be considered as domestic structures.

6.2.1.c Lake District The depositions identified as having been framed occurring in the Lake District were mainly from the sites of Höyücek and Hacılar, with a few from Bademağacı. Of these 14 instances, 11 occurred in non-domestic structures, and 1 in a domestic structure. This shows the tendency for Lake District sites to sequester their structured depositions in specialized buildings, even though the majority of structures appear to be domestic in nature (Duru 2001). As all of the human bone came from one site, and the total number of depositions is quite small, no regional correlations based on bone distribution will be valid. The specific locations of the depositions were quite varied; on floors, in pits and niches, on basins, thresholds and platforms, though 9/14 acts of deposition (both single and multiple) were externally associated with other structured depositions. In other words, more than half of the identified ritually-structured deposits in

the Lake District were placed near other ritually-structured deposits. This propensity for grouping multiple events of structured deposition could show the importance placed on the object, or the relative unimportance of the specific location of the act. This would depend on if it could be demonstrated that the clustering is due to a single depositional event, or multiple special depositions. If there is only one depositional event, then the power of the act would then come from a concentration of objects or depositions, not from a location with culturally-accepted significance. 6/8 elaborated items came from Höyücek, and 4/6 non-elaborated items came from Hacılar, showing micro-regional differences in the types of objects preferred for special treatment.

6.2.1.d Balikh The Balikh region entailed the sites of Tell Sabi Abyad and Tell Assouad. Of 13 acts of deposition, 12 came from Tell Sabi Abyad. One animal skull in the threshold of a domestic structure is the only act known from Assouad. Despite this, the overall ratio of animal bone to other depositional material is quite low. 11 of the 12 deposits from Tell Sabi Abyad were likely part of the same event; the plaster "monsters" which fell from the roof of the level 6 building V (Akkermans and Verhoevan 1995). The other structured deposition from Tell Sabi Abyad is a south-facing burial of human skull parts in the fill of Level 2. The relation of this skull to structural elements was unclear at the time of analysis, but the other 12 acts of deposition from the Balikh region occurred in domestic structures.

6.2.1.e Levant The Levantine region has 29 deposits from the Epipaleolithic through the LPPNB. This chronologically-separated range of depositions is distinguished from the Lake District and Balikh regions, wherein all the known depositions come from the same era. 3 acts of structured deposition are clear from Wadi Feynan 16; 4 from Hatoula; 9 from 'Ain Ghazal; 2 from Basta; 10 from Tell el-Kerkh; and 1 from 'Ain Jammam. The deposits from Tell Ramad and Aswad were not included due to the paucity of detail in publication. In addition to the chronological range of the acts of structured deposition, the context and contents of Levantine deposits cover a broad spectrum. More deposits occur in domestic structures than in non-domestic. Nearly half of all deposits are hidden from view; in pits or bins. Nearly half are bone, and nearly half had been worked on by humans.

6.2.1.f Zagros and northern Mesopotamia The sites grouped together in the Zagros and northern Mesopotamian region provide this study with 31 deposits, of which 19 were found on the floor. All the others are in the fill or in pits, with the exception of two: an animal cranium from Ganj Dareh found in a niche, and an animal cranium from Ginnig stuck in a wall. This is notable as Ganj Dareh and Ginnig are the latest known Neolithic sites in this meta-region with structured depositions. It is interesting to note that no early site in the Zagros has depositions associated with walls, even though many are in or associated with structures. While human crania are known from Nemrik 9 and Qermez Dere, the only early site with animal crania is Zawi Chemi Shanidar. No external associations from any early site were noted, though many of the Ginnig depositions were found positioned in relation to

other objects. Of the sites dating to the PPNA and before, 5 depositions are recognized at Qermez Dere; 2 from Zawi Chemi Shanidar; 1 from Mlefaat; 9 from Nemrik 9; 1 from Karim Shahir. From the sites dating to the PPNB and later, 2 acts are found at Ganj Dareh; and 11 from Ginnig.

6.2.1.g Batman The Batman region produced 11 examples of structured deposition; 9 of which were from Hallan Çemi, and all of animal bone. Of the Hallan Çemi depositions, only one was in any kind of structure, and, though found on the floor, it was thought to once have been suspended on the back wall. The other 8 were conspicuously-placed cranial elements in the central midden area, with the notable exception of an articulated bear skeleton at the bottom of a 6m pit. Another pit was topped by an antler; a group of three antlers was found plastered together upright and crossing each other in a deliberate pattern; and of special note is a skull in the centre of the midden area with a polished red stone placed in its mouth. The one structured deposition from Demirköy was a fully articulated canid skeleton in a non-bounded open area within the site. The only recognized instance of structured deposition from the slightly later[5] site of Körtik tepe was the skeleton of a yearling sheep. The plastered skulls and tortoise carapaces covering the faces of 16 inhumations are not considered as acts of structured deposition, as they are part of the standard burial package at Körtik tepe and therefore, not within the scope of this inquiry (See Çoşkun *et al.* 2010 for more discussion). Structures are known from both Körtik tepe and Hallan Çemi, so the preponderance of ritual deposits outside structures is not due to excavation focused away from buildings.

6.2.1.h Cappadocia The Cappadocian region had 2 clear depositions from Aşıklı höyük; a pair of deer antlers placed on a clay-plastered floor of the earliest level dating to the 2nd half of 9th mil CAL BC (Özbaşaran 2011: 31) and a pile of cattle bones placed on a red-painted bench in the large structure, covered in a sprinkled layer of red ochre from the widely-excavated level 2 (Özbaşaran 2012: 144). The 17 remaining depositions came from Köşk höyük, a later Ceramic site. None of the depositions from any Cappadocian site were primarily associated with walls, though all were found in or related to domestic structures.

6.2.1.i Ergani The Çayönü material was considered as its own geographic entity despite its many similarities to the Batman and Northern Euphrates assemblages. The paucity of other known sites on the Ergani Plain, coupled with the extremely long sequence of habitation called for special treatment. Indeed, the depositions share characteristics with those of both the Batman and Euphrates sites. Of 10 acts of structured deposition, 3 were in a domestic structure; 2 in a structure of unknown use (ground stone fragments in the floors of the Terazzo and Flagstone buildings); 2 in non-bounded open areas (like the majority of depositions at Batman sites); and 3 in a non-domestic structure known as the "skull building." The bone depositions from the skull building come from different periods in

[5] While ongoing excavation suggests initial settlement during the Younger Dryas, at the time of analysis, all excavated layers were dated after Hallan Çemi and Demirköy.

its use, and the variability of the depositions shows how experiment and non-codified behaviour may have been encouraged. An aurochs skull hanging from South wall of the earliest BM2 is comparable to the much earlier hanging skull from Hallan Çemi. During the life of the second skull building, BM1, a pair of *Bos* horns was placed on a pit with human bones, covering a great disarray of skulls and bones. This again shows kinship to the types of deposits found in the Zagros and Batman regions. A pair of antlers covering a pit is known from Hallan Çemi, and antlers atop human crania from Nemrik 9. Even after the destruction and burial of the skull building, variability in the association of animal bone with human mortuary practice continues. A large, tusked boar jaw was placed on the clean earth over a double burial in a cell. This burial was the only one in that cell with mortuary gifts, so it is not surprising to see it is also the only one marked by the placement of a toothy jaw atop the grave. The single deposition from a wall is the aurochs skull from a late iteration of BM2, while 5 (4 ground stone from the PPNA, and 1 clay vessel from the PPNB) acts were found on floors. No human or animal bone had been altered or intentionally destroyed, while all ground stone depositions were first intentionally destroyed, and the upside-down clay vessel filled with red ochre from BM2b was found complete. Just as the common mortuary acts from Körtik tepe were excluded from this study, so too are most of the human skull depositions in the "Skull Building." The sheer number of decapitated skulls displayed in BM1 and BM2 lend strength to the claim that decapitation was part of the standard mortuary practice at Çayönü. The aurochs and horns are rarely found both singly and carefully placed, either within or without the skull building, thus their inclusion in the set of specially-deposited objects from Çayönü.

6.2.1.j Konya The Konya material is dominated by the PN, especially the exceptionally-well excavated Çatalhöyük, providing 401 of 419 recorded depositions. 7 plaster forms with bone inclusions are seen at the later habitation at Pınarbaşı, and 1 pair of articulated canid skeletons in a threshold is known from Can Hasan III. The period contemporary with the PPNB is seen in the animal bones and clusters from both Pınarbaşı and Boncuklu; and one human cranium from Boncuklu. The deposits contemporary with the Pottery Neolithic are seen at Çatalhöyük and in the plaster forms from Pınarbaşı. The huge majority of depositions in the Konya Plain come from domestic structures. There are 63 instances of chipped stone deposition, and 69 of the more plastic materials; ceramic, clay and plaster. 219 depositions are of bone, of which 13 are human. Over half of the Konya depositions are invisible, single, or made of one type of material.

6.2.1.k Urfa The 40 structured depositions from the Urfa sites are restricted to Göbekli tepe (n=22) and the slightly later[6] site of Nevalı Çori (n=19). The Gritille evidence was not made available, and published information about the clay pieces found in hearths was vague. One articulated fox tail, possibly worn as a skin, was deposited in front of the Fox pillar in building A at Göbekli, and 4 human crania were found in pits within domestic

[6] Only the earlier, Level III structures are included from Göbekli tepe.

structures at Nevalı Çori. One piece of unworked ground stone was found in a pit in a domestic structure at Nevalı Çori. Aside from these six acts, all structured depositional events in the Urfa region are of carefully shaped ground stone. The restricted excavation area associated with level III at Göbekli tepe did not include investigation of common areas beyond the structures of what may be a massive complex of special buildings.

6.2.1.l Northern Euphrates The Northern Euphrates subregion includes 11 events from Cafer höyük; 9 from Abu Hureyra; 12 from Mureybet; 7 from Tell 'Abr; 7 from Jerf el-Ahmar; 1 from Cheikh Hassan; and 2 from Mezraa-Teleilat. Overall, 26/49 acts were in domestic structures; 8 in courtyards; and 12 (from Cafer, Tell 'Abr and Jerf el-Ahmar) in non-domestic structures. Only 12 deposited items were not bone; 3 clay from 'Abr, Jerf el-Ahmar, and Cafer höyük; 1 chipped flint from Cafer; 1 chipped obsidian from Cafer; 4 ground stone from Cafer; and 2 ceramic pieces from Cafer. Overall, the acts from Cafer höyük show the most variability. The earliest depositional events from Mureybet (level III and before) are largely animal bones in walls or benches. Later (level 4, EPPNB) depositions are human skulls. All of the recorded acts of structured deposition from Abu Hureyra are from the Neolithic occupation. A cache of flint blades was deposited in a house in phase 2. Animal remains are found in Phases 2 and 4. Human cranial depositions are largely in the later phase 8, with one coloured skull (the earliest burial from the site) just outside the earliest structure known from the site, in phase 4. At both Mureybet and Abu Hureyra we clearly see the focus change from a preponderance of animal bone depositions during the PPNA and earlier, to human bone depositions during the later periods.

6.2.2 Concluding Remarks

The previous sections set the stage for the coming analyses by describing briefly the overall set of depositions within each geographical area. Having identified potentially significant general patterns though a description of the data trends according to geographic region, I will be able to return to these observations and, together with the results of the upcoming analyses, interrogate the specifics of the data.

6.3 General associations between elements

Analysing for patterns inclusive of the data from all regions and all time periods serves to provide a baseline so that a comparison might be made once the data had been apportioned according to geographical region or time period. Looking at the database as a whole, some interesting correlations can be drawn between the attributes of structured depositions in the Near East. I will first describe the data in terms of each sectional filter (as described in 5.8), then tease out comparisons and correlations.

6.3.1 Broad Location

There are 543 depositions in some kind of structure: 468 in a domestic structure; 47 in a non-domestic structure; and 32 in a structure of unknown use. There are 52 depositions not in a structure, and of these, only 1 is extramural. 3 are found in a midden; 12 in a non-bounded open area within the site (all from the PPNA and earlier; from Batman, Zagros or Çayönü); 24 are related to but not in domestic structures; 1 is in a dedicated cemetery, and 12 are in a courtyard (8 N Euphrates, 1 Zagros, 3 Lake District). 47 acts have no recorded information about broad location.

I then separated the data into groups to look for correlations between different types of broad context and material, burning, elaboration, placement, cardinal location, fragmentation and specific context.

Separating the data into the depositions *within structures* and those *not within structures* provides a few significant statistical correlations: cardinal location, elaboration and visibility (Table 6.1). The depositions in structures were more likely to be found in the eastern and western peripheries of the site, while those outside of structures were far more likely to be found in the northern or southern peripheries of the site. This statistic is highly suspect, as nearly half of the deposits external to structures did not have any discernable information as to cardinal location. However, 19/54 total deposits external to structures were placed in the northern periphery of the site. Of these, 18 came from the Konya Plain and 1 from the Euphrates site of Abu Hureyra, suggesting a possible local trend in northern, external placement of objects.

In addition, objects placed in the central part of a site were far more likely to be outside structures. This may reflect on a general pattern of settlement organization, with a central activity area devoid of structures. Elaborated items were also more likely to be found specially-deposited inside structures than outside of them. While it might be suggested that a greater majority of elaborated items were deposited inside the structures in which they had been used or created, the presence of jars, bowls, braziers and ceramic balls – typically associated with food processing activities – were found specially deposited in areas external to structures, when the structures had evidence for internal hearths.

There were no significant correlations when comparing any one type of visibility against all the others (*e.g*. invisibly-placed *vs.* clearly, partially, or plastered over). Combining those deposits that were partially visible with those that had been plastered over, and comparing that sum to the sum of the clearly visible with invisible deposits did produce a statistically significant correlation. This seems to suggest that there was a difference between absolute visibility (totally invisible or totally visible) and intermediate visibility. Intermediate visibility was more appropriate within structures, perhaps because by entering a structure one was already within the sphere of influence of the deposited object, and its absolute visibility was not as crucial to maintain. Additionally, all three of the external objects placed with intermediate visibility may have been part of a larger deposit that was not preserved.

All time periods	E-W	N-S	Central	N,S,E, or W periph	Elabora-ted	Not elab	Plasterd or part visible	Clearly, invisible
In a struc n=534	222	242	34	464	347	189	96	343
Not in a structure n=54	6	21	13	27	22	30	3	43
	P=0.0097		P <0.0001		P=0.0024		P=0.0118	

Table 6.1: Statistically significant correlations between depositions in and out of structures.

Comparing depositions in *domestic structures* with those in *non-domestic structures*, there is a clear preference for the horizontal placement of items in both types of structures, yet while placement in non-domestic structures is roughly equal between horizontal and vertical placement, in domestic structures horizontal placement is recorded 40 times more often (Table 6.2). This is disproportionate to the difference in numbers of domestic and non-domestic structures, both of which have floors that could, ostensibly, account for horizontal placement. This may reflect on the function of the ways in which these floors were used, or may shed light light on the nature of the different ritual acts in these structures.

The clearest distinction in the materiality of depositions between domestic and non-domestic structures lies with fragmentation, though much care is required in the analysis. Comparing the depositions recorded as broken and those recorded as deliberately broken, we see that every single fragmented deposition in a non-domestic structure had been deliberately broken, while those in a domestic structure were 4 times more likely to simply be broken, rather than intentionally so. Even though the statistic is extremely significant, it is wise to remember that certain materials, such as bone, are more easily fragmented, and the intentionality of their destruction can be more difficult to determine. It is curious indeed that there is no statistical significance in the comparison of all complete with all broken depositions. This dearth suggests that there is indeed a difference in the nature of the ritual acts that took place in each type of structure.

All time periods	E-W	N-S	Central	N,S,E, or W periph	Delib broke	Broke	Invis	Part, Plastd or Clearly
Dom str n=468	204	214	20	414	30	118	251	121
Non-dom structr 46	26	10	7	36	12	0	17	24
	P=0.0086		P =0.0066		P<0.0001		P=0.0016	

Table 6.2: Statistically significant correlations between depositions in domestic and non-domestic structures.

When the depositions from structures of an *unknown* or unclear use are assumed to be *non-domestic*, and added to the depositions from non-domestic structures and then re-compared to those from domestic structures, many more extremely significant correlations appear. Domestic structures have depositions that are largely bone, elaborated, broken, horizontal, and on the wall. Structures that cannot be described as domestic (either classified as non-domestic or as unknown) have depositions that are, in the majority, exactly the opposite: not made of bone, not elaborated, deliberately broken, vertical, and on the floor. While more depositions occur in non-domestic than in unknown structures, when the two are combined (as in table 6.3) previously significant correlations become extremely significant. The exception occurs looking at the main material of the depositions; as the addition of the use-unknown structures doubles the number of non-bone items, but only adds three items to the bone depositions. This skews the correlation heavily enough in the favour of non-bone depositions that new statistical significance is found.

These differences in special deposits between domestic and non-domestic (and other uncertain) structures may serve only to reinforce in a cyclical manner what is already assumed by the disparate nature of these structures (they're different because they're different because...). However, the stark contrasts suggest that, at least some of the time, these unkown structures served as non-domestic buildings, and that the types of activities and the types of rituals that took place in each were quite distinct.

The preponderance of specially-deposited items not made of bone in non-domestic (and unknown) structures is striking, especially considering how close the proportion of bone to other material in domestic structures reflects the overall proportion of bone to other material (as in Tables 6.9 and 6.10 below). The high proportion of these inorganic materials that had been elaborated (48/50) suggests that great care was taken in the selection and modification of items that were deployed in rituals that were held in, or had experienced their final stage in non-domestic (or unknown) structures.

The greater proportion of deposits in non-domestic (or unknown) structures in the centre of sites initially may be seen as a result of the tendency to place non-domestic structures in the centre of a settlement. Looking to the data, excavations at Göbekli tepe and Tell el-Kerkh have focused on the centre of the mound, so it is not clear if this is the centre of the settlement. The remaining depositions described as central come from a non-domestic structure from Wadi Feinan 16, which is in the centre of the settlement; and a structure of unclear use from the centre of the excavated area at Köşk höyük.

All time periods	Bone	Not	Central	N,S,E, or W periph	Delib broke	Broke	Invis	Part, Plastd or Clearly
Dom str n=468	248	220	20	414	30	118	251	121
Non-dom, or unknown str n=75	25	50	14	38	19	2	23	44
	P=0.0018		P <0.0001		P<0.0001		P<0.0001	

Table 6.3 Statistically significant correlations between depositions in domestic structures and all other structures.

There were *no significant comparisons* between depositions in a courtyard and those in non-bounded open areas. Similarly, no correlation existed between depositions in a domestic structure and those related to domestic structures.

In conclusion, the kinds of depositions we see associated with and within certain types of structures (without respect to geography or chronology) can inform a very general idea of what people were doing that left traces of certain types of rituals. Very broadly, depositions in a structure tend to be in the periphery of the mound; elaborated in some way; and of intermediate visibility, while those external to structures tend to be centrally located; not elaborated; and of absolute visibility (Table 6.4a).

In structure	Not in a Structure
Periphery Elaborated Plast/partial	Centre Not elab Invisible/clearly

In Dom structure	In non dom str
Horiz. Placed Broken	Delib. Broke

In domestic structure	In non-dom or unknown structure
Bone	Not bone

Tables 6.4a-c: Summary of general trends for all time periods and regions, separated by broad location (a- In/Not in a structure; b- In domestic v. non-domestic structure; c- In domestic structure v. In non-dom or unknown structure).

Depositions in domestic structures tended to be horizontally placed, when compared with those in non-domestic structures. Additionally, those depositions placed in non-domestic structures tended to have evidence of deliberate breakage, while those in domestic structures were more likely to have been broken, without evidence as to intent (Table 6.4b). None of these comparisons remain significant once depositions in structures of an unknown use are added to those in non-domestic structures. However, a new contrast arises; depositions in a domestic structure are more likely to be made of bone, while those within unknown or non-domestic structures are more likely to be made of a material other than

bone (Table 6.4c). These differences demonstrate that the ritual activities appropriate to each type of structure involved disparate materials which were manipulated in distinct ways, at least at this wide aperture of inquiry.

6.3.2 Specific Location

All but 12 acts of structured deposition had data as to their specific location, and can be seen in Tables 6.5 and 6.6 below. This is important, as attributes that are well-recorded are more likely to produce statistically significant comparisons, barring excavation biases.

In/on Wall	In/ on Floor	In/on fill	In/on pits	In/on midden	In/on platform	In/on bin	In/on grave	In/on bench	In basin
125	116	99	78	39	25	23	18	17	14
*12 painted (3 Aegean, 9 Konya)									*only 1 from PPNA

Table 6.5: Most common specific locations.

Hearth or oven	In post hole	In/on threshold	In/on niche	In/on pillar
>15	12	>15	>7	2
*2 PPNA, most Konya	*11 from Konya		*All PPNB and later	*Both Çatalhöyük

Table 6.6: Other specific locations.

Comparisons between specific locations yielded largely unsurprising results, especially in terms of visibility. Comparing depositions in or on a *hearth* or oven with those in or on a *pit* or post-hole showed a greater variability in the types and contents of pit and post-hole depositions, as well as a far greater probability of invisibility. Similarly, deposits in a *bin* or basin were far more likely to be invisibly placed than those in a *hearth* or oven.

Comparing depositions in *pits* and post-holes with those in *bins* and basin provided a few interesting statistics. There was a much higher proportion of chipped stone (rather than ground stone) in pits; and a higher proportion of any kind of stone when compared to clay, plaster and ceramic. As pits are dug into the earth, it was perhaps more meaningful to place objects of stone rather than earth, which might have been seen as re-filling the hole. And, of the two kinds of worked stone, perhaps chipped stone appeared more removed from its found state than a stone that had been ground down, furthering the distinction between the earth that was removed and the object that was placed. In bins and basins, the probability of finding stone or moulded earth was equal.

The proportion of deposits found in and on *floors* was nearly identical to those found in and on *pits* and post-holes when compared in relation to other attribute categories. There were, however, startling differences in visibility, broad context and main material. Pits needn't be in structures, while most floors were. An equal amount of bone and other material was deposited in pits, while twice as much other material was deposited on floors. This may be a result of expressions of pollution or convenience, as there is evidence that much butchery took place outside of domestic structures. This may show that bones associated with butchery or food processing were not considered appropriate for deposition within structures. There were no significant differences in the depositions found on *benches* or on *platforms*, perhaps as each were likely used as a venue for display.

Depositions on *benches* were far more likely to be fragmented than those in *hearths* or ovens. This may be due to the higher probability that an object left in a hearth or oven would remain untouched after deposition; either because deposits in hearth and ovens tended to be final acts of ritual closure, or because deposits placed on benches were more likely to be intentionally fragmented.

The greatest differences came with the comparison of deposits in and on *walls* and those in and on *floor*s (Table 6.7). Wall deposits were equally likely to be comprised of one type of material as of more than one, while floor deposits were ten times more likely to be made of a single type of material. This likely corresponds to the high number of items plastered into walls, wherein the wall plaster counted as a second type of object. Wall deposits were three times as likely to be found in the eastern or western site periphery, while floor deposits were nearly twice as likely to be found in the north or south.

The difference in material chosen for wall or floor deposition is also striking. Wall deposits were almost twice as likely to be made of bone; while floor deposits were nearly twice as likely to be made of anything other than bone. This may be related to the types of objects considered appropriate for different ritual functions. For example, bone may have been seen as possessing apotropaic or totemic qualities, while other materials were seen as more appropriate for chthonic rituals.

As no animal crania were found intentionally deposited in or on the floor, though many were deposited in or on walls, the proportion of crania in the set of animal bones appears quite significant.

All time periods	**E-W**	**N-S**	**One type**	**More than 1**	**Bone**	**Not bone**	**All animal**	**Animal crania**
Wall 124	83	27	64	56	81	48	76	36
Floor 120	33	56	105	12	42	78	28	0
	P<0.0001		P <0.0001		P<0.0001		P=0.0001	

Table 6.7: Statistically significant correlations between depositions in/on floors and walls.

In conclusion, there seems to be clear trends about the types of ritual depositions performed at specific locations. However, many of the statistically significant correlations are attributable to functions of the specific locations themselves, as objects placed in a bin or post-hole and then covered up are far more likely to be invisible (Tables 6.8a,b,c).

Hearth/oven	Bin/basin
equal	Invisible

Pit/post-hole	Bin/basin
More chipped stone Stone (in general)	Stone and earth equal

Hearth/oven	Pit/post-hole
equal	More variability of type and contents More likely to be invisible

Pit/post-hole	Floor
Bone and other materials equal	In structure More non-bone

Table 6.8a-d: Summary of general trends for all time periods and regions, separated by specific location (a- hearth/oven v. bin/basin; b- pit/post-hole v. bin/basin; c- hearth/oven v. pit/post-hole; d- pit/post-hole v. floor).

Other interesting trends seen in the data suggest that people were very conscious of the types of materials that ended up in specific locations. The paucity of bone deposited on floors (when compared with other locations, as in Table 6.8d) may reflect ideas of pollution, or draw a contrast between the bones used during food processing and those for ritual practice. When re-placing material into pits and post holes, the data suggests that a different sort of material (i.e. not earth-based, but stone) is preferred. Both of these trends suggest that specific location was used to underline contrast. As archaeologists have recourse to the final resting place of the deposition, it can be difficult to make assumptions about the specific location of the origin and transformation of the material that was later deposited as part of a ritual activity.

6.3.3 Main Material

Separating the elements of the database according to which material(s) a given deposition was created from, many significant relationships emerge. Interestingly, there are no statistically significant relationships between *chipped* and *ground* stone, when compared with location, fragmentation, visibility, burning, or placement. The treatment of chipped and ground stone differed with respect to quantity and specific location, but not in a statistically meaningful way.

Comparing the results from *bone* depositions and depositions from all *other materials*, there is no overall relationship in terms of visibility or fragmentation, nor are there sufficient data to make meaningful statements about burning. The number of items in a deposition varies, but it is extremely significant that objects of bone are nearly four times more likely to be deposited alone, while objects made of other materials are more often deposited in groups or caches (Tables 6.9 and 6.10). This may be, in part, due to our modern conception of grouping. A complete, articulated skeleton was recorded as one

object, while a cache of blade blanks was recorded as multiple pieces. It is unclear if these conceptual categories would have held in prehistory, or if what we consider a group of blades was considered a 'toolkit.' Objects of bone were far more likely than other objects to be included as part of a composite material deposition.

Bone tended to be deposited more in the eastern and western peripheries, while other materials tended to be found in the northern and southern peripheries. Similarly, depositions in the walls tended to be in the eastern and western peripheries, while floor depositions were greater in the northern and southern peripheries (Table 6.7). This may show that the orientation of a deposit is a function of location rather than of material.

Depositions of bone were also far more likely to be found in the centre of sites than non-bone depositions. It is important to remember that there is not an even distribution of trenches opened across any site with respect to cardinal direction, thus the statistics concerning cardinal direction may easily be skewed by the research questions or excavated features that site directors wished to chase down.

All time periods	**1 item**	**Many items**	**1 type of material**	**Many types**	**North south**	**East west**	**Central**	**Periphery**
All bone n=337	228	75	230	100	122	149	34	271
All other materials n=306	169	107	257	43	151	105	15	256
	P=0.0003		P<0.0001		P=0.0017		P=0.0168	

Table 6.9: Statistically significant correlations between bone and other materials.

All time periods	**In a struct**	**Not**	**Elaboratd**	**Not**	**Floor**	**Wall**	**Vertical + V Emb**	**Horizontal + H Embed**
All bone n=337	273	62	107	224	42	81	13	124
All other materials n=306	267	36	285	18	78	43	52	49
	P=0.0212		P<0.0001		P<0.0001		P<0.0001	

Table 6.10: More statistically significant correlations between bone and other materials.

Comparing deposits of all types of *animal bone* and deposits of *human bone*, there is no correlation between bone species and fragmentation, degree of burning or placement. There is, however, a clear relationship between human bones and the floor, as well as animal bones and the wall (Table 6.11). This correlation does not take into account the other possible specific locations for deposits, narrowing the focus only to include floors and walls. This disparity may reflect upon the other ritual functions of these locations. For

example, at many sites there are inhumations beneath the floors of houses. Of the 14 special deposits of human bone in or on floors, only 2 were not within some kind of structure – and those 2 were placed within the matrix of a courtyard. As each of the sites that have a special deposit of human bone in or on a floor also have at least one domestic burial, the practice of domestic inhumation likely informs or reinforces the association of human elements with floors. Of the 5 human bone deposits related to walls, only 2 were actually in the wall itself; all the others were placed in relation to a wall, either upon a pedestal of pebbles or without further information. This further strengthens the association between human bone and the floor. Looking now to the association of animal bone with walls, we see a strong association between head elements (jaws, horns, antlers and crania) and the wall. Only 7/72 deposits were post-cranial elements. This association raises some interesting questions, such as the relationship between location and material, and will be examined in more detail in section 6.6, once chronological associations have been investigated.

According to the data, there is a 30% chance that a human bone will be found deposited other than in a structure, but a much smaller chance that an animal bone will be outside a structure (about 9%). Animal bone deposits external to buildings tend to be related to middens, but can be found on courtyard surfaces, between domestic structures in alleyways, or in the fill of pits near walls. The paucity of external depositions may result from a difficulty in discerning ritualized placement of animal bone within the usual site of animal bone deposition. However, as fewer than half of the external animal bone deposits were in or on midden, the probability remains that animal bone was more appropriately or commonly deposited inside structures, while human bone was less bound by similar custom. This disparity might be related to taboos surrounding the types of human bone allowed in a domicile, or notions of extra-familial pollution. The use of human bone as a territorial marker or trophy display is not supported, as the majority of depositions were invisible. These external depositions of human bone more likely served as apotropaic, foundation or abandonment deposits.

Another extremely significant statistic must be considered with caution is cardinal location. Fewer than half of any bones have recorded information about cardinal location. This correlation, though extremely strong, could easily be disrupted with the (highly unlikely) manifestation of contrary contextual information.

All time periods	**In a struct**	**Not**	**Floor**	**Wall**	**North South**	**East West**
Animal bone 285	237	24	28	76	113	8
Human bone 52	36	16	14	5	9	19
	P=0.0190		P=0.0002		P<0.0001	

Table 6.11: Statistically significant correlations between depositions of animal and human bone.

Reducing the data to depositions of only *human and animal crania*, there is no correlation between level of burning, placement or fragmentation. There is very nearly a significant relationship with broad context (within or without any kind of structure) even though both types of crania were likely to be found within structures, there was a proportionally significant chance that a human skull would be found outside was greater than for an animal skull (Table 6.12). The treatment of human and animal crania differs in terms of elaboration, decoration and location. The specific location and elaboration of crania accord well with the treatment of all bone. There seems to have been a much stricter range of acceptable treatment for specially-deposited crania. Of the 8 human and 29 animal crania that had been elaborated, they had all been coloured, plastered, or both. In terms of decoration, 4/39 specially-deposited human crania had been modelled to look like humans again, but no other type of decoration appeared on human crania. In contrast, animal crania were decorated in a variety of ways. Interestingly, while there are no human bones modelled or painted to resemble animals, there is a human figure painted on a bucranium from Çatalhöyük.

In order to test if the correlation between wall and floor deposits was related to the display and hiding of objects, I added specific contexts to each category. Hidden contexts, in addition to the floor, I chose as pit, post-hole and fill; while display contexts I chose as bench and platform. The correlation remained extreme.

All time periods	**Elab**	**Not**	**Wall**	**Floor**	**Wall, bench, platform**	**Floor, pit, pst-hl, fill**
Animal crania 55	29	26	36	0	4	41
Human crania 39	8	28	3	10	25	6
	P=0.0046		P <0.0001		P<0.0001	

Table 6.12: Statistically significant correlations between depositions of animal and human crania.

In conclusion, there do not seem to be any relationships between chipped and ground stone within the entire dataset. While there are differences in quantity and specific location, these are not statistically significant. This may reflect on our modern conceptualization of quantity and grouping. The wide differences between the depositional patterns of bone and other materials, on the other hand, cannot be seen as a result of anachronistic conceptualization. There were significant differences in quantity, composite materiality, specific and cardinal location, effort and placement (Table 6.13a).

Bone	Other than bone
Single	Multiple
Composite	One type of material
Centre	In site periphery
Not elaborated	Elaborated
In/on wall	In/on floor
Horizontally-placed	Vertically placed

Animal bone	Human bone
In a structure In/on wall	In/on floor

Animal crania	Human crania
Elaborated	Not elaborated
In/on floor	In/on wall
Floor/midden	Wall/display

Tables 6.13 a-c: Summary of general trends for all time periods and regions, separated by main material (a- bone v. other; b- animal bone v. human bone; c- animal crania v. human crania).

This type of analysis allows us an insight into what people were doing with different materials. There is a clear difference in the treatment and placement of human bones and animal bones (6.13b). The paucity of animal bone found on the floor (6.8d and 6.13b) is underlined by the preponderance of human bone in or on floors. This may reflect burial customs as well as locational taboos. External depositions of human bone more likely served as apotropaic, foundation or abandonment deposits, rather than a reinforcement of burial customs. The differences between depositions of human and animal crania (6.13c) demonstrate strict ideas about the location, placement and treatment of human crania despite the geographic and chronological breadth between them.

6.3.4 Visibility

340 objects were classified as invisible, and 187 as clearly visible, partially visible or plastered over. Two very strong correlations appear from this data set; concerning elaboration and breakage and are shown in Tables 6.14 and 6.15. P= <0.001 in both cases.

All periods	Invisible 340	Not 187
Elaborated	188	137
Not	148	50

Table 6.14: Correlation between visibility and elaboration.

All periods	Invisible 340	Not 187
Delib broken	13	37
Other broken	103	9

Table 6.15: Correlation between visibility and breakage.

The proportion of objects placed so as to be invisible drastically increases when they had not been altered by human hands; ground, chipped, shaped, worked or sharpened. This may be related to a changing focus on objects; the more care put into their production, the more likely they are to be ritually displayed. Likely related to this is the clear proportion of deliberately broken objects placed so that they could, at least in part, be seen. Objects that were not clearly deliberately broken[7], yet still broken, were much more likely to be placed

[7] For criteria, see section 5.8.1

invisibly. There was no significance to the relationship between all broken and all unbroken objects, thus the deliberate human intervention is something that must be seen.

Comparing objects that are clearly visible (n=81) to those which were partially (n=44), plastered (n=62) or invisible, there is no relation between visibility and material, broad or specific location, elaboration, or fragmentation. What was very statistically significant was the relation of visibility to placement. Reducing the sample size first to those depositions which had data for both placement and visibility, and then again to only those placed horizontally or vertically (less than half the original population), there is a clear connection, despite the overall weakness of the data (Table 6.16). However, this correlation is likely a result of the context of vertical placement; on easily-seen walls and pillars.

All periods	Visible	Not
Vertical	32	26
Horizontal	30	111

P < 0.0001

Table 6.16: Correlation between visibility and placement.

After comparing each visibility attribute against the combination of all the others (*e.g.* invisible weighed against the sum of clearly visible, partially visible and plastered over), I then weighed each one against individuals (*e.g.* invisible weighed against visible; then invisible weighed against partially visible; then invisible weighed against plastered over). In most cases, there was a significant relationship in terms of placement, main material and cardinal direction.

All time periods	**In struc**	**Not**	**Elab**	**Not**	**1 type**	**>1 type**	**N,S**	**E,W**	**All stones**	**Clay, plastr cermc**
Plastered n=62	61	1	57	4	14	48	4	56	0	15
Invisible n=340	274	63	188	148	279	54	173	222	93	57
	P=0.0002		P<0.0001		P<0.0001		P<0.0001		P<0.0001	

Table 6.17: Statistically significant correlations between plastered over and invisible deposits.

Plastered objects formed statistically significant correlations in terms of broad context, cardinal location, and certain types of material as they are nearly all in a structure, in the eastern and western peripheries, and placed on a wall (Tables 6.17, 6.18). Objects that are clearly visible, invisible, or partially visible tend to be more balanced. Again, like the data in Table 6.16, these correlations can be explained through context. Deposits that are visibly obscured by plaster have often been plastered to a structural element, most likely a wall. The overwhelming majority of plastered deposits come from the trenches on the western side of the Çatalhöyük East mound, skewing the cardinal data beyond repair.

All time periods	In struc	Not	Elab	Not	Floor	Wall	Bone	Not	All stones	Clay, plastr cermc
Plastered n=62	61	1	57	4	2	53	47	15	0	15
Partially visible n=44	35	9	33	11	14	5	12	32	12	32
	P=0.0002		P=0.0106		P<0.0001		P<0.0001		P<0.0001	

Table 6.18: Statistically significant correlations between plastered and partially visible depositions.

Partially visible objects are most often found on floors, in structures. They are more likely than clearly visible depositions to be made of material other than bone (Table 6.19). If bone, they are far more likely to be animal, rather than human bone. The greatest disparity between attributes of partially and clearly visible depositions is in the quantity of items per deposition. 85% of partially visible depositions were comprised of a single object, while only 40% of clearly visible depositions were. This implies that it was important to be able to see objects that had been grouped together in a clustered deposition.

All time periods	Single object	Many objets	N,S	E,W	Verti-cal	Horiz	Bone	Not	All stones	Clay, plastr cermc
Partially n=44	36	6	20	14	1	11	12	32	14	8
Clearly visible n=81	47	30	18	40	20	24	41	40	18	22
	P=0.0063		P=0.0152		P=0.0210		P=0.0140		P=0.0158	

Table 6.19: Statistically significant correlations between partially and clearly visible depositions.

Taken alone, clearly visible depositions are very well-balanced, with the exception of a paucity of chipped stone. Several extremely significant correlations appear when clearly visible depositions are juxtaposed with entirely invisible ones (Table 6.20). The proportion of animal crania to animal bone (roughly 1:3 and 1:10) is unsurprising, as crania are the most likely element to be displayed. As a great majority of the invisible depositions were either without placement information or neither vertically nor horizontally placed, the statistic seems suspect. However, of 33 total depositions that can be described as vertically-placed, the majority had been placed high up on walls, which can be considered a venue for the display of objects. Thus, the vertical-horizontal statistic confirms that clearly visible deposits were intentionally displayed. The relationship of deliberate fragmentation to visibility is also interesting: suggesting that fragmented items were likely to have been

displayed after deliberate breakage. This may inform the types of ritual activities performed, and will be discussed further in section 6.6.

In order to confirm that twice as many depositions of chipped stone than of ground stone were invisible, I double-checked that most of the chipped stone entries had multiple pieces. As they did, the only potential outlier in the correlation table is the single clearly visible deposit of chipped stone. The chipped stone is part of a composite cluster with figurines in a stone bowl that had been placed before a painted wall at Ulucak höyük. In this instance, it appears that the cluster, rather than the chipped stone element alone, was the focus of the deposition.

All time periods	**Vert-ical**	**Horiz ontal**	**All animal bone**	**Anima crania**	**1 type**	**>1 type**	**Delib bro-ken**	**Broke**	**Grind stone**	**Chip stone**
Clearly n=81	20	24	32	11	59	20	19	8	16	1
Invisible n=340	3	44	149	13	279	54	13	103	29	60
	P<0.0001		P=0.0056		P=0.0466		P<0.0001		P<0.0001	

Table 6.20: Statistically significant correlations between invisible and clearly visible depositions.

Comparing depositions of absolute visibility (invisible or clearly visible) with those of intermediate visibility (plastered over or partially visible), many of the associations between individual attributes are reinforced, particularly those seen in the comparison of invisible with plastered depositions (in Table 6.17). The greater proportion of intermediately visible depositions that had been elaborated or composite is particularly clear in Table 6.21. Interestingly, the relationship between decorated and elaborated depositions appears more complicated. This is because in order to be considered as decorated, a deposit must first have been elaborated. For example, a stone may have been shaped into a sphere. Shaping is a kind of elaboration, but a sphere is not considered as decoration. A pillar that was shaped into the form of a human is both elaborated and decorated. Although a greater proportion of intermediatelt-visible deposits had been elaborated, the difference in proportion drastically leaps when decoration is considered, as so few of the absolutely-visible deposits that had been elaborated, had also been decorated. The vast majority of the deposits of intermediate visibility that had been decorated were done so using plastic methods: bones had been "re-fleshed," clay had been moulded into figurines, and limestone had been ground into avian shape. Only a few partially-visible deposits (all from Çatalhöyük) had evidence of painted decoration. The types of decoration found on intermediate-visibility deposits were all (but one) figural: bird, ruminant or anthropomorphic. There was also only one instance of a set of figurines. In contrast, deposits with absolute visibility included many figurines; geometic and parallel line decorations, as well as the bird, anthromorphic and ruminant shapes found among deposits

of intermediate visibility. While there seems to have been a much smaller range of decorated items that were deposited with intermediate visibility, a colossal percentage of intermediately-visible deposits had been decorated.

All time periods	Elab	Not	Decor	Not	1 type	>1 type	Hum bone	Anim bone	Floor	Wall
Intermediate (plastered, partial) n=106	90	15	73	33	47	105	1	58	16	51
Absolute (clearly, invis) n=421	235	181	60	361	338	74	38	181	55	57
	P<0.0001		P<0.0001		P<0.0001		P=0.0011		P=0.0009	

Table 6.21: Statistically significant correlations between absolute and intermediate visibility.

There seem to have been strict rules about the visibility of human bone; absolute visibility was the rule with the single exception of a baby skull from Hacılar. The greater association of intermediately visible deposits with the wall is likely due to the practice of plastering objects to walls, and again may be skewed by the large dataset from Çatalhöyük.

Intermediate visibility	Absolute visibility
Elaborated x6	Elaborated x 1.5
Decorated	Not decorated
More than one type of material	Only 1 type of material
Animal bone x58	Human bone x4.5
In/on wall	Floor, wall equal

Table 6.22: Summary of general trends for all time periods and regions, separated by visibility.

In conclusion, it is clear that people were doing very different things with objects at different levels of visibility. These general trends are informed by the desire to be aware of the presence of a ritual deposition, yet not with the brunt of its full effect. While both objects deposited with intermediate and absolute visibility were more likely to be elaborated, those of intermediate visibility were so by a greater margin (Table 6.22). Perhaps certain types of material or decoration were too potent to reveal in their entirety.

6.3.5 Decoration

Only 143 objects had been decorated. The types of decor are seen in Table 6.23.

Anthropomorphic	Ruminant	Geometric	Bird	Parallel lines	Felid (leopard)
65	62	9	3	3	2

Table 6.23: Instances of decoration.

Given the small sample size and the predominance of decorated objects coming from Çatalhöyük (81/143), it is not surprising to see clear, strong correlations between the ruminant/anthropomorphic and location, placement, visibility and material (Table 6.24).

All time periods	**Vert**	**Horiz**	**Plaster**	**Invis, partial, clearly**	**In dom structre**	**Not in a dom struct**	**Bone**	**Not**	**Invis**	**Clearly**
Ruminant n=62	7	46	45	17	61	1	46	19	9	7
Anthrop. n=65	11	5	3	62	27	38	6	59	13	21
		P<0.0001		P<0.0001		P<0.0001		P<0.0001		P<0.0001

Table 6.24: Statistically significant correlations between deposits decorated anthropomorphically or as ruminants.

While the majority of the anthropomorphically-shaped objects that had been ritually deposited came from the Urfa region (n=31), 56/62 ruminant-decorated objects came from the Konya Plain, as well as 21/65 anthropomorphically-decorated objects. The combined deposits from Urfa and Konya account for over 80% of the objects decorated as anthropomorphs or ruminants, so the statistical significance of the dataset must take this skewing into consideration. 46 of the ruminant-decorated objects were plaster-covered horn or crania, while anthropomorphic objects singled out for special deposition tended to be made of limestone (n=33), clay (n=15) or plaster (n=9). Only rarely were bone objects decorated to appear as human and then specially deposited; human skulls were occasionally re-fleshed with plaster and then displayed, and animal jaw bits were sometimes included in plaster "breast-shaped" wall features. The preference for the creation of human images from non-human material may reflect a taboo or special reverence for the power of the human form, as there were many objects designed to resemble people (and exponentially more that were not specially-deposited).

All 24 coloured objects came from Central Anatolia: Cappadocia and the Konya Plain, and every one came from a domestic structure. Objects of a natural striking colour, such as greenstone or the layered surfaces at M'lefaat were not considered to be coloured, though they may have been selected for deposition on the basis of their colour. For the purposes of the database, the attribute coloured was considered to be a deliberate human action.

27 specially-deposited items were elaborated as figurines; 10 shaped as ruminants from the Levant and Central Anatolia; and 17 as anthropomorphic, coming from Central Anatolia (n=13), with a scattered few known from the Aegean, the Lake District, Zagros and Euphrates.

Ruminant	Anthropomorphic
Horizontal	Vertical
Plastered over	Other than plastered
In domestic structure	Not in domestic struc
Made of bone	Other than bone
invisible	Clearly visible

Table 6.25: Summary of general trends for all regions and time periods separated by decoration.

Some of these general trends can be explained through an examination of the dataset (6.25). The probability that anthropomorphic decor was vertical stems from the preponderance of pillars in the earlier periods. Other correlations can be attributed to local phenomena. The majority of the anthropomorphic decor, and all avian decoration came from the Urfa region, while most of the ruminant decor and all felid decoration came from the Konya Plain. Thus, these trends are skewed due to the sample. Most interesting among these trends is that anthropomorphic decor – no matter the time period or region – is almost never found on bone, while ruminant decor is far more frequently found in or on bone than any other material. This again points to a strict usage of the human image.

6.3.6 Number of Types of Materials

The distribution of composite deposits as opposed to those made of only one type of material is largely unaffected by location and fragmentation. Unsurprisingly, the main material from which any composite deposit was created was most likely to be made of some kind of bone, often with the addition of plaster as a seconday material when there was only a single object. Many composite deposits were comprised of several different types of materials, deposited together in a complex cluster. There was a much greater proportion of composite objects that had been deliberately broken, than those which had merely been broken. This may relate to the ritual function of display: deliberately broken objects were more likely to have been clearly placed, and composite deposits were intentionally created; either by manufacture or through the selection of meaningful combinations of objects.

6.3.7 Placement

While there were no new statistically significant correlations between the types of deposit placements, there were some important trends that will be highlighted here. Every object classified as embedded had also been elaborated, while twice as many upended objects had not been elaborated as those that had been altered by human hands.

Embedding, or incorporating a deposit within a structural element, may have served to contain or focus the ritual efficacy of a deposit. The elaboration of these objects shows a deliberate choice in the types of objects that were embedded. That is, objects that had not been elaborated were never embedded. The upending of objects that had not been elaborated could show that upending objects was considered a type of elaboration or alteration of the "wild" state of the object.

Objects placed horizontally tended not to be clearly visible, though were more likely to be invisible than objects placed vertically. Horizontal items were twice as likely to be placed in the eastern or western peripheries of a site than in the north or south, and were twice as likely to be made of bone than vertically-placed deposits. Vertically-placed bone was most likely of animal origin (10/13), but not the cranium (9/13 were horns). Contrarily, all human bone that had been vertically placed (n=3) were crania. All vertical and embedded objects (*i.e.* pillars) had been elaborated. Further relationships between elaboration and placement will be discussed below. The most important conclusion from this particular set of analysis is that upending may have been seen as a type of elaboration.

6.3.8 Quantity

There were no statistically significant correlations when depositions of single objects were juxtaposed with depositions of double objects. However, when depositions with any number of objects (greater than one) were compared with depositions of single objects, two interesting correlations – both concerning main material – arose (Table 6.26). Multiple-object depositions were more likely to have their main material be of material other than bone, while single-object depositions were more likely to be of bone. Composite clusters often did include bone, but not every one. Comparing ground stone and chipped stone depositions, multiple-object depositions were just slightly more likely to be comprised of chipped stones, while single-object depositions were twice as likely to be a ground stone rather than a chipped stone. This disparity probably results from the practice of caching groups of chipped stone beneath house floors (known especially from the Konya Plain).

All time periods	Bone	Not	Ground Stone	Chipped Stone
Quantity = 1 n=398	228	170	65	27
Quantity > 1 n=182	75	107	27	33
	P=0.0003		P=0.0022	

Table 6.26: Statistically significant correlations between quantities.

In summary, depositions of a single object were far more likely to be bone than any other material, and, when restricted to ground stone or chipped stone, far more likely to be ground stone. This likely reflects upon the composition of mixed clusters and caches.

6.4 Chronological trends: Introduction

To analyse the chronological implications, the data set was divided into three parts: PPNA and earlier; PPNB; and PN (Table 6.27). Where further division was possible, EPPNB was separated from depositions relating to the M and LPPNB. The Göbekli material from level III is generally dated to contemporary with the PPNA, though there is some evidence to suggest it might continue into the PPNB. However, separating it from the Nevalı Çori material provided for more comparisons. The earlier and later depositions were separated from Mureybet, as well as from Çayönü (Fig. 6.1).

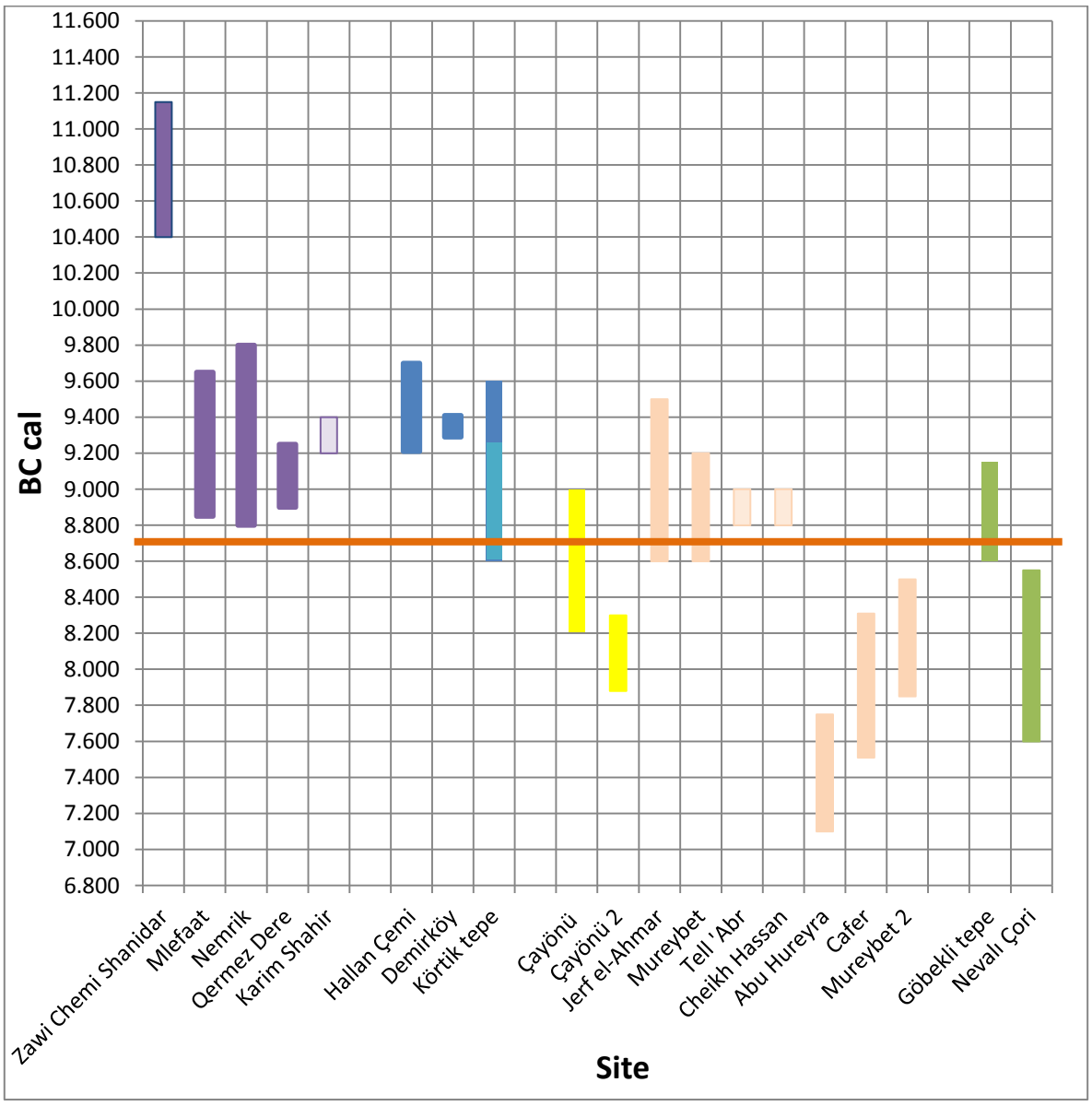

Figure 6.1: Calibrated dates for early sites, showing the division between PPNA and PPNB for this inquiry. Zagros sites are shown in purple; Batman in blue; Ergani in yellow; Euphrates in pink; and Urfa in green.

Location	PPNA and before Before 8700 cal BC	PPNB 8700-6900 cal BC	PN After 6900 cal BC
Zagros 7 sites	Karim Shahir Zawi Chemi Shanidar Mlefaat Nemrik 9 Qermez Dere n=18	Ganj Dareh n=2	Ginnig n=11
Batman 3 sites	Hallan Çemi Demirköy n=10	Körtik Tepe n=1	
Euphrates 7 sites	Mureybet (level 2,3) Tell 'Abr Cheikh Hassan Jerf el-Ahmar n=24	Mureybet (level 4) Abu Hureyra Cafer höyük n=23	Mezraa Teleilat n=2
Levant 5 sites	Hatoula Wadi Feynan 16 n=7	'Ain Ghazal Basta Tell el-Kerkh n=13	
Konya 4 sites		Pınarbaşı Boncuklu Can Hasan III n=18	Pınarbaşı (7th m) Çatalhöyük n=393
Urfa 2 sites	Göbekli tepe n=20	Nevalı Çori n=19	
Ergani Plain 1 site	Çayönü (grill phase) n=3	Çayönü (cell phase) n=7	
Cappadocia 2 sites		Aşıklı höyük n=2	Köşk höyük n=17
Lake District 3 sites		Höyücek n=7	Hacılar Bademağacı n=7
Aegean 1 site			Ulucak n=6
Thrace 1 site			Aşağı Pınar n=2
Balikh 2 sites			Tell Sabi Abyad Assouad n=13
	82	**92**	**451**

Table 6.27: Sampled sites according to region and time period.

The major trends of each time period will first be described, and then significant correlations within each of them will be teased out. The dataset will then be divided according to contextual or content attributes to examine higher-order correlations between the time periods. Finally, the Pottery Neolithic will be described and compared. Preliminary analysis will be undertaken at the end of each section, while more in-depth analysis will occur in Chapter 7.

6.4.1 PPNA and earlier (Before 8700 cal BC)

Considering only those depositions that occurred during the PPNA and earlier periods, there is a clear preference for objects to be placed in the southern periphery of a site. Most depositions have information that can be construed in terms of visibility. Invisible, clearly visible and partially visible depositions each number between 15 and 30, while plastered depositions are rare. While most depositions are found in structures, 11 were recovered from non-bounded open areas between structures from the earliest sites, most from the Batman and Zagros regions, with 1 from Çayönü. Fewer objects had been elaborated or altered by humans than had been left alone. Depositions were 3 times as likely to be found on a floor than on a wall. To summarize, structured deposits from the PPNA and earlier are most likely to be single, of a single type of material, undecorated, not plastered over, placed in the southern periphery of the mound and in or on a floor.

Dividing PPNA and earlier depositions into those made of *bone*, and those made of *other materials*, several significant correlations appear (Table 6.28). Non-bone depositions are 10 times more likely to be found on the floor than the wall; however, only 1/3 of bone deposits appear in these 2 specific locations, so the correlation is not as strong. The propensity for bone to be invisible, and not-bone to be visible is borne out in the statistics, as is the stark contrast in elaboration. No bone depositions during the PPNA and before had been altered, polished, sharpened or incised,[8] while all specially-deposited objects made of materials other than bone had been elaborated upon. Bone is half again as likely to be found in a structure, while material other than bone is 17 times more likely to be found in a structure.

PPNA and before		**In a struc**	**Not**	**Elab-orated**	**Not**	**Clearly visible**	**Part pl invis**	**Invisible**	**Clearly part pl**	**Wall**	**Floor**
Bone	n=45	27	18	0	43	5	30	23	12	10	5
Not bone	n=37	35	2	37	0	16	18	7	27	3	30
		P=0.0002		P<0.0001		P=0.0041		P=0.0002		P<0.0001	

Table 6.28: Statistically significant correlations between PPNA deposits of bone and other material.

Splitting the depositions during the *PPNA and earlier* into those *within structures* and those found *without*, 2 trends emerge from the data (Table 6.29). Objects placed within structures were far more likely to be found in the southern periphery of the site, while objects outside of structures were far more likely to be placed in the centre of a site. The latter correlation is most likely a product of structured depositions in the courtyards and

[8] It is important to recall that many objects of incised and polished bone date to this period, yet none of these show evidence for having been specially deposited.

non-bounded open areas around which structures are built. Objects placed *within structures* were far more likely not to be externally associated with other acts of structured deposition. In contrast, objects placed outside of structures were more likely to be placed in groups or caches, and nearby or associated with other acts of deposition. This may be a result of functional considerations: the amount of space available inside structures is typically inferior to that outside of them, or it may reflect on the types of ritual depositions within and without structures.

Elaborated objects were again statistically significant, more probably found within a structure than outside. The dearth of elaborated objects specially-deposited external to structures during the earlier period is interesting, as it is during this period that we see an increase in the types of material processing. The grinding of stone implements and new kinds of geometric microliths are associated with the end of the Palaeolothic and early Neolithic periods. The desire or injunction to keep these shaped pillars and ground limestone statue fragments within clear boundaries informs the mindset of those performing these rituals.

PPNA and before	**Elab-orated**	**Not**	**North south**	**East west**	**Centre**	**N, S, E, or W periphy**	**South**	**N, E W, cntr**
In a structure n=62	34	26	37	13	5	50	31	24
Not in any structure n=21	3	17	1	11	9	3	1	11
	P=0.0016		P<0.0001		P<0.0001		P=0.0002	

Table 6.29: Statistically significant correlations between early deposits within/out a structure.

The placement of objects outside of structures during the *PPNA and before* may have served to delineate social space or to consecrate or close boundaries. Middens, courtyards and non-bounded open areas within the site were communal activity areas. Depositions related to but not in structures may have been part of a ceremony to introduce a new building to the community or a strengthening ritual. The placement of animal bone and nonorganic material in open areas and courtyards tended to be clearly visible, while no human bone was deposited in a visible way.

Bone	Other Material
In/out struc equal	In struct
Not elab	Elab
Part, pl, invis	Clear = all other
Invis	Not invis
Wall	Floor

In a structure	Not in a structure
Elab	Not elab
N-S	E-W
Periphery	Centre
South	Other

Table 6.30 a,b: Summary of general trends for all regions prior to 8700 cal BC.

The treatment of ritually-deposited bone prior to 8700 cal BC follows the general trend (Table 6.13a) from all time periods by tending to be in a wall and unelaborated. Both ritual deposits within structures from all time periods and those from before 8700 cal BC tend to be in the periphery of sites, as well as elaborated (Table 6.4a).

To make a generalization based on tables 6.28 and 6.29, ritual deposits prior to 8700 cal BC tend to be single, made from 1 type of material, undecorated, not plastered over, in or on the floor, in the southern periphery of the mound, and not elaborated.

6.4.2 PPNB (8700-6900 cal BC)

There is roughly the same number of depositions recorded in the database dating to the PPNB as to the PPNA. Nearly all of the depositions are in or near a structure, and not a single deposition was found in the southern periphery. Many more objects are decorated or elaborated.

Looking only to the *PPNB*, there are very few significant statistics. Those that do arise came from the comparison of bone objects with non-bone objects. While both types of objects are most likely to be found in the peripheral regions of a site, bone objects are more likely to be found in the centre. The correlation between bone objects not having been elaborated and non-bone objects having been elaborated remains extremely statistically significant.

Bone	All other materials
Not elaborated	Elaborated
Centre	Periphery

Table 6.31: Summary of general trends for all regions between 8700 cal BC and 6900 cal BC.

To make a generalization based upon the databse, ritual deposits between 8700 cal BC and 6900 cal BC tend to be in or near a structure, not in the southern periphery of a site, decorated, and elaborated. This is in stark contrast with the general trends of the PPNA, in which ritual depositions were most likely to be undecorated, in the southern periphery of the mound, and not elaborated.

6.4.3 Comparing the PPNA and before with the PPNB

Including information from all Pre-pottery sites, comparisons were run to look for macro-trends across the data. *Between the PPNA and PPNB*, very few changes were seen in the data (For absolute dates, see Appendix 2). Only one extremely significant shift was found: depositions that had previously focused on the northern and southern peripheries changed to eastern and western peripheries. In each case, only about half of the acts had information concerning cardinal location, and the utter dearth of southern deposits during the PPNB negates the significance.

Comparing depositions placed at individual specific locations turned up no good results, so I began combining them in groups. For example, I compared deposits found in pits, post-holes and fills to those found placed on walls, pillars, benches and platforms to test for differences in locations designed to be in/visible. I also combined floor and wall depositions with all other depositions. Both provided interesting results (Table 6.32).

PPNA v PPNB	**North south**	**East west**	**Floor or wall**	**All other location**	**Pit, Pst hole fill**	**Wall, bench, thresh**
PPNA - all n=83	38	15	48	35	8	19
PPNB - all n=97	15	37	31	66	30	24
	P<0.0001		P<0.0001		P=0.0347	

Table 6.32: Statistically significant correlations between all deposits: PPNA v PPNB.

Unfortunately, not all records described the condition of the deposited item, so the statistics on burning and breakage are based only on the better-recorded third of depositions, and could not be included.

Looking only at the depositions in and on walls and floors, the change from floors to walls is beginning during this period. This is seen specifically at sites like Çayönü, which span the PPNA and PPNB. Though not statistically significant, the numbers show shifts toward greater fragmentation and elaboration of objects during the PPNB.

The overall transition from deposits of bone to other materials is diluted somewhat by the inclusion of pillars as a structured deposit. As 23 objects in the PPNA were pillars, compared with 9 in the PPNB, removing all pillars certainly skews the data. However, they can confidently be identified and isolated in the dataset. Ignoring pillars, a specially-deposited object in the PPNA is 3 times more likely to be made of bone, whereas an object in the PPNB has roughly equal chances of being bone or not. Other statistically significant correlations involve elaboration and decoration. Objects deposited during the PPNB are far more likely to have been elaborated or decorated.

With the removal of pillars from the dataset, correlations appear more homogeneous, thus the fewer statistically significant results in Table 6.33. Objects appear

more likely to be made of more than one type of material during the PPNB, perhaps due to the clay-covered stone of several pillars during the PPNA. Invisible deposits during the PPNA tend to be part of structural material: buried in walls or benches, and rarely elaborated. Contrarily, invisible items during the PPNB tend to be in purpose-built hiding places, such as pits and graves. Very few elaborated objects are hidden from view during the PPNA, while only 2 elaborated objects are clearly visible during the PPNB. This may represent the desire to conceal valuable or symbolically significant material. A greater proportion of objects are fragmented during the PPNB, and of those objects that remained complete, only 2 were clearly visible, and none were decorated. This seems to show a trend towards increasing secrecy of elaborated or fragmented objects. The effort taken to dig a new pit rather than use or reinforce an already-extant structural element may show the desire to create new meanings. Alternatively, this could show the desire to go beyond a simple construction deposit to purpose-built structures. More human interaction is seen with objects that are elaborated, fragmented and decorated, so it seems likely that these objects would be more visible.

PPNA v PPNB	**Elab**	**Not**
PPNA – no pillars, invis n=58	7	27
PPNB – no pillars, invis n=77	20	22
	P=0.0172	

Table 6.33: Statistically significant correlation between all invisible deposits, though excluding pilars: PPNA v PPNB.

In general, depositions from all regions tended to be more varied in terms of specific location during the PPNB (Table 6.34). During the PPNA, ritual deposits were more likely to be in a specific location conducive to display, even if they were not clearly visible in that location. Perhaps the wider range of specific locations, including invisible locations, shows that ritual deposition became more privatised during the PPNB. This will be addressed more fully in 6.4.4.2.

Before 8700 cal BC (PPNA)	**8700 cal BC-6900 cal BC (PPNB)**
North-south	East-west
Floor or wall	Other specific locations
Wall, bench, or threshold	Pit or post-hole

Table 6.34: Summary of general trends for all regions, separated into the periods before 8700 cal BC (here referred to as PPNA) and 8700 cal BC- 6900 cal BC (here referred to as PPNB).

6.4.3.1 Broad Context shifts between the PPNA and PPNB

Looking only at objects found *external to any kind of structure*, there is an extremely significant change in placement from the PPNA and before – when more objects are found in the centre of a site, to the PPNB, when objects are most likely to be found in the northern or southern peripheries (Tables 6.35 and 6.37a). A far greater proportion of elaborated objects are placed outside of structures during the PPNB than during the PPNA.

Not in a structure	Elab	Not	North south	East west	Centre	Periph-ery	Bone	Not bone
PPNA n=21	3	17	1	11	9	12	18	3
PPNB n=28	18	10	16	3	1	19	11	17
	P=0.0010		P<0.0001		P=0.0089		P= 0.0013	

Table 6.35: Statistically significant correlations between deposits outside of structures.

There is a shift in focus from site-central areas outside of structures to site-peripheral areas outside of structures, and this could be due to an increase in settlement size or complexity, or the loss of a central area, wherein a single, central activity area is split into several smaller areas, or even eschewed altogether. Looking at the sites that have evidence of external depositions, with the exception of the PPNB site of 'Ain Ghazal, they are all very small; no more than 3 hectares. Alternatively, the focus could have shifted from a common, central area to a more private area related to a specific structure. Looking at site plans, there is clear evidence for a central activity area at Hallan Çemi, Nemrik 9, and Çayönü; while the evidence from Cafer höyük and Pınarbaşı is insufficient to determine the plan of the settlement. This is an interesting line of inquiry that requires further excavation to pursue.

The paucity of elaborated objects external to structures during the PPNA shows a common feeling concerning the appropriate location of structured deposits, assuming that both care of manufacture and complexity were highly-regarded. The shift towards placing more elaborated objects outside during the PPNB may inform the changing uses of space, or the increased attention paid to areas outside of structures. Not only the location, but the types of material placed outside of structures changed.

During the PPNA, external deposits were 9 times more likely to be made of bone (18 external bone deposits, and only 2 deposits made from other materials: a pestle from Hatoula and grooved slabs from Çayönü were external); while during the PPNB, bone was less likely to be deposited than other materials. There is also beginning to be a change in the treatment of bone. During the PPNA, no bone was elaborated, yet looking at the PPNB numbers we see that at least one bone object placed outside of a structure had been elaborated. To summarize, it seems that structured depositions external to structures changed from central, possibly communal, deposits of unaltered bone during the earlier

periods, to more private or personal deposits of elaborated objects, some of which were bone.

The types of objects found *within structures* increases dramatically during the PPNB, including ceramic and chipped stone, along with the ground stone, bone and unworked stone that was found in structures during the PPNA (Tables 6.36 and 6.37b). This, of course, informs the significance of the statistic comparing the frequency of ground stone to chipped stone depositions. The other statistics concerning a shift in depositional practices within structures can be explained by reference to the presence of pillars in the dataset and the few structures in the central part of sites during the PPNA. Pillars are the only type of deposition that were recorded as both vertical and embedded, thus their over-representation when vertical deposits are combined with vertical and embedded deposits. This statistic is then skewed by the many pillars erected during the PPNA, and relative dearth during the PPNB.

In some kind of a structure	Grnd stone	Chip stne	North south	East west	Centre	Periph-ery	Vert , V +emb	Horiz, H+emb
PPNA n=62	24	0	37	13	5	50	25	12
PPNB n=66	17	4	8	34	15	42	10	22
	P=0.0402		P<0.0001		P=0.0252		P= 0.0037	

Table 6.36: Statistically significant correlations between deposits in structures.

Looking only at *domestic structures*, we see little change between the PPNA and PPNB. Even with the exclusions of pillars, the proportions of most attributes remains constant between the PPNA and PPNB. There are no significant statistics when comparing ritual depositions in courtyard or non-domestic structures between time periods.

PPNA Not in a structure	PPNB Not in a structure
Not elaborated	Elaborated
East-west orientation	North-south priented
Centre of site	Periphery of site
Made of bone	Made of material other than bone

PPNA In a structure	PPNB In a structure
North or south	East or west
Periphery of site	Center of site
vertical	Horizontal

Table 6.37 a,b: Summary of general trends for all regions comparing earlier and later periods, separated by broad location (a- External to structures; b- In a structure).

6.4.3.2 Specific Context shifts between the PPNA and PPNB

Separating the data entries by specific context allowed the material to be queried for potential cognitive shifts about locational appropriateness of material. There were no statistically significant correlations between objects placed in a *pit or post-hole* (PPNA n=3; PPNB n=27), though this is likely due to the paucity of pit and post-hole depositions during the PPNA. This itself is interesting, as the 3 structured deposits in pits of post-holes from the earlier period are all bone, 2 human crania and 1 animal cranium; while the deposits from the later period include groundstone, chipped stone and ceramic as well as 6 crania (5 human) and 9 deposits of post-cranial bone (8 animal). Another shift in the usage of pits and post-holes as a place for structured deposition is in broad location. During the PPNA, objects placed in pits in the Batman and Zagros regions appeared outside of structures, while the majority of pit depositions during the PPNB appeared inside structures. Furthermore, 1 deposit from the PPNA was placed on top of a pit, while all of the deposits during the PPNB were fully within pits or post-holes. Again, there are no significant statistics for this material due to the small number of PPNA instances, but it is interesting to note these disparities, as they indicate a shift in the ritual use of pits.

Objects deposited in or on *walls* remain roughly equivalent between the PPNA and PPNB (n=13 in both cases). In terms of quantity, broad location, visibility and material, the numbers are identical. Thus, the use of the wall as a locus of deposition did not significantly change between the PPNA and the PPNB.

This is certainly not the case when looking at structured deposits on floors (PPNA n=35, PPNB n=18). The elaboration of items deposited on floors is interesting in the PPNA, perhaps reflecting the standard practice when a pillar came to the end of its use-life (Table 6.38). The shift in cardinal location follows the general trend (see 6.4.1 and 6.4.2). During the PPNA and earlier, 13 items on the floor were placed so as to be partially visible, 14 were clearly visible, and 4 were completely invisible. During the PPNB, no item was partially visible, so the dichotomy between clearly visible and invisible is evident. The floor seems to have undergone a shift in usage, to one of display. Perhaps more abandonment deposits were placed on the floor in the later period. The change in materiality associated with floor deposits can be seen in the chart below. Although bone was 6 times less likely than other material to be placed on the floor in the earlier period, by the PPNB, both types of material had about an equal chance. Interestingly, no crania, horn or any part associated with the head was deposited on the floor during the PPNA. In contrast, at least 3 human crania were found on the floor during the PPNB. This may reflect the juxtaposition of knowing an object is present, and actually seeing its presence. Clearly visible objects may have been placed for others to view, while hidden or disguised objects exist for the actor's private knowledge.

In or on Floor	Elab	Not	North south	East west	Clearly or in visible	Part, or plasted	Bone	Not bone
PPNA n=35	30	4	25	5	18	13	5	30
PPNB n=18	11	7	1	12	13	0	8	10
	P=0.0340		P<0.0001		P=0.0044		P= 0.0220	

Table 6.38: Statistically significant correlations between deposits in and on floors.

The most striking contrast between ritual depositions in or on floors comes from the visibility data (Table 6.39). The correlations between cardinal locations follow the general trend while elaboration, materiality and visbilty do not. It is interesting that there are even differences in the types of bone depositions on the floor in each period; crania or cranial elements are never seen on the floor during the PPNA, while crania are permissible during the PPNB. The reversal of the general trend of elaboration is likely related to the paucity of elaborated bone during the PPNA. In general, it seems that the floor changed its role as an anchor to one of a display context.

PPNA In/on floor	PPNB In/on floor
Elaborated	Not elaborated
North or south	East or west
Absolute visibility = Intermed visibility	Clearly visible or Invisible (Absolute)
Material other than bone	Made of bone = not bone

Table 6.39: Summary of general trends for all regions, separated by specific location (in/on floor).

6.4.3.3 Cardinal Location shifts between the PPNA and PPNB

All 32 instances of deposition in the *southern periphery* of a site occurred during the PPNA or earlier periods. 18 came from the Urfa site of Göbekli tepe; 7 from Tell 'Abr in the Euphrates; 6 from the Zagros (Qermez Dere and Nemrik 9) and 1 from Hallan Çemi in the Batman region. No valid correlations could be made as there were no PPNB data. This may relate to the ways in which PPNA and PPNB sites were excavated, as often trenches are extended to "chase" architectural features. Additionally, several sites contemporary with the PPNB were bounded on the southern periphery by modern fields (*e.g*. Cafer höyük) or a river (*e.g.* Nevalı Çori). This relationship, then, is very probably not significant.

There were only 8 depositions occurring in the *eastern periphery* during the PPNA (1 from the Zagros, 4 Euphrates, 3 Çayönü) and 21 during the PPNB (1 from Konya, 1 North Euphrates, 5 Cafer, 8 Urfa and 6 from Çayönü). No correlations could be found over time, perhaps due to sample size.

Surprisingly, very few (7) depositions were found in the *western periphery* of sites contemporary with the PPNA (2 from Çayönü and 5 from the Euphrates). 16 depositions contemporary with the PPNB (3 Euphrates, 2 Lake District and 11 Urfa) were discovered in

the western periphery. The three depositions from Abu Hureyra were all found in domestic structures (an aurochs cranium in a pit dug into a corner of a house; a horn core in a wall; and a caprine jaw buried in a grave below a house floor). The remaining depositions contemporary with the PPNB, from Nevalı Çori and Höyücek, were all found in non-domestic structures. As all of the objects from the PPNA were made of bone, and the 11 from Urfa were ground limestone, the expected correlations of main material and elaboration arose (Table 6.40). The tendency of bone depositions to be invisible likely influenced the second statistic.

Western periphery	**Elaborated**	**Not**	**Invisible**	**Clearly, Plastered Partially**	**Bone**	**Not bone**
PPNA n=7	0	7	7	0	7	0
PPNB n=16	12	4	4	12	4	12
	P=0.0013		P=0.0013		P=0.0013	

Table 6.40: Statistically significant correlations between deposits in Western peripheries.

Depositions in the *central area* of sites were low in both time periods. 14 acts belonged to the PPNA (8 from Batman; 2 Levant; 1 Zagros and 3 Urfa), and 17 to the PPNB (9 from the Levant; 3 Euphrates, 2 Zagros, 2 Konya, 1 Çayönü). Bone deposits were more common during both the earlier and later periods, though some bone objects were elaborated during the PPNB. This likely led to the lack of correlation between main material and elaboration, which had been so common at other cardinal locations. Interestingly, the visibility correlations defy the trend established in the western periphery. Instead of invisible objects during the PPNA and partially or clearly visible objects (as in the PPNA), the deposits in the centre of sites are more likely to be clearly or partially visible during the PPNA, and invisible during the PPNB (See Table 6.41). These trends may inform how site organization influenced the location of ritual depositions. The deposits contemporary with the PPNA placed in the centre of sites were either in central activity areas (*i.e.* at Hallan Çemi and Nemrik 9) or in central, communal structures (as at Wadi Feynan 16 and Göbekli tepe). In contrast, the ritual deposits in the centre of sites contemporary with the PPNB tended to be in domestic structures that happened to be in the centre of the mound (as at Boncuklu; Abu Hureyra; Ganj Dareh; Can Hasan III; Tell el-Kerkh; and Çayönü).

Centre of site	In a struc	Not	Invisbl	Clear, pl part	One item	Many	Mdden fill	Wall bench niche
PPNA n=14	5	9	2	6	11	3	7	1
PPNB n=18	15	2	11	4	3	7	1	5
		P=0.0068		P=0.0393		P=0.0351		P= 0.0256

Table 6.41: Statistically significant correlations between deposits in the centre of sites.

Depositions in the *northern periphery* of sites largely come from the later periods, with all 6 of the earlier depositions coming from Nemrik 9 (Table 6.42). The 24 structured deposits found in the PPNB come from the North Euphrates (n=2), the Levant (n=1), and the Konya Plain (n=21). All 13 non-elaborated objects dating to the PPNB come from Konya. All of the objects found in the northern periphery during the PPNA were made of a single material, and found within structures, though quantity and elaboration were evenly split. A wider range of practice is seen in the PPNB, with more depositions outside of structures, made of multiple types of materials, and in a broader range of specific locations. The increase in depositions external to structures in the northern periphery during the PPNB may be related to a shift in the location of outdoor working areas, and will be discussed in 6.4.4.

Northern periphery	In some kind of structure	Not	Clearly visible	Invisible, Plastered Partially	One type	Many types
PPNA n=6	6	0	3	3	6	0
PPNB n=24	8	16	1	20	9	15
		P=0.0051		P=0.0248		P=0.0169

Table 6.42: Statistically significant correlations between deposits in the northern periphery.

In general, separating ritual depositions according to cardinal location was not very informative (Table 6.43 a-c). Better results were obtained when grouped, as in the comparison of eastern and western peripheries against northern and southern; or centre against periphery.

PPNA Western periphery	PPNB Western periphery
Not elaborated	Elaborated
Invisible	Partial, plastered, clearly
Made of bone	Not made of bone

PPNA Centre of site	PPNB Centre of site
Not in structure	In structure
Clearly, plastered, partial	Invisible
One item	More than one type of item
In midden or fill	Display context

PPNA Northern periphery	PPNB Northern periphery
In a structure	Not in a structure
Clearly visible	Plastered,partial, invisible
One type of material	More than one type of material

Table 6.43 a-c: Summary of general trends for all regions, separated by cardinal location (a- western periphery; b- centre of site; c- northern periphery).

6.4.3.4 Placement shifts between the PPNA and PPNB

Looking only at *vertically-placed* objects (PPNA=3, PPNB=4), there are no significant correlations, due to the small number of vertically placed items in each time period.

Looking to the *vertical and embedded* objects - exclusively populated by standing pillars - we see a great uniformity across time in terms of broad context, material, elaboration and type. All of the pillars form the Zagros region (PPNA-5, PPNB-1) were made of clay, and all of the pillars from the Urfa region (PPNA-19, PPNB-8) were made of ground limestone. What presents itself as anomalous is the correlation between single pillars and multiple pillars, during the PPNA pillars appeared to be deposited singly, though in the PPNB, more appeared to be placed in groups. The pillars from Göbekli tepe, aside from the paired central and door-flanking pillars, were considered singly

Combining the results from both *vertical objects and vertical and embedded objects*, one correlation proved significant: specific location. Depositions on a wall are far less likely to be deposited with a vertical orientation during the PPNA and earlier periods than on a floor. This likely relates to the pillar problem. All objects classified as both vertical and embedded were pillars of stone or clay. As noted above, the stone pillars came from the Urfa region, and the clay pillars come from the Zagros.

Three significant correlations rise from the data set of *horizontally-placed* depositions. During the PPNA, objects were more likely to be made of only one type of material while, during the PPNB, horizontally-placed objects were more likely to be composite. Generally, horizontally-placed items tended to be in structures, on floors and partially visible. The proportion of materials remained constant between the earlier and

later periods. Significant statistics exist for fragmentation, but as fewer than half of the data entries have information concerning fragmentation, that statistic cannot be trusted.

Combining objects that were placed *horizontally and both horizontally and embedded* provides no statistically significant changes between the PPNA and PPNB.

6.4.3.5 Visibility shifts between the PPNA and PPNB

This section considers depositions separated by visibility. Looking only at those depositions placed so as to be *completely invisible*, we see a greater proportion of bone in both the PPNA and PPNB, yet the proportion of other material increases significantly during the PPNB. While invisible objects were more likely to be found in structures during both the PPNA and PPNB, the difference in proportion by which structures were favoured decreased from 5:1 to 3:1. The elaboration of objects placed invisibly again follows the general trend, with far fewer elaborated objects in the PPNA (1:4) and many more elaborated objects in the PPNB (roughly 1:1). This raises the interesting question: why bother elaborating objects if they are to be placed invisibly? The greater number of steps involved in the creation and transformation of objects increases the complexity of ritual behaviour, and diminishes the body of people capable of performing all of the ritual duties. It is, of course, possible that the objects chosen for deposition had been altered by human hands long before they were considered appropriate for inclusion in a ritual deposit.

It could be a subtle power play; that serves to place supernatural access in the hands of individuals or families, and away from the group as a whole. There are no significant correlations between invisible depositions between the PPNA (n=31) and PPNB (n=45) in terms of type, quantity, fragmentation or specific location. In fact, the relative proportion of outcomes was nearly identical between both periods.

Considering only those depositions that were *clearly visible*, there is an extremely significant change in cardinal orientation over time. During the PPNA and earlier periods, objects placed in the north or south outweighed objects placed in the east or west by 4:1, yet so few objects were clearly visible and placed in the northern or southern peripheries of the site during the PPNB that the ratio changes to 1:9. This could be explained by the lack of deposits in the southern periphery of sites during the PPNB; however, the ratio of N-S to E-W is closer to 1:2 when all depositions contemporary with the PPNB are examined. This discrepancy indicates that cardinal location may have influenced which depositions were seen as appropriate to be clearly visible, and I will return to this in 6.4.4.

Partially visible objects shift from zero in the east-west peripheries during the PPNA to a majority in the east and west during the PPNB. This, too, follows the general trend, and can be explained by the next significant statistic which compares objects deposited in the southern periphery and all other cardinal locations. Many other statistically significant correlations emerge from the data concerning partially visible deposits, and are enumerated in Tables 6.44 and 6.45. During the PPNA, nearly all partially visible deposits were located on the floor. However, specific contexts changed during the PPNB, with not a single partially-visible deposit on the floor. Instead of being obscured though the placement of

other, covering items, partially visible items during the PPNB are more likely to have been sunk into a platform or a bench. This is not because benches and platforms were unknown during the earlier period, they are clearly represented in communal structures at Göbekli tepe; Wadi Feynan 16; Tell 'Abr and Mureybet. The difference is that when items are ritually deposited in benches at sites contemporary with the PPNA, they are completely buried within the bench. The knowledge that some invisible item was within the bench may either have been so common and public that no reminder of its presence was necessary, or those who constructed the item(s) into the bench did not want to publicise or share that information.

The care put into the creation of partially disguised items increases substantially during the PPNB. Every single partially visible object had been altered or elaborated prior to deposition. This correlates with the decreased tendency for bone to be deposited during the PPNB, as bone is less likely to be elaborated than other materials. 5/12 partially visible depositions corresponding to the PPNA or earlier were made of bone, while no partially visible deposition from the PPNB was made of bone; they were exclusively ground marble and limestone. The tendency for partially visible depositions to be found in structures increases to 100% during the PPNB.

Partially Visible	**North south**	**East west**	**South**	**N, E, W central**	**Floor**	**Other**
PPNA n=16	12	0	12	1	13	3
PPNB n=19	0	9	0	16	0	12
	P=0.0001		P<0.0001		P< 0.0001	

Table 6.44: Statistically significant correlations between partially visible deposits.

Partially visible	**Elab**	**Not**	**Bone**	**Not bone**	**Stone**	**Earth**
PPNA n=16	11	5	5	11	11	0
PPNB n=19	19	0	0	19	12	7
	P=0.0135		P=0.0135		P=0.0292	

Table 6.45: More statistically significant correlations between partially visible deposits.

Looking at *plastered* objects, it is extremely significant that so few exist. During the PPNA and before, an aurochs horn core was plastered into a wall at Mureybet in the North Euphrates. During the PPNB, both instances of plastering come from Boncuklu, in the Konya Plain. An aurochs rib was built into a hearth and plastered over, and a wall was built around a pair of truncated aurochs skulls, which were then plastered along with the wall. That all instances of plastering occurred with animal bone, and into structural elements is unsurprising. What is interesting is the recurrent species and paucity of plastered-over

structured depositions, especially considering the glut of such types during the Pottery Neolithic (see discussions in 6.5 and 6.6).

PPNA Partially visible	PPNB Partially visible
North or south	East or west
In/on floor	Not in/on floor
Elaborated	Elaborated, proportion increases hugely
Made of bone	Not made of bone
Made of stone	Made from earth

PPNA Invisible	PPNB Invisible
More bone	More bone, but proportion decreases
In a structure	In a structure, but proportion decreases
Not elaborated	Elaborated

Table 6.46 a,b: Summary of general trends for all regions, separated by visibility (a- partially visible; b- invisible).

In sum, there are very few plastered objects that had been ritually deposited during either time period. Clearly visible objects are ritually deposited in the northern and southern peripheries during the PPNA, but this strongly shifts to the eastern and western peripheries during the PPNB. The shift of placing objects so as to be partially visible from the floor during the PPNA to anywhere but the floor during the PPNB may also inform the changing status of the floor as a venue of display (Table 6.46a).

6.4.3.6 Main Material shifts between the PPNA and PPNB

This section will describe shifts in depositional activity according to material categories. Visible significant changes in the treatment of materials in the assemblage between the PPNA and PPNB were not seen in depositions of scapulae, animal jaws, human crania, clay, plaster, unworked stone, ground stone, chipped stone, horn or antler. In the case of chipped stone, there were no instances of structured depositions in the PPNA, and only 5 during the PPNB. Other materials that cannot be compared as they appear only in the PPNB include: human tooth; digit and long bone, animal tooth; knucklebone and claw, shell, seed, ceramic and marble. (It may well be that the unspecified ground stone recorded in the PPNA and earlier periods may have been made of marble or some other stone, but as they were not specifically identified they cannot be used in this analysis).

Significant shifts in depositional activity are seen in animal head parts, animal crania, clay, all ground stones combined, all bones, and all non-bones. Although no statistically significant shifts are seen in the following materials, it is worth noting that the deposition of scapulae, human crania and human bone increase during the PPNB, while deposits of clay, horn, antler and animal head elements decrease.

Ground stone in general included all instances of worked stone except chipped and unworked stone. Specially-deposited instances number 26 from the PPNA and before, and 24 from the PPNB. The only known stone type from the PPNA was limestone (n=23, 3 unknown). Basaltic rock was commonly used to make fancy pestles and bowls; and marble was used to make bracelets, but none of these were specially deposited. The slight decrease in PPNB stone depositions is not seen in a proportional decrease in limestone (n=18) but rather the addition of marble, often shaped into dishes or tools.

The most significant shift in ground stone deposition is from the floor in the PPNA to anywhere else during the PPNB (Table 6.49a). During the PPNA, ground stone was deposited preferentially on the floor at a rate greater than 4:1; while in the PPNB, the shift away from the floor at a ratio of 1:4. This may be due to heavy reuse of broken ground stone implements as structural support in walls, pillars or benches. Another interesting shift is from within to without structures. Ground stone objects are 12 times more likely to be placed inside a structure during the PPNA, yet only twice as likely to be found within a structure during the PPNB. In addition, only 1 ground stone deposition was recorded in a domestic structure. Finally, in the PPNA, ground stone objects were far more likely to be alone while, in the PPNB, ground stone objects were more likely to be placed in groups or caches. The placement of ground stone objects in caches is interesting, as it shows a separate function from structural placement. The physical and spiritual reinforcement of walls is often derived from the placement of individual items within the structure, yet caches of items if placed too near each other could actually disrupt the physical stability of dry stone walls.

The use of *clay* also shifts in terms of visibility, fragmentation, elaboration and quantity (Table 6.49b). Specially deposited clay objects are restricted to the Zagros and Middle Euphrates regions during the PPNA, with only 9 known instances: a necklace and a box from the Euphrates, and 6 sets of pillars from the Zagros and Upper Mesopotamian area. Clay is known from the Batman and Urfa regions during the period contemporary with the PPNA. At Hallan Çemi circular platforms were made from clay, and clay was used as mortar at Göbekli tepe. Interestingly, there is no evidence for figurines or shaped clay from either site; clay was strictly architectural. It is not that clay was not available in the Batman and Urfa regions, but that it was not seen as a material from which objects appropriate for ritual deposition were made.

During the PPNA, clay objects were rarely broken, rarely placed invisibly, almost never singly deposited, and there is only one instance of clay shaped into a figurine. In stark contrast, the 7 clay objects of the PPNB are as likely to be singly as multiply placed; are usually difficult or impossible to see; and twice as likely to be in figurine shape than in any other shape. The use of clay in structured depositions spread south to the Levant, north to the Taurus, and west to the Lake District, while still being used in the Ergani Plain, Zagros and Northern Euphrates regions.

New emphasis on the frailty and individual relationships to the human form is seen during the PPNB, as many specially-deposited clay objects are anthropomorphic figurines. The shift from large clay pillars at Qermez Dere and Nemrik 9 to diminutive representations at Höyücek and Cafer höyük shows a kind of miniaturization of the human image.

The ritual use of *animal crania* is rarely contested. Interestingly, the number of identifiable structured deposits of animal crania decreases between the PPNA and PPNB (Table 6.49c). There is a definite decrease also in the species deposited. During the PPNA depositions of crania of boar (Çayönü); goat (Zagros); sheep (Batman) and aurochs (Batman, Levant, North Euphrates) are seen, while in the PPNB, species are restricted to aurochs (Konya; North Euphrates; and Çayönü), with 1 sheep skull from the Zagros region. This conservatism is seen also in specific and broad locations. During the PPNA, animal crania are 3 times more likely to be placed on a wall or bench than in a midden, pit or grave; and half as likely to be found outside of structures as within. On the other hand, PPNB depositions of animal crania are four times as likely to be found in visible locations such as walls, benches and niches, and entirely within the confines of structures. Skulls are rarely combined with other objects in either period; the only example of composite materiality is the skull with a red polished stone in its mouth from Hallan Çemi.

Grouping together all *animal cranial elements* (jaw, tooth, antler, horn, tusk and calvarium), there is no shift in specific location, visibility, orientation, elaboration or quantity between the PPNA and earlier (n=25) and the PPNB (n=13). In both periods, animal cranial elements are more likely to be found in a structure, horizontally-placed, invisible, and single (Table 6.49d). The one statistically significant shift is in the types of materials. Animal cranial elements deposited during the PPNA and earlier were seven times more likely to be made of a single material. The three instances of composite depositions involving animal head parts contemporary with the PPNA and before are a pile of burnt gazelle horns and skull elements fused to a limestone crucible from ‘Abr; 2 different species of deer antler placed so as to cross each other and set into plaster at Hallan Çemi, and the aurochs skull with a red stone in its mouth, also from Hallan Çemi. None of these 3 shows another material being applied to or on the animal bone. In the first 2 cases, the deformation is incidental. By the PPNB, the proportion of single to composite materials is equal, with the majority of composite depositions being clusters of various types of materials including animal head parts. The clusters include plaster poured onto an irregular pile of cobbles, clay flakes and bones from Pınarbaşı, a cluster of antler, mandible and knucklebone placed on a threshold from Höyücek; and 3 clusters of mixed animal bone from Kerkh. This may demonstrate a change in the inviolability or strength associated with the bone that had previously been respected.

The numbers of animal bone, animal head parts and animal crania all decreased between the PPNA and PPNB. Human bone, on the other hand, increased and the proportion of human crania increased from ¼ of the human bone to nearly 100%.

Human crania, though without any statistically significant correlations, do show some interesting trends (Table 6.49e). The lack of statistical significance may be due to the

small number of depositions. Half of the depositions during the earlier period were found in the fill of a structure or a midden area. There is some regional variation. From Qermez Dere and Nemrik 9 skulls are placed or dug into hut infill. There is 1 attempt to bury a skull in a cemetery, and it is the only such burial at Nemrik 9. 2 crania were placed in a post hole in the earliest communal building at Jerf el-Ahmar; with another 3 in an outdoor oven, covered with a stone. Aside from the burial at Nemrik 9, all of these skulls could easily be interpreted as abandonment or closing deposits. All deposits of human skulls corresponding to the PPNA were invisible. During the PPNB, nearly half of the human crania had been deposited in pits, and none were recovered from fills or middens. There were 3 pits with a pair of human skulls each from Nevalı Çori; an upside-down skull in a pit from Boncuklu; 2 red-coloured skulls in pits or hollows from Abu Hureyra; a skull built into a wall from Abu Hureyra; and three different skulls placed on coloured pedestals from Mureybet. While the majority of skulls were again invisible, at least 3 from Mureybet had been placed so as to be clearly visible.

During the PPNA, crania were equally likely to be found within or without a structure, yet during the PPNB, crania were over 4 times as likely to be found in a structure, and all instances were either inside or next to a domestic structure. This may demonstrate a shift in many disparate practices to a more codified, conservative practice.

Looking at *all bone, human and animal*, there is no apparent shift in placement, quantity or number of types of materials used in deposited objects between the earlier and later periods. There is, however a very significant shift in the fragmentation and visibility of bone depositions (Tables 6.47 and 6.49f). The fragmentation ratios do not follow the general trend, wherein greater destruction is seen of objects deposited during the PPNB. Interestingly, there is no shift in cardinal location, as might be expected based on previous statistics. The high number of animal bone depositions in the northern periphery during the PPNB outweighs the lack of depositions in the southern periphery during the PPNB. Again, this may be the result of a crystallization of practice during the PPNB.

All Bone	**Broke**	**Not**	**Invisible**	**Not**	**Clearly**	**Not**	**North**	**Other**
PPNA n=45	8	3	5	30	23	12	3 (Hu-2, Anim-1)	19
PPNB n=43	4	11	26	12	10	28	14 (Hu-1 Anim-13)	23
	P=0.0447		P<0.0001		P=0.0010		P= 0.0738 *(not quite signif)*	

Table 6.47 Statistically significant correlations between bone deposits.

Looking at depositions of all *non-bone* materials, there are significant shifts in placement, visibility and broad location over time (Tables 6.48 and 6.49g). Nonorganic objects are far more likely to be located within structures during the earlier period, while

the gap decreases during the PPNB. In terms of visibility, the low likelihood of a non-bone object during the PPNA being invisible slowly changes to a predominance of partially visible deposits during the PPNB. The greater proportion of vertical and embedded objects in the PPNA is due to the presence of pillars.

Not Bone	**In struc**	**Not**	**Invisible**	**Not**	**Clearly**	**Not**	**Vert + V emb**	**Horiz + H emb**
PPNA n=37	35	2	7	27	16	18	24	5
PPNB n=51	33	17	19	27	8	38	12	12
	P=0.0014		P=0.0579 *(not quite)*		P<0.0001		P= 0.0176	

Table 6.48 Statistically significant correlations between non-bone deposits

PPNA Ground stone	**PPNB Ground stone**
Floor	Anywhere but floor
In structure	In structure = outside of structures
Only one item	In a cache

PPNA Clay	**PPNB Clay**
Whole	Broken
Not invisible	Invisible
In a group	Single = multiple pieces
Only 1 figurine	Most are figurines

PPNA Animal crania	**PPNB Animal crania**
Many species	Fewer species
Wall or bench	More visible specific locations
Outside structure	In structure

PPNA All cranial elements	**PPNB All cranial elements**
Single material	Composite material

PPNA Human crania	**PPNB Human crania**
Abandonment or closing deposit	-
Invisible	-
In fill	In pits
-	In/next to dom struc

PPNA All bone	**PPNB All bone**
Visible	Invisible

PPNA All not-bone	**PPNB All not-bone**
In a structure	Not in a structure
Clearly visible	Invisible
Vertical	Horizontal

Table 6.49 a-g: Summary of general trends for main material (a- ground stone; b- clay; c- animal crania; d- all cranial elements; e- human crania; f- all bone; g- all non-bone materials).

6.4.3.7 Fragmentation, Elaboration and Decoration shifts between the PPNA and PPNB

The statistical significance of correlations between *fragmentation* ratios are invalidated by the low proportion of deposits with recorded data.

Elaborated objects are most often made of materials other than bone and most often shaped (Table 6.50). A few coloured items appear in both the PPNA and PPNB, while incised and spherical objects are found only during the PPNB. One figurine is known from the PPNA, and 4 from the PPNB. The anthropomorphic figurine from PPNA Karim Shahir was placed alone on a red-coloured floor, while the later anthropomorphic figurines were all found in groups. 4 anthropomorphic figurines from Cafer höyük were laid on a new pisé floor along with a bone shape and a decorated terra cotta plaque. A cluster of female figurines was found on a plastered platform at Höyücek. 2 other hoards including figurines were found in stone-robbing pits at Basta. All of these figurines were made from clay. Although most of the elaborated objects that were specially deposited during the PPNA were made of stone, there were several pairs and sets of pillars from Nemrik 9 and Qermez Dere that had been fashioned from clay. Over 20 clay pillars are known from the PPNA, all from the Zagros regions. The only clay pillar dating to the PPNB comes from Ganj Dareh, also in the Zagros region.

Elaborated	**In struc**	**Not**	**North south**	**East west**	**Clearly**	**Not**	**Clay**	**Plaster, ceramic**
PPNA n=37	35	2	26	5	16	18	9	0
PPNB n=53	34	18	10	23	8	39	7	13
		P=0.0015		P<0.0001		P<0.0061		P= 0.0012

Table 6.50: Statistically significant correlations between elaborated deposits.

While *decorated* objects are found in all time periods, certain types of decoration are found exclusively in the PPNB or later (Table 6.51). Objects representing ruminants and felids occur exclusively in the later periods. While the T-shaped pillars from Göbekli tepe have a vast bestiary incised across them, the pillars themselves are representative of human figures, wearing pelts and in some instances wringing clasped hands. Specially deposited figurines are also almost exclusively found in the PPNB and later periods.

Decoration	**Parallel Lines**	**Geometric**	**Anthropo-morphic**	**Ruminant**	**Bird**
PPNA n=23	1	1	20	0	1
PPNB n=27	3	4	16	2	2

Table 6.51: Totals of types of decorations seen in the PPNA and PPNB.

Several interesting correlations arise when comparing *anthropomorphically-decorated* deposits. The great majority in both time periods were made of ground stone, but shifts were seen in the quantity, placement and specific location of these structured depositions (Table 6.52). During the PPNA, anthropomorphic objects are 9 times more commonly found singly, while anthropomorphic objects deposited during the PPNB were as likely to be single or in groups. The number of pillars also decreases between the PPNA and PPNB. The high probability that an anthropomorphically-decorated object would be placed on or in the floor during the PPNA is due to the large number of standing pillars.

Anthropo-morphic	**Single object**	**Many objects**	**Vert + emb'd (pillar)**	**not**	**Floor**	**Wall, plat niche or bench**	**Floor**	**Bench**
PPNA n=20	18	2	17	3	18	1	18	0
PPNB n=16	8	7	7	9	4	11	4	6
	P=0.0216		P=0.0140		P<0.0001		P= 0.0006	

Table 6.52: Statistically significant correlations between anthropomorphically-decorated deposits.

In general, elaboration and decoration trends are closesly related. Both the types and locations of elaborated objects change between the PPNA and PPNB (Table 6.53a). Ritually-deposited objects first appear with ruminant decoration after 8700 cal BC, along with an increase in the depiction of birds, parallel lines and geometric decor (Table 6.53b).

PPNA Elaborated	**PPNB Elaborated**
In structure	Not in structure
Clearly visible	Not clearly visible
Clay	Plaster or ceramic

PPNA Anthropomorphic decoration	**PPNB Anthropomorphic decoration**
Single	Cache
Pillar	Not a pillar
In/on floor	Wall, other
floor	Bench

Tables 6:53 a,b: Summary of general trends of elaborated (a) and decorated (b) ritual deposits.

6.4.4 Discussion of shifts between the PPNA and PPNB

In this section, I will return to some of the more striking and significant shifts in ritual deposition between the periods corresponding to the PPNA and PPNB in order to interrogate the specifics of the patterning. Following the pattern established at the beginning of chapter 6, I will begin with broad location, and proceed through the attributes that had important shifts that require further discussion.

6.4.4.1 Broad Location Shifts: further discussion

Depositions outside of structures shift from the majority not having been elaborated to having been elaborated. While this could be explained by following the trend of objects in

the earlier period being less likely to have been elaborated, let us take a closer look. Only 3/21 deposits external to structures contemporary with the PPNA and earlier had been elaborated; the coloured floor layers from M'lefaat, the incised stele from Çayönü and the pestle from Hatoula. None of these materials were bone, while the 18 deposits that had not been elaborated were made from bone. Looking now to the period contemporary with the PPNB, 11/21 external depositions had been elaborated. These included a coloured human cranium from Abu Hureyra, showing that bone is beginning to be treated differently.

Looking again to deposits placed outside of structures during the PPNA, only 2 of the 16 were even remotely related to structures. (There are an additional 4 deposits from Hatoula that are marked as "unclear" as they were found "on a concentration of pebbles." The location of the pebbles is unknown, so these depositions have been removed from analysis of broad location). 11 deposits (from Hallan Çemi, M'lefaat, Çayönü and Demirkoy) were placed in non-bounded open areas, while 2 were placed in a courtyard (Nemrik 9; Jerf el-Ahmar). There is one example of a midden deposition (WF 16) and 1 from a cemetery (Nemrik 9). There are domestic structures from each of these sites[9], so the ritual deposition of objects or clusters outside structures cannot be attributed to excavation methods focusing only on central areas. Looking towards regional trends, a huge majority (90%) of the Batman depositions are in a central activity area, while only 5/13 deposits from the Zagros area are outside of structures. Both deposits from Zawi Chemi Shanidar are within a few metres of a structure, 1/9 from Nemrik is in an activity area, as is 1/4 from Çayönü. It seems then, that working areas, often in the centre of sites, were a focus of ritual activity. In contrast, of the 22 depositions known from the Euphrates area during the PPNA and earlier, only 1 is associated with an activity area. Similarly, only 1/7 from the Levant was placed in a central activity area, so it may be that further to the south, the central activity areas were less commonly a focus of ritual activity. The central areas of the Levantine and Euphrates sites have been excavated to some extent, especially at Hatoula. At Jerf el-Ahmar no main central activity area was found, but there were plenty of activity areas between houses that were excavated.

Looking to depositions contemporary with the PPNB outside of structures, we see the majority of these are related to or in close proximity to structures. The 6 vessels in a pit from Cafer höyük were in a courtyard near a house; 2 human crania from Abu Hureyra were placed next to or between house walls; 2 pits from Boncuklu were dug next to domestic structures; and several clusters of bone and plaster from Pınarbaşı were placed near walls of Building 4. Both bone and stone were external to structures, and both were placed in relation to structures, in contrast to the external stone deposits from the earlier period which were entirely separate from structures.

The materiality of these external depositions contemporary with the PPNB also deserves a closer look. During this period we see the beginnings of clusters of disparate objects. At Pınarbaşı, there is a rib, long bone and jaw placed in the fill of an irregular pit

[9] None have been recovered from the highly-eroded site of Demirköy, but the extant evidence is consistent with occupation.

along with cobbles, charcoal and a few clay flakes. It appears that plaster had been poured into or on top of this conglomeration. The interpretation of the site as a hunting camp (Baird 2011) is consistent with the description of these pits as hunting shrines "tied not to the individual hunter but to a collective community" (Russell 2012: 61). The inclusion of distinctive elements such as the jaw, as well as meat-bearing elements like the rib serves to identify the animal and its importance. The charcoal and clay may represent the processing of the carcass, and the plaster can be interpreted as either the "flesh" of the animal, or as an attempt to "fix," or make permanent, the location of the deposit. In either case, elements of the hunted animal are returned to the area from whence they came. Other, similar clusters in shallow or irregular pits show that this was not an infrequent occurrence at Pınarbaşı.

A very complex cluster of objects from Cafer höyük was found in a cylindrical pit dug into a courtyard just outside of a building including: a red marble stemmed cup, a large limestone basin, a marble brazier, obsidian blades, as well as ceramic and clay balls. This focus on combining many different types of materials into one ritual deposit is seen elsewhere at Cafer höyük (see pg. 177), and foreshadows the massive and complex clusters of objects at Çatalhöyük. The types of objects brought together for the Cafer höyük deposit are very different from those from the Pınarbaşı hunting shrines. The Cafer objects have had a great deal of care taken in their creation, and refer to more domestic activities: heavy stone vessels are not easily transported, while clay balls are often interpreted as pot-boilers.

The other external, stone deposits contemporary with the PPNB - 2 rows of standing stones from Çayönü and a limestone figurine from 'Ain Ghazal are interesting as they are both associated with pathways. The standing stones from Çayönü would have lined the walkway leading to the Terazzo Building, and the headless female figurine made of pink limestone from 'Ain Ghazal was placed at the end of a path consisting of about 15 closely-placed stone slabs. This may indicate a shift from ritual as a static action, closely tied to a single location to one associated with the motion of a journey.

All of these considerations: relation to structures or activity areas; elaboration and materiality of deposits; and the static or dynamic attributes of a deposition inform the interpretation of external space as a locus of ritual activity. External spaces can be activity areas related to specific structures (as at PPNB Cafer höyük) or centralized (as at PPNA Hallan Çemi). They can be cemeteries (as at PPNA Nemrik 9) or away from settlement areas (as at PPNB 'Ain Ghazal). The evidence points to a majority of external ritual events as a result of community activities during the time contemporary with and earlier than the PPNA; but related to individual, specific houses during the PPNB. While there is still evidence for communal, external ritual during the time contemporary with the PPNB (as the hunting shrine clusters as Pınarbaşı), it seems likely that these events were for sections of the community (*e.g.* those that went on hunting parties), rather than for the entire community. Although there is a shift from static ritual depositional events during the PPNA towards ritual deposits emphasizing motion, this phenomenon is not total; apotropaic, foundation and abandonment events continue in external locations through the PPNB. The

expansion of materiality and the narrowing of paths leading to ritual deposits may indicate the partitioning of ritual activity to specific groups.

6.4.4.2 Specific location shifts: further discussion

Structured deposits in and on floors change from a majority of items having been elaborated in the earlier periods, to a majority not having been elaborated in the PPNB. Looking more carefully at the PPNA and earlier floor deposits (n=34), 30 had been elaborated, usually shaped, while 4 had no evidence of human alteration. Taking a look first at those depositions which had not been elaborated prior to deposition, we see a wide geographical range: one deposition each from the southern Levant, Zagros, and 2 from the Euphrates. A human jaw and antelope antler in central stone pavement at Nemrik 9; a pair of horns moulded into the floor before a hearth, in a low bench at Wadi Feynan 16, a human skeleton at Jerf el-Ahmar, and a trench full of charred bones at Tell' Abr. All of these were bone depositions; 2 human, and 2 animal. Of the 30 elaborated depositions, 24 were pillars, thus contributing to the majority of elaborated depositions appearing to be made of shaped limestone. Pillar deposition was restricted geographically to the east of the study area: from Çayönü, Göbekli tepe, Nevalı Cori and Qermez dere. Even by temporarily removing pillars from the dataset there are still 7 elaborated deposits, nearly twice as many as deposits of objects which had not been elaborated. Of the elaborated objects that were not pillars, only 1 was made of clay: a figurine from Karim Shahir. The other elaborated objects deposited in or on floors during the PPNA or before were all shaped stone; either a shallow plate placed before a pillar at Göbekli tepe, or stela associated with abandonment events. A stele in the Flagstone building and a pair of stela from the courtyard area, all 3 broken and buried from Çayönü; and a stone stele from Qermez dere set on its side during the abandonment of house RAA.

All but 2 of these floor depositions were found inside structures. The other 2, a human jaw at Nemrik and the grooved slabs from Çayönü, were both found in a courtyard. This may well be due to excavation techniques that focus on the occupational evidence from sites. 27 of these earlier floor depositions were of large, heavy stone objects, which may also have contributed to their continued location on the floor, despite the effort taken in their creation and transport. In sum, PPNA floor depositions were elaborated (or made of bone, but not both) with all but 1 clay figurine made of stone. Not all floor depositions were inside structures, pointing to the importance of working surfaces outside of buildings during this earlier period.

There are 18 depositions during the period contemporary with the PPNB found in or on the floor. Of these, 7 had not been elaborated. Again, all of these were bone. There was a bovine rib pressed into a threshold at Boncuklu; 2 animal scapulae placed in clearly visible positions from Cafer höyük; 3 detached human crania from Mureybet, which had been left in the angle between the wall and floor of buildings; and a cluster of cow and pig bone left on a floor at Tell el-Kerkh. Of the elaborated items, only 2 instances could clearly be called pillars, both from Nevalı Çori. The 2 rows of standing stones from Çayönü can be considered

pillars as well, as they would have made a colonnaded walkway towards the terrazzo building. Interestingly, the terrazzo building also had a deposition of a limestone basin fragment, with a human face. Other elaborated materials found deposited in or on floors include caches of 230 and 86 flint blades from Abu Hureyra and Tell el-Kerkh respectively; a clay bowl with ochre from the skull building at Çayönü; and a cluster of delicately formed objects laid upon a new pisé floor at Cafer höyük.

The cluster deserves extra attention as it precludes or foreshadows later, composite, clusters. It contained 4 figurines; 3 female and 1 male, a pierced bone spoon and an incised terracotta plaque. This is very different from the clusters found at PPNA sites, which tended to be multiples of the same object rather than mixed groups. For example, there was a group of 3 scapulae from a surface at Mureybet, and 8 human skull caps stacked in a midden from Wadi Feynan 16.

Of the depositions placed on floors, we see a broader range of materials in the PPNB. More bone is being deposited, and this bone is being treated in new ways; both in terms of elaboration and combination with nonorganic materials. There are more clusters of materials and different compositions of clusters. In contrast, the range of materials from which pillars are made contract during the period contemporary with the PPNB.

Of the PPNB pillars, those from Nevalı Çori were found inside buildings, while the set from Çayönü were found marking a path in a courtyard. We see a new way of placing and disposing of pillars both in the Ergani and Urfa regions; pillars are no longer exclusively disposed of in buildings, or in floors. Statuary chunks have been recovered from walls at Nevalı Çori.

There is a general trend of shifting focus from the floor as the most appropriate place for a deposit during the PPNA and before to anywhere else but the floor during the PPNB (as shown in Table 6.32). Other specific locations show a similar trend. Separating locations into those most likely used for display (wall, bench, threshold, platform) and those used to disguise objects (pit, post-hole, fill, midden), there is a clear tendency for locations used for display to give way to locations used for hiding objects. This, combined with the tendency for earlier deposits to be placed on the floor may indicate that the floor was itself used as a location for display during the PPNA and earlier period. This can certainly be extrapolated to include objects placed in the centre of a site's activity areas.

6.4.4.3 Visibility shifts: further discussion

Clearly visible depositions shift from being placed in the northern and southern peripheries of a site to the eastern and western peripheries. This may indicate that the cardinal location of a ritual deposit was significant. Many of the sites that date to the PPNA and earlier are arranged around a central activity area, while a more linear arrangement of buildings and separation of ritual and domestic structures between east and west can be seen at some PPNB sites such as Nevalı Çori and Çayönü. Interestingly, the earliest secure evidence for the domestication of cereals comes from these two sites (Nesbitt 2002; 2004). The importance of the sun to agricultural production cannot be underemphasized, so it

could be suggested that a shift in ritual activity to the direction of sunrise and sunset was related to the beginnings of site-wide, formalized agricultural activity.

There is a tendency for objects NOT made of bone to be clearly deposited during the PPNA, and bone objects to be invisibly placed during the PPNB. The number of clearly visible and invisibly-placed objects remains proportional from the PPNA to the PPNB. As there are more depositions during the PPNB, one would expect far more of everything to be invisibly placed during the PPNB. This disparity may shed light on the meanings or use of visibility in structured depositions. Clearly deposited objects, at face value, had little to no control over access; anyone could see them. They could serve as a reminder or as a warning. The very earliest sites -Zawi Chemi Shanidar and Hallan Çemi- only had clearly deposited objects of animal bone. As the PPNA progressed, clearly placed depositions turned entirely to pillars of clay and stone. Despite this, the majority of depositions during the PPNA -those not clearly visible- were made of bone. It may be that there was a progression from the clearly visible bone object of supreme importance at the end of the Epipalaeolithic to the beginnings of the control of knowledge through the restricted visibility of bones during the PPNA to the outright hoarding of ritual information in the PPNB. The huge pillars, both inside and outside of structures, are all elaborated into various shapes, while the single bone deposits of the earliest period were never elaborated.

Still considering clearly deposited objects, during the PPNA, we see a greater proportion of multiple objects (rather than single). Yet, in the PPNB, far more single objects than groups of objects are clearly deposited. Power, or the puissance of a particular act of deposition, may have come from adding more objects in the PPNA, but focusing on one, very special, elaborated object during the PPNB.

6.4.5 Discussion of Regional Trends across the PPNA and PPNB

Many of the geographic regions do not show evidence for structured depositions for both the PPNA and PPNB, and cannot be considered in this section. The North Euphrates, Levant, Urfa, Zagros and Çayönü do and will. However, there are no statistically significant correlations between deposits in the PPNA and earlier and the PPNB in the Levant or Çayönü, likely due to very small sample sizes. Just outside of the significance range is a definite shift from zero decorated objects in the PPNA *Levant* to an equal distribution between decorated and undecorated objects during the PPNB.

The *Zagros* region, surprisingly, presents a statistically significant correlation. This is surprising as there are only 2 recorded instances of structured deposition during the PPNB. Normally, with such a small sample, I would not have expected anything of significance. However, nearly all of the deposits from the PPNA and earlier were in or on floors, while neither of the PPNB deposits were.

Two significant correlations come from the *Urfa* data (Table 6.54). Each period has evidence from only one site, and generally the data resemble each other quite closely. The

main difference is the presence of specially-deposited bone at the later site of Nevalı Çori. This accounts for both of the significant shifts: from depositions made exclusively of ground stone, to depositions of both ground stone and human bone; as well as from an entirely elaborated set of specially deposited objects, to a more heterogeneous mix of both elaborated and non-elaborated objects.

Urfa	Elab	Not	Bone	Not bone
PPNA n=21	21	0	0	21
PPNB n=19	14	5	4	15
	P=0.0177		P=0.0424	

Table 6.54: Statistically significant correlations for the Urfa region between the PPNA and PPNB.

A great many statistically significant correlations emerged from the *Euphrates* data (Table 6.55). In order to balance the numbers and to be able to include the Cafer material, I combined the results from Cafer höyük with the other PPNB Euphrates sites. In terms of broad context, specific context and elaboration, the proportions change from a very polarized picture during the PPNA to a more balanced representation during the PPNB. Conversely, in terms of quantity and types of material, the proportions became more polarized during the PPNB. This geographical area is interesting as it bucks several of the trends established as standard practice between the PPNA and PPNB. It is more commonly seen for depositions to be located on the floor in the earlier period, and the wall in the later period. The data from the Euphrates region show exactly the opposite: a concentration of wall deposits giving way to a focus on floor deposits. In fact, the only significant correlation that does follow what would be expected from Table 6.32 is the change from unelaborated objects to elaborated ones. This may be related to the Euphrates region's closer ties to the Levant during the earlier period, or some other as yet unknown explanation.

Euphrates + Cafer höyük	In struc	Not	Elab	Not	One type	Many	One object	Many	Floor	Wall
PPNA n=22	21	1	2	19	16	4	10	9	2	9
PPNB n=23	15	8	12	11	23	0	19	2	9	4
	P=0.0220		P=0.0034		P=0.0393		P=0.0123		P= 0.0188	

Table 6.55: Statistically significant correlations for the Euphrates and Taurus region between the PPNA and PPNB.

Levant PPNA	Levant PPNB
No decorated objects	Decorated objects = undecorated

Zagros PPNA	Zagros PPNB
In/on floor	Not in/on floor

Urfa PPNA	Urfa PPNB
No bone depositions All elaborated	Some bone A few not elaborated

Euphrates PPNA	Euphrates PPNB
All in a structure Not elaborated A few of 1+ material One object=many In/on wall	2/3 in a structure Elaborated=not All only 1 type Only 1 object In/on floor

Table 6.56a-d: Summary of regional trends between the PPNA and PPNB (a- Levant; b- Urfa; c- Zagros; d- Euphrates)

6.5 POTTERY NEOLITHIC

This section will first describe the data from all sites dating to the Pottery Neolithic in 6.5.1, then tease out correlations between attributes of the data set in 6.5.2. Sub-section 6.5.3 will compare the data from the PN with the previous two periods. For the relationship between dates of sites dating to the PN, see Figure 6.2. For absolute dates and calibrations, see Appendix 2.

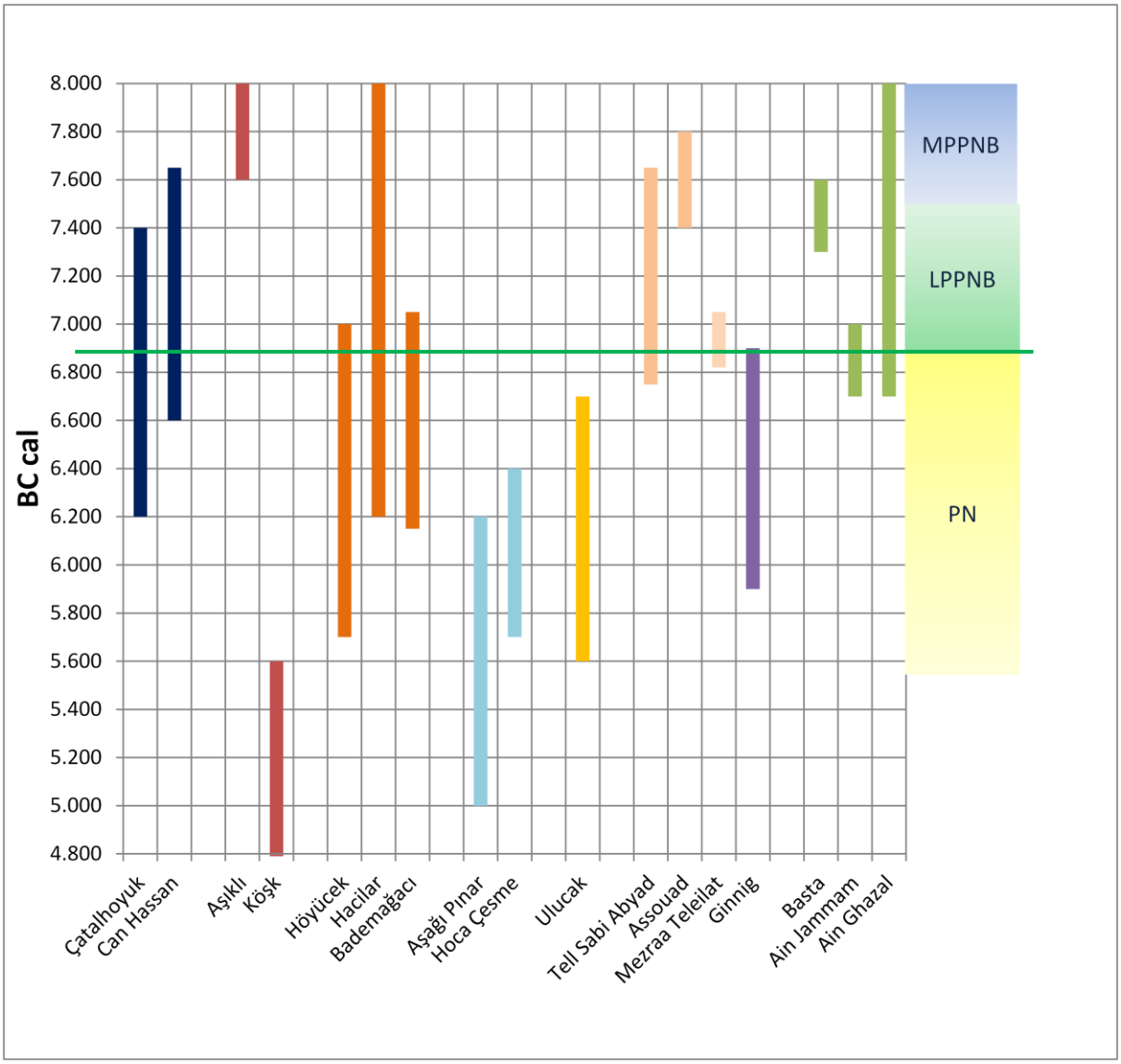

Figure 6.2: Calibrated radiocarbon dates for the later periods (Navy-Konya Plain; Red- Cappadocia; Orange-Lake District; Light Blue-Thrace; Yellow-Aegean; Pink-Euphrates; Purple-Batman; Green-Levant). Green line shows the division for PN.

6.5.1 Description of the data

Structured depositions during the Pottery Neolithic were restricted geographically to 9 sites in Thrace, the Aegean, Cappadocia, Konya, Lake District, Balikh and Zagros regions.

During the Pottery Neolithic, the majority of objects were found *in structures* (387/448); mostly domestic, though 2 depositions in non-domestic structures are known from Hacılar and 4 from structures of an unknown type from Köşk.

Considering *specific location*, 98 depositions were in or on the wall (of which 12 were painted walls); 91 in the fill; 60 on the floor; 53 in a pit or post-hole; 31 in the midden; 21 in a bin; 19 on a platform; 11 in a basin; 10 in an oven or hearth; and all other specific locations numbered under 10 (Table 6.57).

Wall	Fill	Floor	Pit, P-H	Midden	Bin	Platform	Basin	Oven
98	91	60	53	31	21	19	11	10
*12 painted								

Table 6.57: Specific locations of ritual depositions during the PN

234 *bone* objects were specially deposited, as well as 214 non-bone objects, of which 182/214 were elaborated. In stark contrast to earlier periods, 96 objects of bone had been *elaborated* and 55 had even been decorated.

The majority of depositions for which there are *cardinal location* data took place in the northern and western area of sites, though this predominance may be due to the glut of data from Çatalhöyük, whence most of the trenches were opened in the northern and western peripheries. Interestingly, 15 structured depositions were found in the southern peripheries of Aşağı Pinar, Mezraa-Teleilat and Tell Sabi Abyad.

Turning to *visibility*, nearly half (249) of all depositions were invisible, with 58 plastered over, 42 clearly visible, and only 15 partially visible. 93 structured deposits had been *decorated*; 57 as a ruminant, and 32 anthropomorphically. There were also 3 geometric designs on animal bone, and 1 plastered pair of felids.

In general, depositions during the Pottery Neolithic were more likely to be single, fragmented, horizontally-placed and made of one type of material. Insufficient data exist to make statements about burning.

6.5.2 Correlations between specific attributes within the PN

6.5.2.1 Broad context

Nearly 87% of all depositions during the PN were found inside domestic structures. Only 4 objects were found deposited in courtyards; 3 from Hacılar and 1 from Mezraa-Teleilat. No extramural or non-bounded open areas provided any structured deposits during the PN. All but 5 of the decorated objects were also found within domestic structures.

6.5.2.2 Specific context

Comparing objects from "hidden" contexts, such as pits, post-holes, fill and midden to objects from "display" contexts such as walls, benches and platforms, several interesting correlations arise (Table 6.58). A greater proportion of multiple objects were placed in hidden locations; while a greater proportion of composite objects, made from more than a single material, were placed in display locations. Even though the proportion of elaborated to non-elaborated items deposited in display locations was far greater, it is interesting to consider the huge number of elaborated objects that had been deposited in hidden

locations. Perhaps the creation of the object; the effort in its alteration, and/or the act of deposition were more meaningful to the actors than the visibility of the act. The proportion of bone to other material widens substantially from a sight favouring of inorganic material in hidden locations to a huge margin of bone over other material in display locations. This may be related to the statistic showing a bias towards composite materiality in display locations, as animal bone is far more likely to be plastered over in a conspicuous location than any other material.

Pottery Neolithic	**Single object**	**Many objects**	**Single type**	**Comp-osite**	**Elabor-ated**	**Not**	**Bone**	**Not**
Pit, fill, P-H, midden n=181	106	57	147	32	113	67	84	97
Wall, bench, platform n=124	90	22	54	64	94	28	81	43
	P=0.0066		P<0.0001		P=0.0113		P= 0.0015	

Table 6.58 Statistically significant correlations between hidden and display locations during the PN.

6.5.2.3 Main material

Separating the material into depositions of bone and depositions of other materials, a great many statistically significant correlations arose (Tables 6.59 and 6.60). Bone and other materials were more likely to be placed horizontally, but the proportion is sevenfold for bone objects and twofold for other materials. The stability of unworked bone is variable at best and, if it has not been plastered or embedded, is likely to fall over. Although the elaboration of non-bone is far more frequent than the elaboration of bone objects, it is interesting to note that the proportion is much closer than had been in previous periods. Objects made of bone are more likely to be made of several types of materials than are non-bone objects (See 6.5.2.2), and objects of bone are more likely to be placed singly. Both kinds of materials are more likely to have been fragmented than left complete, although bone is far more likely to have been fragmented.

Pottery Neolithic	**Horiz**	**Vert**	**Elab**	**Not**	**One type**	**Many**	**One object**	**Many**	**Complete**	**Not**
Bone n=237	76	10	99	138	145	87	158	50	29	87
Not bone n=214	32	16	182	32	176	34	118	75	50	83
	P=0.0032		P<0.0001		P<0.0001		P=0.0017		P= 0.0406	

Table 6.59 Statistically significant correlations between deposits of bone and other material during the PN

Pottery Neolithic	Floor	Wall	Floor pit basin	Niche plat thresh wall	North west	East south	North south	East west
Bone n=237	24	63	64	82	205	5	96	122
Not bone n=214	36	35	83	45	185	12	119	78
	P=0.0032		P=0.0006		P=0.0165		P= 0.0011	

Table 6.60: Statistically significant correlations between deposits of bone and other material during the PN.

6.5.2.4 Visibility

Fewer than 40% of clearly visible items had been decorated in some way. Of these, 9 were plaster wall installations. The majority of clearly visible deposits were made of bone, 88% of which were head elements (Crania, jaw, tooth, antler, horn, or tusk). In contrast, the majority of invisible depositions were made of anything but bone; and, of the bone material, only 30% was comprised of head elements.

A great deal of contrast was exposed in comparing clearly visible objects with invisible objects (Tables 6.61 and 6.62). Over 60% of invisible items had been elaborated in some way, while only 6% had been decorated as well. I have included the correlation for elaboration along with the comparison of elaborated and decorated items to show how meaningful the second correlation is (Table 6.61). In general during the Pottery Neolithic, objects were more likely to have been elaborated: 208 objects were shaped; 32 were fashioned into figurines; 29 were coloured; 15 were sharpened; 10 were rounded and 8 were pierced. Of these 302 elaborated objects, less than 1/3 were also rendered with geometric lines, or fashioned to resemble a human, ruminant, or felid. The proportion of objects that had been further altered with decoration is much higher for those that would have been seen after deposition (48 objects had not been elaborated but had been broken).

Pottery Neolithic	Elaborated	Not	Elaborated	Decorated
Clearly visible n=42	24	18	24	18
Invisible n=255	154	101	154	15
	P=0.7353 (not significant)		P<0.0001	

Table 6.61: Correlations between elaboration and decoration for clearly visible and invisible deposits during the PN.

Other interesting correlations between clearly visible and invisible deposits during the PN involve the main material of an object. More animal bone than human bone was deposited both clearly and invisibly, yet the proportion differs between three and thirteen times more likely to be animal. One could conjecture that either a greater emphasis was put on hiding animal bone, or on displaying human bone. There was a much greater proportion of clearly visible animal crania, as well as head elements, to all animal bone. So, if an animal bone was to be made clearly visible, it was most likely to be a cranium or other head bone.

Pottery Neolithic	**Human bone**	**Anim bone**	**Plaster**	**Clay**	**Decor-ated**	**Not**	**All animal bone**	**Animal crania**
Clearly visible n=42	6	19	9	3	18	24	19 (17 head)	4
Invisible n=255	9	117	12	28	15	229	117 (33 head)	6
	P=0.0201		P=0.0079		P<0.0001		P= 0.0519 (not quite signif.)	

Table 6.62: Statistically significant correlations between clearly visible and invisible deposits during the PN.

6.5.2.5 Elaboration

Köşk höyük distinguishes itself from the other ceramic Neolithic sites by producing the only specially deposited ruminant figurine made of ceramic. The other four ruminant figurines come from Çatalhöyük; three are made of clay, and one of plaster. 24/32 total figurines come from Çatalhöyük, and the majority if these are anthropomorphic. The other specially deposited anthropomorphic figurines or caches of figurines come from Ulucak (3), Hacılar (1) or Köşk (4). The figurines from Hacılar come from a niche in a house. The cache contained 10 clay female figurines and one larger figurine with a wooden peg head. Removable heads are found in earlier periods as well, and will be discussed in chapter 7.

6.5.3 Macro-chronological trends across the PPNA, PPNB and PN

Already we see we see many of the trends beginning to establish themselves during the PPNA-PPNB transition sharply reverse themselves in the PN. What has been described as an expansion (for example, in the use of human crania) suddenly begins to contract. The shift towards a greater focus on depositions of nonorganic material changes back to a slight focus on depositions of bone (Table 6.63). The heavy focus on depositions within structures begins to taper off, only to return even more soundly. Interestingly, the heavy emphasis on

floor depositions during the PPNA slowly tapers off through the PPNB and PN (Table 6.64). At no single site during the PN did the number of floor depositions approach the number which had been placed on the wall.

	BONE		NOT BONE	
PPNA n=81	45	55%	36	45%
PPNB n=90	45	50%	45	50%
PN n=457	234	51%	223	49%

Table 6.63: Proportion of bone depositions.

	In structure			Floor		Wall	
PPNA	61	75%		33	41%	13	16%
PPNB	66	73%		18	20%	13	14%
PN	400	88%		67	15%	97	21%

Table 6.64: Proportion of depositions by location.

The types of bones chosen for special depositions during the PN differ drastically from previous periods (Table 6.65). A slow increase in the proportion of human bones used in special depositions could mean either a re-awakening of the power and vitality associated with human elements, or exactly the opposite: the casual use of human parts connoting a loss of respect. As relatively few depositions are known from the earlier periods compared with the PN, analyses were performed according to proportion, rather than number. For example, in the following table, animal jaws were considered as a proportion of all bone depositions, not all depositions.

BONE	Human artic.	Human crania	TOTAL Human	Anim crania	Anim disart.	Anim artic.	Antlr	Horn	Scap	Jaw	TOTAL BONE
PPNA	n=2 4%	n=8 18%	24% n=11	n=11 25%	n=3 7%	n=4 9%	n=4 9%	n=8 18%	n=2 4%	n=2 4%	n=45
PPNB	n=1 2%	n=12 27%	29% n=13	n=5 11%	n=6 13%	n=4 9%	n=2 4%	n=2 4%	n=5 11%	n=5 11%	n=45
PN	n=4 %2	n=16 %7	10% n=23	n=37 16%	n=46 20%	n=18 8%	n=12 5%	n=43 18%	n=22 9%	n=8 3%	n=234

Table 6.65: Comparison of special deposits of bone in all three time periods.

The increase in proportion of animal, rather than human, bone depositions between the PPNB and PN is due both to the greater number of types of elements used for ritual depositions during the PN, as well as the massive (proportional) decrease in the use of human crania. The re-establishment of horns as items worthy of special deposition is telling, especially considering the decrease in use between the PPNA and PPNB, when cattle are beginning to be herded. Disarticulated animal remains, scapulae and animal jaws all show a steady increase as depositional objects over time. The depositions of the PN point to a revaluation of the use of human elements. The increase in proportion of human elements between the PPNA and PPNB is startling when compared to the decrease during the PN. The small sample size of PPNB data and the glut of data from PN Çatalhöyük may have influenced the degree to which the decrease appears statistically significant, but the

decrease itself is noteworthy. It is clear that a revolution in the symbolic weight of bone became evident between the PPNB and PN.

The proportions of nonorganic material also shifted between the PPN and PN (Table 6.66). There was a steady decrease in the proportion of ground stone objects chosen for special deposition from the PPNA to the PPNB and PN. The significance of these objects likely decreased with the increasing reliance on domesticity. In other words, as these materials became more and more ubiquitous, their ritual value declined. The same may be said of the use of clay between the PPNA and PPNB. The appearance of ceramic or terracotta in structured depositions during the PPNB is unsurprising, as the transition from clay vessels to intentionally-fired ceramic must have been occurring at various locations during this time period. The slight increase in structured depositions of clay objects between the PPNB and PN may also be related to the sharp decrease in the deposition of ceramics. The late appearance of plaster objects is almost certainly due to the discoveries at Pınarbaşı and Tell Sabi Abyad, coupled with the plaster wall installations at Çatalhöyük.

Interestingly, most of the specially-deposited plaster forms came from the Konya Plain. It is not until much later in the Pottery Neolithic that plaster forms are specially-deposited in another geographic region. Interesting also is the resemblance of the plaster forms from Pınarbaşı and Tell Sabi Abyad, despite the distance between these sites. There is no evidence that the Pınarbaşı objects had fallen from above, as had the Tell Sabi Abyad ones. Rather, they appear to have been laid on a surface and then quickly filled over (Baird 2012: 202-203).

NOT BONE	Ceramic	Clay	Plaster	Unworked Stone	Ground stone	TOTAL Chipped	Chipped obsid	Chipped flint	TOTAL Not bone
PPNA	-	n=9 25%	-	n=1 3%	n=25 70%	0%	-	-	n=36
PPNB	n=6 13%	n=7 16%	-	n=1 2%	n=24 53%	11%	n=2 4%	n=3 7%	n=45
PN	n=11 5%	n=39 18%	n=43 19%	n=7 3%	n=43 19%	30%	n=58 26%	n=9 4%	n=223

Table 6.66 Proportions of special deposits of nonorganic material in the Pottery Neolithic

The proportion of composite objects nearly doubles between the PPNA and the PN, showing that the materiality of the deposited object increased in importance, along with the care taken in the creation of the object (Table 6.67). The proposition of depositions of single and multiple objects in one act of deposition remains approximately the same throughout time, yet the proportion of multiple objects included in mixed clusters increases during the PN. This is likely due to the changing attitudes towards clustered depositions (See discussion in 6.4.4.2).

	Single Object	Multiple	Single Type	Composite	Objects in mixed Clusters	Multiples in mixed clusters
PPNA	54 70%	23 30%	68 86%	11 14%	18 %22	6 5%
PPNB	53 64%	30 36 %	73 82%	16 18%	18 %20	4 4%
PN	281 69%	124 30%	332 74%	115 26%	239 %52	65 14%

Table 6.67: Proportions of numerical attributes between all 3 time periods.

Elaborated objects are in the minority of those chosen for special deposition during the PPNA, changing to near-equivalence during the PPNB (Table 6.68). During the PN elaborated objects make up two-thirds of all depositions, yet this is disproportionate in terms of materials. Looking at all elaborated items, 1/3 of elaborated items had been made from bone during the PN, while only 9% of elaborated items were made of bone during the PPNB. Comparing elaborated bone with all bone, 43% of bone had been elaborated during the PN, while only 9% of bone had been elaborated in the PPNB. While there is still a greater chance that an object made form materials other than bone will be elaborated during the PN, the proportion of elaborated bone is much greater than before. This is in stark contrast to the period contemporary with the PPNA, in which bone was never shaped, sharpened or pierced prior to deposition.

ELABORATED	Incised	Coloured	Sharpened	Pierced	Round	Shaped	Figur-ine	Sphere	TOTAL bone
PPNA n=35 43%	-	n=1 3%	-	-	-	n=33 94%	n=1 3%	-	n=0
PPNB n=46 51%	n=2 4%	n=3 7%	-	-	-	n=35 76%	n=4 9%	n=2 4%	n=4
PN n=306 67%	-	n=29 7%	n=15 5%	n=8 3%	n=10 3%	n=208 70%	n=32 10%	n=4 1%	n=101

Table 6.68: Proportions of elaborated objects in ritual depositions, separated by time period.

In general, the structured depositions from the PN appear to be more flamboyant than those from the preceding periods. Materials that previously had no part in ritual activities are suddenly imbued with symbolic significance, while other materials are no longer a major part of ritual depositions. The use of human elements was scaled down, or condemned to invisibility when included. The increased proportion of animal remains and a special focus on head elements show that the symbolic use of both animals and people in ritual activity underwent another shift.

6.6 Geographic trends between Central Anatolia and Upper Mesopotamia.

In this section I wish to consider only two geographic regions in hopes of shedding light on possible interactions involving ritual practice between them. The relationships

between Central Anatolia (Fig. 6.3) and Upper Meosoptamia have been much discussed in terms of technological attributes and interaction spheres (*e.g.* Asouti 2005; Voigt 2000; Bar-Yosef and Belfer-Cohen 1989) but with few exceptions (*e.g.* Cauvin 1994; Hodder and Meskell 2011) the focus has not been on the transmission and sharing of ritual practice. To examine potential overlaps in one type of ritual practice, I will first describe the breakdown of depositions in terms of chronology and location (Tables 6.69 and 6.70), compare the data, and analyze in order to make conclusions.

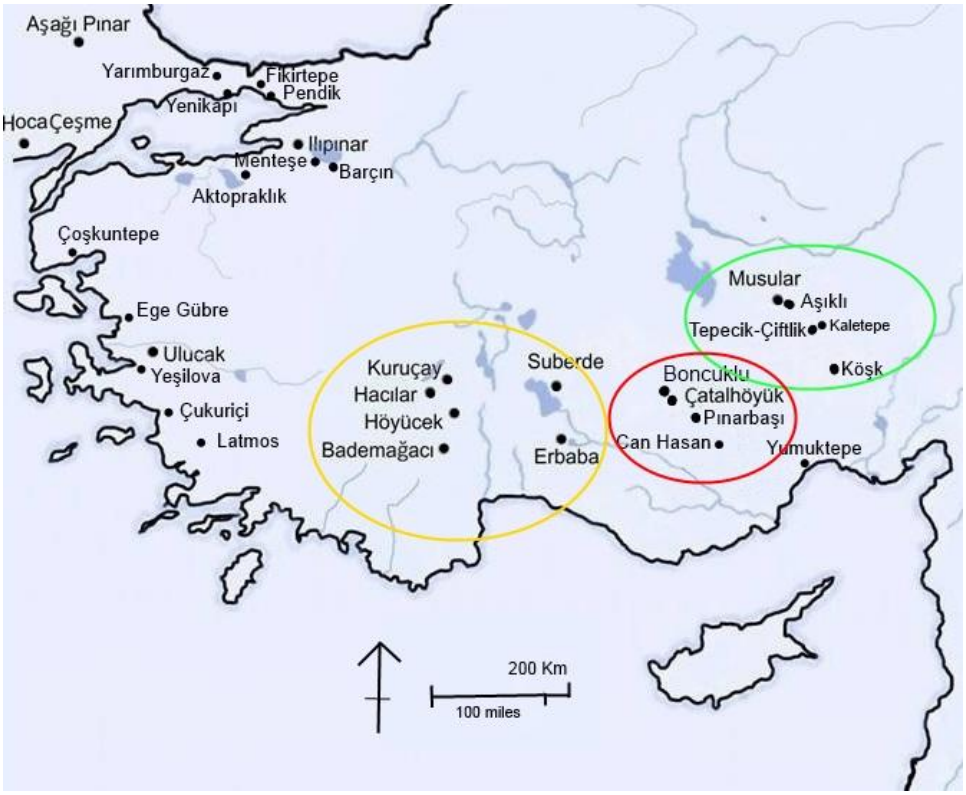

Figure 6.3: Main regions of Central Anatolia (Yellow-Lake District; Red-Konya Plain; Green-Cappadocia).

Cent Anat	PPNA	PPNB	PN
Cappadocia	-	2	17
Konya Plain	-	18	395
Lake District	-	7	7

Table 6.69: Central Anatolian depositions by period.

Upp Mesop	PPNA	PPNB	PN
Zagros	18	2	11
Batman	10	1	-
Urfa	21	19	-
Ergani Plain	3	6	-
Taurus	-	10	-
Euphrates	22	12	2

Table 6.70: Upper Mesopotamian depositions by period.

Ritual depositions from Upper Mesopotamia that date to the PPNA and earlier are usually in a structure (but not Batman); usually bone (not Urfa); and usually made from one type of material (Table 6.71). Crania are rare, but when they exist, they are more likely to be of animal origin in the Euphrates, Batman and Ergani regions; but more likely to be human in the Zagros. Invisible depositions are more common in the Ergani Plain and Euphrates regions.

U. M. PPNA all	**In struc**	**Bone**	**Elab**	**Q 1**	**1 type**	**Hum crania**	**Anim crania**	**Clearly**	**Invis**
Zagros	13/18	8/18	10/18	8/18	13/18	4/18	1/18	9/18	8/18
Batmn	1/10	10/10	0/10	8/10	8/10	0/10	3/10	3/10	1/10
Urfa	21/21	0/21	21/21	19/21	21/21	0/21	0/21	6/21	3/21
Euph	21/22	19/22	3/22	10/22	18/22	2/22	5/22	2/22	15/22
Ergani	3/3	2/3	1/3	3/3	3/3	0/3	1/3	0/3	3/3

Table 6.71: All ritual depositions in Upper Mesopotamia during the PPNA and earlier. The ratios describe the number of (e.g.) ritual depositions from the Zagros found in a structure, over the total number of depositions from that region.

Looking at the same data set, ritual depositions from the PPNA and earlier from Upper Mesopotamia BUT having removed the pillars, we see very different trends (Table 6.72). 6 deposits were removed from the Zagros region and 18 from Urfa (Figure 6.4), and yet the breakdown appears very different. Without the inclusions of pillars, the earlier period in Upper Mesopotamia has a higher proportion of bone, as well as more single quantity depositions. Excluding pillars, the Zagros region more resembles the Batman region. In this dataset, the Urfa and Euphrates regions are the outliers, while the Ergani Plain resembles either Urfa or the Euphrates, depending on which variable is highlighted.

U. M. PPNA w/o	**In struc**	**Bone**	**Elab**	**Q 1**	**1 type**	**Hum crania**	**Anim crania**	**clearly**	**Invis**
Zagros	7/12	8/12	4/12	8/12	9/12	4/12	1/12	8/12	3/12
Batmn	1/10	10/10	0/10	8/10	8/10	0/10	3/10	3/10	1/10
Urfa	3/3	0/3	3/3	3/3	3/3	0/3	0/3	0/3	2/3
Euph	21/22	19/22	3/22	10/22	18/22	2/22	5/22	2/22	15/22
Ergani	3/3	2/3	1/3	3/3	3/3	0/3	1/3	0/3	3/3

Table 6.72: Ritual depositions in Upper Mesopotamia during the PPNA and earlier, excluding pillars.

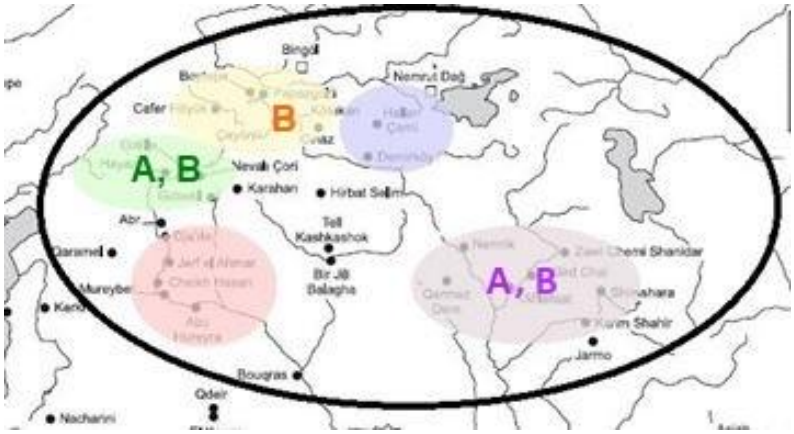

Figure 6.4 Ritual deposition of pillars in Upper Mesopotamia by region.
Pink-Euphrates; Green-Urfa; Yellow-Ergani; Blue-Batman and Purple-Zagros.

As there are no known ritual depositions from Central Anatolian sites that date contemporary with the PPNA or earlier, no possible comparisons can be made with the contemporary sites in Upper Mesopotamia.

The period contemporary with the PPNB of Central Anatolia has ritual depositions that are usually in structures, made of bone, made from one type of material, most often invisible, and verly rarely made from crania (Table 6.73). The Lake District differs from the other two sub-regions, as depositions are most often elaborated. Cappadocia and the Lake District are more likely to have depositions of multiple objects, while Konya Plain depositions tend to be single. There are some clusters of objects placed as single depositions in Konya, though the majority are invisible. There are no pillars at all in Central Anatolia. We see some clusters of objects placed as single depositions in Konya, though the majority are invisible. The Lake District differs more greatly than either of the other two.

PPNB C.A.	**In a struct**	**Bone**	**Elab**	**One piece**	**One type**	**Human crania**	**Animal crania**	**Invisible**	**Clearly visible**
Konya	8/12	16/18	1/18	11/18	9/17	1/18	1/18	10/17	2/17
Capp	2/2	2/2	1/2	0/2	2/2	0/2	0/2	?	?
Lake	6/6	6/7	6/7	2/7	6/7	0/7	0/7	3/6	1/6

Table 6.73 Ritual depositions contemporary with the PPNB from Central Anatolia

Upper Mesopotamian depositions contemporary with the PPNB tend to be in a structure, and only one single piece made from one type of material (Table 6.74). Far fewer known excavations in the Zagros and Batman Regions date to the PPNB. Urfa had many pillars. There is a new sub-region with evidence for the PPNB, the Taurus, which includes Cafer höyük. As it lies on the Euphrates, it would be expected to have much in common with the Urfa and Euphrates sites, but this does not obtain. The similarities between the Ergani site and the Batman and Zagros sites are expected, as all 3 lie along the Tigris.

U. M. with pill	**In a struct**	**Bone**	**Elab**	**One piece**	**One type**	**Human crania**	**Animal crania**	**Invisible**	**Clearly visible**
Zagros	2/2	1/2	1/2	1/2	1/2	0/2	1/2	0/2	2/2
Batman	?	1/1	0/1	1/1	1/1	0/1	0/1	1/1	0/1
Urfa	19/19	4/19	14/19	9/19	18/19	4/19	0/19	5/19	1/19
Euph	10/12	11/12	3/12	11/12	12/12	7/12	1/12	7/10	3/10
Ergani	5/7	3/7	4/7	4/7	7/7	0/7	2/7	2/5	3/5
Taurus	5/11	3/11	9/11	11/11	10/11	0/11	0/11	6/7	1/7

Table 6.74: All ritual depositions from Upper Mesopotamia, contemporary with the PPNB.

When pillars have been removed from the dataset, ritual depositions from Urfa most resemble those from the Taurus region, with the exception of the Courtyard depositions from Cafer höyük (Table 6.75). The Batman and Ergani regions share many more similarities. 8 depositions were removed from Urfa, 1 from the Zagros and 1 from the Ergani region (Figure 6.4). With the elimination of pillars from the dataset, we see that Ergani did in fact have more in common with another region along the Euphrates; Urfa, and that the similarities were in the pillars. The PPNB pillar from the Zagros region was made from clay, while those from Çayönü and Nevalı Çori were stone.

U.M. PPNB w/o pillrs	In a struct	Bone	Elab	One piece	One type	Human crania	Animal crania	Invisible	Clearly visible
Zagros	1/1	1/1	0/1	1/1	1/1	0/1	1/1	0/1	1/1
Batman	?	1/1	0/1	1/1	1/1	0/1	0/1	1/1	0/1
Urfa	11/11	3/11	7/11	8/11	11/11	3/11	0/11	4/11	0/11
Euphrts	10/12	11/12	3/12	11/12	12/12	7/12	1/12	7/10	3/10
Ergani	5/6	4/6	2/6	5/6	6/6	0/6	2/6	1/6	2/6
Taurus	5/11	3/11	9/11	11/11	10/11	0/11	0/11	6/7	1/7

Table 6.75: Ritual depositions from Upper Mesopotamia contemporary with the PPNB, excluding pillars.

Statistically significant shifts in ritual practice in Upper Mesopotamian ritual deposits between the PPNA and PPNB can be seen in Table 6.60. This dataset includes pillars, so the only truly significant result is the difference between single and composite materiality, with composite materiality more heavily weighted during the earlier period. The shift away from composite materiality over time may also be reflected in the (nearly significant) shift from animal bone to human bone, as human bone was very rarely used in composite deposits.

Upper Mesopotamia ALL	One type of material	Composite	Human Bone	Animal bone	Human crania	Animal crania
PPNA n=52	61	12	9	30	6	10
PPNB n=74	50	2	11	12	11	4
	p= 0.0013		p=0.0541 (nearly)		p=0.0732 (nearly)	

Table 6.76 Statistically significant shifts in Upper Mesopotamian ritual deposits between the PPNA and PPNB

Removing pillars from the dataset, a number of statistically significant correlations arise (Table 6.77). There are shifts from a few composite materials to nearly none; from a majority of bone depositions to a greater proportion of other materials; from very few elaborated deposits to many elaborated deposits; a shift from a focus on animal head parts to a focus on human head parts; and a shift from very few clearly visible deposits to a majority of clearly visible deposits. The increase in significant statistics corresponding to the lack of pillars shows us that the use of pillars in Upper Mesopotamia largely remained the same, and that other sorts of ritual activity were more dynamic.

Upper Mesopotama (no pillars)	**Bone**	**Not**	**Elabor'd**	**Not elabor**	**One type**	**Many types of materia**	**Human head parts**	**Animal head parts**	**Clearly visible**	**Invisible, plastered partially visible**
PPNA n=48	39	8	6	39	38	9	7	21	2	9
PPNB n=41	23	18	20	21	40	1	11	8	9	4
	p= 0.0094		**p=0.0004**		p=0.0174		p=0.0336		p=0.0650 (nearly)	

Table 6.77: Statistically significant shifts in Upper Mesopotamian ritual deposits between the PPNA and PPNB, without pillars.

Perhaps pertinent to these shifts in practices are influences from Central Anatolian sites. Although we cannot juxtapose ritual practice during the period contemporary with the PPNA, through careful consideration of the differences in PPNB practice, we may see some informative trends (Table 6.78). With pillars included in the dataset, there are many departures from ritual depositions in Central Anatolia and Upper Mesopotamia. In fact, there is even greater variation between the PPNB of Central Anatolia and Upper Mesopotamia than between the PPNA and PPNB within Upper Mesopotamia alone. The majority of depositions in Central Anatolia are bone, rather than other material; and the majority of bone deposits are of animal origin. In contrast, there is no clear majority in Upper Mesopotamia for these attributes; deposits are equally likely to be of bone or of other material, and those of bone are equally likely to be human or animal. Other interesting contrasts are seen in elaboration and materiality. Far fewer ritual deposits in Central Anatolia had been elaborated prior to deposition than those in Upper Mesopotamia. Central Anatolian ritual deposits are most likely to be made of a single type of material, while nearly all Upper Mesopotamian ones are comprised of a single material. This is the clearest and most statistically significant departure in practice. This shows that both composite materiality was important in Central Anatolia, and also that the clusters that we see in the Konya Plain do not appear in Upper Mesopotamia.

PPNB	Bone	Not	Elabor'd	Not elabor	One type	Many types materia	Human bone (all)	Animal bone (all)	Broken	Complete
Central Anatolia n=26	18	8	7	19	17	9	1	17	2	6
Upper Mesopotamia n=74	23	29	31	21	50	2	11	12	18	5
	p=0.0541 (nearly)		p=0.0084		**p<0.0001**		p=0.0047		p=0.0120*	

Table 6.78 Statistically significant shifts between the PPNB of Central Anatolia and Upper Mesopotamia
* very small percentage used, stat likely flawed

Once pillars had been removed from the dataset, there were very few statistically significant differences between ritual depostions contemporary with the PPNB in Central Anatolia and Upper Mesopotamia. Therefore, the continuation of the pillar as a ritual deposit in Upper Mesopotamia is the main contributing factor to differences between Upper Mesopotamian and Central Anatolian ritual activity. Due to the wide differences in Upper Mesopotamian ritual practice once pillars had been excluded, we can conclude that ritual practice associated with depositions underwent dramatic shifts between the PPNA and PPNB in Upper Mesopotamia.

Ritual deposits contemporary with the Pottery Neolithic of Central Anatolia are mostly in a structure, about half bone, the majority had been elaborated (but not in the Lake District), usually a single piece, and mostly of composite materiality (Table 6.79). There are far more crania that were ritually deposited than in previous periods. Depositions from Cappadocia and the Lake District tend to be clearly visible, and more weighted towards human crania, while Konya depositions tend to be invisible and weighted toward animal crania. The central Anatolian PN is dominated by the extremely well-excavated site of Çatalhöyük. Nonetheless, there are some depositions from 7th millennium Pınarbaşı and Can Hassan III.

PN	In a Struc	Bone	Elab'd	1 piece	1 type	Hum crani	Anim crania	invis	clearly
Cappadocia	14/17	9/17	13/17	10/15	8/17	7/17	1/17	3/17	5/17
Konya Plain	347/395	209/395	266/395	240/395	282/395	5/395	34/395	228/395	31/395
Lake Dist	3/7	5/7	2/7	5/7	6/7	3/7	0/7	1/6	2/6

Table 6.79: Ritual deposits from PN Central Anatolia, separated by region.

Ritual deposits contemporary with the PN from Upper Mesopotamia are far fewer but some tentative correlations can be made (Table 6.80). There is information from only two sites that reliably have structured depositions: Ginnig in the Zagros, and Mezraa-Teleilat in the Euphrates. Ritual depositions contemporary with the Pottery Neolithic of Upper Mesopotamia are not composite, but made from one type of material, and cranial elements are rare. Deposits also tend to be in structures.

	In str	**Bone**	**Elab**	**1 piece**	**1 type**	**Hum cran**	**Anim cran**	**invis**	**Clearly**
Zagros	11/11	5/11	5/11	7/11	11/11	0/11	1/11	1/5	0/5
Euph-rates	1/2	2/2	0/2	0/2	2/2	0/2	0/2	?	?

Table 6.80: Ritual Deposits from PN Upper Mesopotamia, separated by region.

Several interesting correlations arose whilst comparing the Pottery Neolithic deposits from Central Anatolia and Upper Mesopotamia. Central Anatolia is very wall-oriented, while Upper Mesopotamia remains focused on the floor (Table 6.81). Ritual deposits from Central Anatolia are twice as likely to be made from only one type of material, while ALL deposits from Upper Mesopotamia are made from one type. Central Anatolian deposits are far more likely to have been elaborated prior to deposition, and no ritual deposit from Upper Mesopotamia had been decorated. The composite materiality reflects the continuation of the clustered deposits of objects. Additionally, a far greater proportion of Central Antolian deposits have been decorated in some way, underlining the regional importance of human interaction with ritually deposited items. This human-material interaction took many forms; grouping, combining, incising, piercing, grinding, shaping and colouring. It is interesting that differences in fragmentation cannot be determined from the dataset.

PN	**Floor**	**Wall**	**One type**	**Composite**	**Elab'd**	**Not elab**	**Decor**	**Not**
CA 419	48	93	296	113	281	136	90	319
UM 13	9	1	13	0	5	8	0	13
	p=0.0001		p=0.0241		p=0.0380		p= 0.0798 (nearly)	

Table 6.81: Statistically significant correlations between PN deposits from Central Anatolia and Upper Mesopotamia.

As the relationship between human and animal bone was statistically significant between Central Anatolia and Upper Mesopotamia whether pillars were included, I decided to take a closer look at these associations. Breakdowns of the number of human and animal bone deposits, compared with total bone deposits are seen in Table 6.82(a-e).

Central Anatolia

PPNB (a)	Human	Animal
Cappadocia	-	2/2
Konya	1/16	15/16
Lake Dist	-	1/1

PN (b)	Human	Animal
Cappadocia	7/9	2/9
Konya	8/200	192/200
Lake Dist	3 /4	1/4

Upper Mesopotamia

PPNA (c)	Human	Animal
Zagros	5/8	3/8
Batman	-	10/10
Urfa	-	-
Euphrates	4/19	15/19
Ergani	-	2/2

PPNB (d)	Human	Animal
Zagros	-	1/1
Batman	-	1/1
Urfa	4/4	-
Euphrates	7/11	4/11
Ergani	-	2/2
Taurus	-	3/3

PN (e)	Human	Animal
Zagros	-	5/5
Euphrates	-	2/2

Table 6.82 a-e. Ritual deposition of human and animal bone from Central Anatolia (a, b) and Upper Mesopotamia (c,d,e)

During the PPNA, human crania were equally likely to be found within or without a structure, yet during the PPNB, crania were over four times as likely to be found in a structure, and all instances were either inside or next to a domestic structure. This may demonstrate a shift in many disparate practices to a more codified, conservative practice, or it may simply reflect the paucity of Central Anatolian PPNA data.

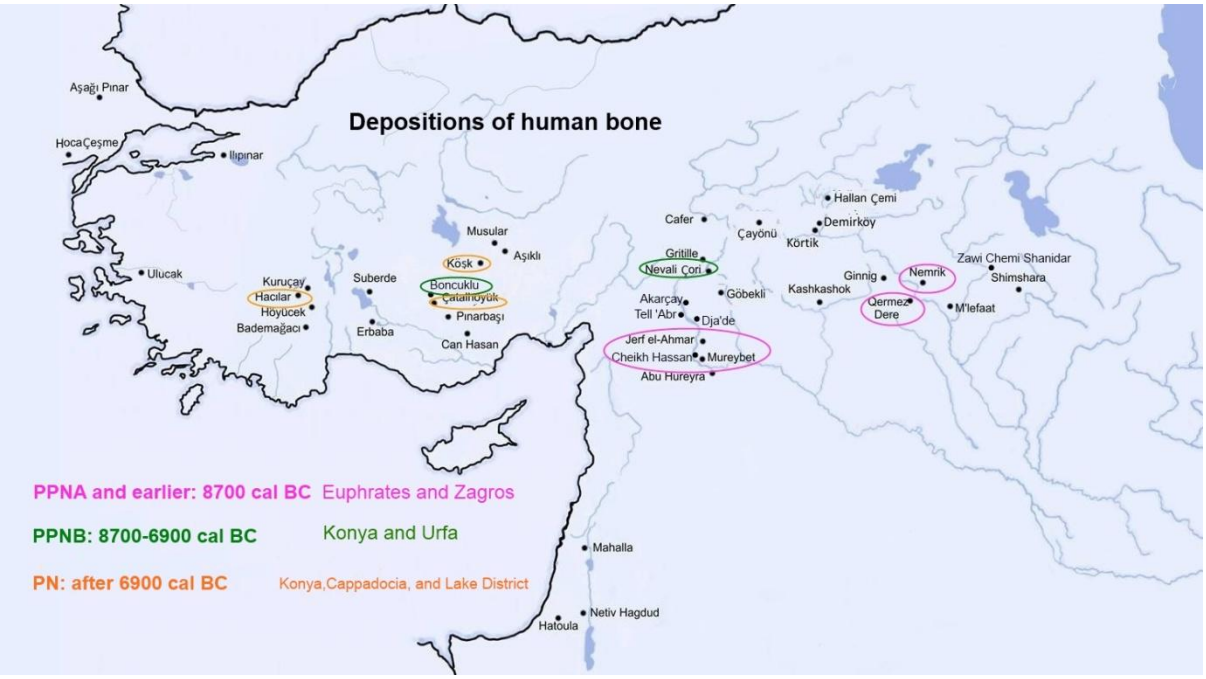

Figure 6.5: Depositions of Human Bone in Central Anatolia and Upper Mesopotamia.

There appears to be a clear trend from Figure 6.5 of westward movement of human bone deposition. It is important to recall, however, that there are no excavated sites in Central Anatolia with ritual depositions contemporary with the PPNA or earlier, and very few in Upper Mesopotamia contemporary with the PN. Location alone cannot inform transmission of cultural practice, however, there are striking similarities in the context and contents of ritual depositions of human bone across regions and periods. Deposits of human crania at the PPNB site of Nevalı Çori closely resemble deposits from earlier sites in the Zagros region. The abandonment deposit of six human crania in the lowest fill of domestic structure RAA at Qermez Dere is almost exactly paralleled by the later foundation deposit from Nevalı Çori: 5 skulls dug into a pit below the foundation platform for a level 1 house. A later level house at Nevalı Çori had a possible abandonment event: 3 pits, with a pair of skulls in each. This resembles a skull burial in a hut infill from Nemrik 9, in which a pit was dug next to the walls of an abandoned structure.

In addition to the similarities between the skull deposits in the Zagros region, it is also notable that the skull deposits from Nevalı Çori do not resemble the skull deposits from the closer Euphrates sites. For example, at Jerf el-Ahmar there are 3 skulls in an oven; a pair of skulls at the bottom of a pit for the roof support of a public building; and a skull in the corner of a house. While there are groups of skulls at both Jerf el-Ahmar and at Nevalı Çori, those from Nevalı Çori are all in pits in domestic structures, and the association of human skulls and burning events are not present. Another point of departure that, at first glance, appears to be a resemblance is the presence of skulls in foundation pits. At Nevalı Çori, the foundation deposit is dug under a platform for a general domestic structure, while at Jerf el-Ahmar, the foundation deposit is designed for a specific structural element, and for a public building. The association of burning with skulls is seen at both PPNA Jerf el-Ahmar, where 3

skulls were placed in an oven, and at PPNB Boncuklu, where a female skull was placed upside-down in a pit on top of a layer of ash. The deposition of single skulls, as at Boncuklu, is also seen at earlier sites in the Euphrates region: at Mureybet and again at Sheikh Hassan (Rollefson *et al.* 1998). Looking back to Figure 6.5, instead of seeing a set of ritual practices involving human crania following each of the Tigris and Euphrates river valleys, it seems the orientation of similarities followed more closely along lines of latitude. While it seems clear that at least some of the tradition(s) that came to Boncuklu later branched out within Central Anatolia, there is no indication where the population at Nevalı Çori may have migrated or shared ideas. Alternatively, the populations in the Urfa Plain may have died out, or substantially changed their ritual practices.

In conclusion, there were several shifts in depositional activity that can be attributed to the interplay of different sets of ritual practices both from and towards Upper Mesopotamia towards and from Central Anatolia. The changes between types of bone deposit, and especially the treatment of human bone, shows that the interactions between these areas were active and complicated.

6.7 Conclusions

In this section, I will meld the chronological and geographical trends highlighted during chapter 6, and approach the results using different theoretical foci. The focus of each of the following sections will draw upon the larger issues discussed in chapter 4. Section 6.7.1 will consider the implications of ritual practice on households, neighbourhoods and settlement organization. Section 6.7.2 will build on current approaches to materiality and their relation to understanding the symbolism of ritual acts, and how this new interpretation contributes to a better understanding of ritual. Section 6.7.3 will focus on the effects of ritual practice on the changing relationships between humans and other animals. These analyses will set up a framework for discussion of the case study sites, as well as the evaluation of this new methodology in Chapter 7.

6.7.1 Households

This section investigates how ritual informed settlement organization, household design, and the creation of environments out of landscapes. The study of architecture and village layout has long been conducive to investigations of social and economic practices, as "...architecture ultimately reflects and denotes social organization and the manner in which it is imposed upon space" (Goring-Morris and Belfer-Cohen 2003: 76). Cutting (2006: 241) reminds us, among other of her 9 points for the interpretation of spatial usage, that unbuilt environments are an important component of household and village organization, and that to focus merely upon structures is misleading. Archaeologists researching Natufian settlements tend to describe building practice and even degrees of sedentism as a "social

structure" rather than as a technological innovation (Horwitz *et al.* 1999: 64). Boyd (2006: 171) combines these approaches in his description of architecture as a "social technology." Yet none of these frameworks allow for investigation into how ritual practice might have affected the construction of space beyond the effects of more mundane social practices. Brück (1999b) lays the groundwork for such an approach in her paper on the lifecycles of Middle Bronze Age British settlements. She claims that the lifecycles of settlements and their inhabitants symbolically represented each other, in addition to reflecting the social and material realities of existence. Her inclusion of the symbolic content of spatial and structural lifecycles allowed for discussion of ritual deposition (Brück 1999b: 152-155). The first thorough, although implicit, approach to the ways in which ritual practice could have shaped the built environment was provided by Watkins' discussion of new forms of architecture as "powerful new forms of symbolic representation in material form" (Watkins 2004: 12). If architectural and spatial constructs could represent the ways in which people constructed their reality, then there could be recourse to physical evidence concerning symbolic intent. The built environment becomes a scaffold for new kinds of "external symbolic storage" (refer to discussion in 4.5), many of which were likely bound up in ritual practice.

Much of the variability we see in household design through the Neolithic may be attributable to the changing needs for ritual space. Ritual deposits in structures were subjected to different levels of visibility than those outside of structures (6.3.1). One of the most basic features of a structure is a wall, and the immediate function of a wall is to delineate space. This space can restrict access or the movement of bodies, or it can create a path. Visibility itself is a kind of access. Internal deposits were most likely to be of intermediate visibility, as one would already have to be in the house to approach the deposit. The wall then, serves not only to delineate space, but provides another layer of visibility to be breached, a barrier between the ritual deposit and all other people. Between the PPNA and PPNB, a greater number of houses bore invisibly placed ritual deposits. This may reflect a greater need for secrecy even within a house.

Other changes in household design between the PPNA and PPNB included a shift from the round-house shape to a more rectangular shape, and a greater degree of internal compartmentalization. Could these, too, have been influenced by the changing demands of ritual practice? The compartmentalization of internal space follows logically from the initial privatization of space. During the PPNA, we see some structures, usually considered to be communally used, divided into "storage" areas or "benches." The public building from Jerf el-Ahmar is multiply subdivided, but at other earlier sites, such as Hallan Çemi, the large round buildings show no sign of internal division and would have accommodated many people. During the PPNB, we see the compartmentalization of domestic spaces as well as communal structures. Areas are built up with low walls; into grill shapes; as bins, basins, or niches; or simply divided into a cleaner raised area and dirty lower area. The demands of

privacy -or secrecy- in growing communities can be reflected in the degree of internal compartmentalization. An increase in the number and types of rituals performed is to be expected with an increase in population. It is likely that several types of rituals were performed indoors, both private and public. It also appears that there is a shift towards private ritual practice indoors during the PPNB. This may imply a heterogeneous population; different groups with different rituals, who guarded the secrecy and visibility of objects used in their rites. A modern example of this are the division of many of the Plains Amerindian tribes into clans, around which ritual practice is organized (Ubelaker and Wedel 1975). The clans co-exist as a tribe, but each has a "sacred bundle," among other symbols, that are kept secret from the other clans. Instead of a single family or small kin group, the variations in Neolithic ritual practice may point to the presence of larger groups with more and varied ritual practices.

How else might ritual practice have affected household design? The action of embedding objects in walls, floors, hearths or benches presupposes that these features exist. The change in the general shape of houses from circular to rectangular allowed for more compartmentalization through the further delineation of walls. Additionally, instead of a single curving wall making up the boundary of a structure, each differentiated wall could be associated with further meaning. The transition to rectilinear-plan houses may have been the necessary second step in the creation of external symbolic storage for ritual purposes. During the PPNA and earlier, objects embedded in walls and benches were at least partially visible. A good example of this is the compact cluster of equid shoulderbone, bovid pelvis and bucranium positioned so the horns were sticking out of the walls of a round house from Level II Mureybet. As building plans diversified into multi-cellular rectilinear structures during Level III at Mureybet, all embedded deposits (including a carnivore jaw and horn cores) were entirely invisible. This could demonstrate that specific symbols or meanings were already codified in their association with particular walls, without requiring that the codification be universal. For example, one sub-group may include a trophy from a brilliant kill in the hearth-wall, while another group embeds a piece of their totem animal in the first wall that is constructed as part of a new house. While these rituals are not identical, there is a set of meanings associated with each act that is understood by the practicing group. The invisibility of these practices points to a tacit acceptance of knowledge that no longer needs to be made explicit through the visibility of the embedded deposits.

Ritual practice also affected settlement patterning and village layout. There was a shift towards the eastern and western peripheries as a favoured location for external ritual deposits during the PPNB (6.4.4.3), coinciding with the segregation of communal and domestic structures along the same axis. There was also a clearer distinction between public spaces and communal ones at many sites during the PPNB. The separation of kinds of space allowed for greater meanings to be overlaid upon the external areas between these spaces. Movement between spaces may be codified, as in a processional activity, or not, as a caretaker's daily walk. The argument for processions is strengthened when there are clear

paths between communal or ritual spaces and domestic ones (as at 'Ain Ghazal or Çayönü) in addition to a distinct separation of types of spaces. Travel between sacred and mundane spaces does not necessitate formal, processional activity, but the walk itself can be seen as a kind of transition, creating a liminal space within the settlement.

Another way in which ritual practice changed the nature of public spaces is through the privatization of certain types of activity. One striking shift in practice between the PPNA and PPNB is in the use of external spaces. Earlier ritual depositions are more oriented towards community activities in central open areas, while later external depositions seemed to focus around individual houses (6.4.4.1). Another shift is seen in the elaboration of objects that were externally deposited (6.4.4.1). The increase in elaboration and types of elaborated objects indicates a more personal involvement in ritual activity taking place outside of houses and communal buildings. It is interesting to see this individual relationship with external spaces blossom right before the collapse of space into agglutinated communities in the PN, during which most, if not all, external ritual activity took place in the middens between houses.

With the separation of some kinds of spaces used for ritual practice from wholly domestic spaces, the landscape between them becomes a kind of liminal transition area. The practices associated with ritual may have been a catalyst for building pathways into the landscape, not only towards built structures, but towards places of beauty and power: high places, lakes, large trees. Additionally, the location of ritual practice in the landscape would have served to imbue those places with meaning, and the associations formed by the human participants created environment from landscape. Environment, house design and settlement organization were all used as substrates for external symbolic storage.

6.7.2 Materiality and symbolism

The materiality of depositions goes beyond "human-thing entanglement" (Hodder 2011) to involve "...the ensemble of phenomenal and material properties of 'things', ensemble conceived as a form of potential or 'possibility', recognized though its physical and/or conceptual engagement" (Coupaye and Douny 2009: 24). This section aims to discuss some of the results of database analysis in terms of the social interactions with certain properties of materials, such as color, fragmentation and elaboration. One basic goal of this type of analysis was to understand how the materials used in certain rituals changed in accordance with geographical or chronological considerations. Further analysis here may reveal how social interactions determine, and are determined by, expressions of materiality. Finally, what emerges from these engagements or entanglements is the material property referred to as symbolic content.

A clear example of the importance of materiality is the types of objects chosen for deposition in pits; a different material is taken out from what is put back in (6.3.2). Depositions in post–hole retrieval pits are made of stone or bone. This contrast shows that the material from which a deposit is made can be appreciated not only for its own properties, but its relations to other properties, and even the absence of properties. Stone and bone are chosen because they are not wood or earth. There are two kinds of properties important in a discussion of materiality; actual properties and potential properties. The interactions people can have with these properties differ, and are mediated by probability.

One obvious argument for the division of material properties into actual and potential comes from the specially-deposited anthropomorphic representations. The overwhelming majority of humanoid depictions were made from non-organic material (6.3.5). Only rarely were bone objects decorated to appear as human and then specially deposited; and these later bone objects are nearly all instances of re-fleshing or disguising within plaster. Bone has an actuality as being human, and does not have the potential to be human. The possibility (or lack thereof) is recognized through conceptual engagement with the material.

Elaboration is a kind of liminal materiality. A bone has potential to be shaped as a tool, and while it is in the process of being shaped, it has neither actual nor potential properties of materiality *as a tool* in relation to the human who is elaborating it. The object itself is in a liminal state. Deliberate fragmentation and upending can also be seen as kinds of elaboration (6.3.7). Unfortunately, some types of elaboration do not exist as material records. Examples include passing a bone through smoke; washing a stone; raising a tool towards each of the cardinal directions; chanting over a clay object; passing a bundle from hand to hand and so forth.

Social interactions with the actual and possible properties of objects influence expressions of materiality through the decisions made about objects. A better understanding of ritual can then inform approaches to materiality and symbolism by evaluating the actuality and potential of the material properties of an object. Contrast is important as a negative actuality. This type of analysis allows for symbolic content as a possible property of an object, as traces of symbolic content are decipherable in material objects, as those material objects provided the possibility which permitted the actualization of the symbolic content. It is only the possibility, not the actuality of the symbolic content that can be accessed retrospectively. Only through rigourous contextual investigation can symbols be extracted from materiality. For example, a red stone is actually a stone, but possibly an ancestor, a tool or a key. Its use, manipulation and depositions all provide clues as to the probability which informs the symbolic content of its colour.

By looking at the material traces of symbolic interactions that were actualized through the intentional manipulation of material objects, archaeologists have recourse to interpreting the empirically underdetermined.

6.7.3 Relationships with animals

Many archaeologists have considered the use of animals in prehistoric ritual (*e.g.* Russell 2005; Horwitz and Goring Morris 2005; Horwitz 1999). Rather than ask what role animals played in ritual or the role ritual might have played in the appearance and manipulation of human relationships with animals, this section will focus on how the symbolic content of the materiality of an animal (6.7.2) affected the choices that were made concerning the use, edibility and display of faunal elements, and whether the changing relationships with animals transformed them into a substrate for further external symbolic storage (6.7.1). These questions will be pursued using the changing uses for *Vulpes vulpes* during the early Neolithic of the Near East.

In this section, I will briefly compare the evidence for *Vulpes* consumption and the pictorial representation of the fox in the Near Eastern Neolithic in hopes of showing a relationship between ritual deployment and edibility (see Leach 1964: 36 *ff* for a discussion of distance from the ego).

There is clear evidence for the consumption of foxes at Qermez Dere, a PPNA site in the Jebel Sinjar. From this site, 40% of all identified animal remains were *Vulpes*. The bones showed evidence of both butchery and skinning marks, with absolutely no bias towards feet and head bones, as would be expected if the primary importance of the animals was to take their pelts (Dobney *et al.* 1999). Instead, all elements are equally represented, and there are butchery marks on the meat-bearing bones, which one would not expect if the only purpose of the fox was fur. Many of the fox bones showed evidence for burning, and while this is not conclusive in and of itself, with the other faunal evidence, it makes a stronger case for eating foxes at Qermez Dere. Finally, there was a definite bias towards larger foxes, those with the widest pelts and most meat (Dobney *et al.* 1999).

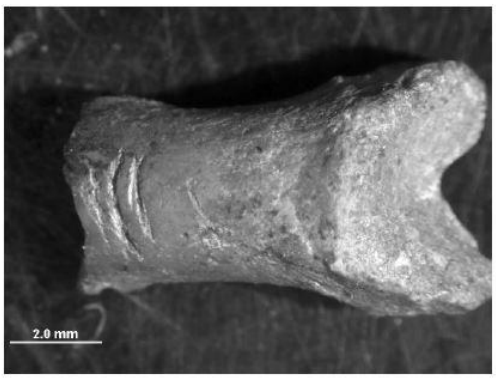

Figure 6.7: Fox 1st phalanx with cutmarks from Natufian el-Wad. After Yeshurun *et al.* 2009 Fig 7.

Similar evidence for the consumption of foxes: charred fox bones with butchery marks as well as high NISP representation- also appears at 'Ain Ghazal, Jericho, Jarmo, Çayönü, Çatalhöyük, Dagabiyah, Pınarbaşı A, Yiftahel, Abu Hureyra, Netiv Hagdud, and

Motza (Martin 1999; Khalaily *et al.* 2007; Vigne 2008; Atalay and Hastorf 2006; Yeshurun *et al.* 2009; Köhler-Rollefson *et al.* 1988; Dobney *et al.* 1999; Hongo and Meadow 1998) (Fig. 6.7). The trend towards eating smaller species (including fox) begins at the end of the Paleolithic and continues through the Early Neolithic (Horwitz *et al.* 2010; Tchernov 1994), and is seen at Levantine, Upper Mesopotamian and Central Anatolian sites (Fig. 6.8).

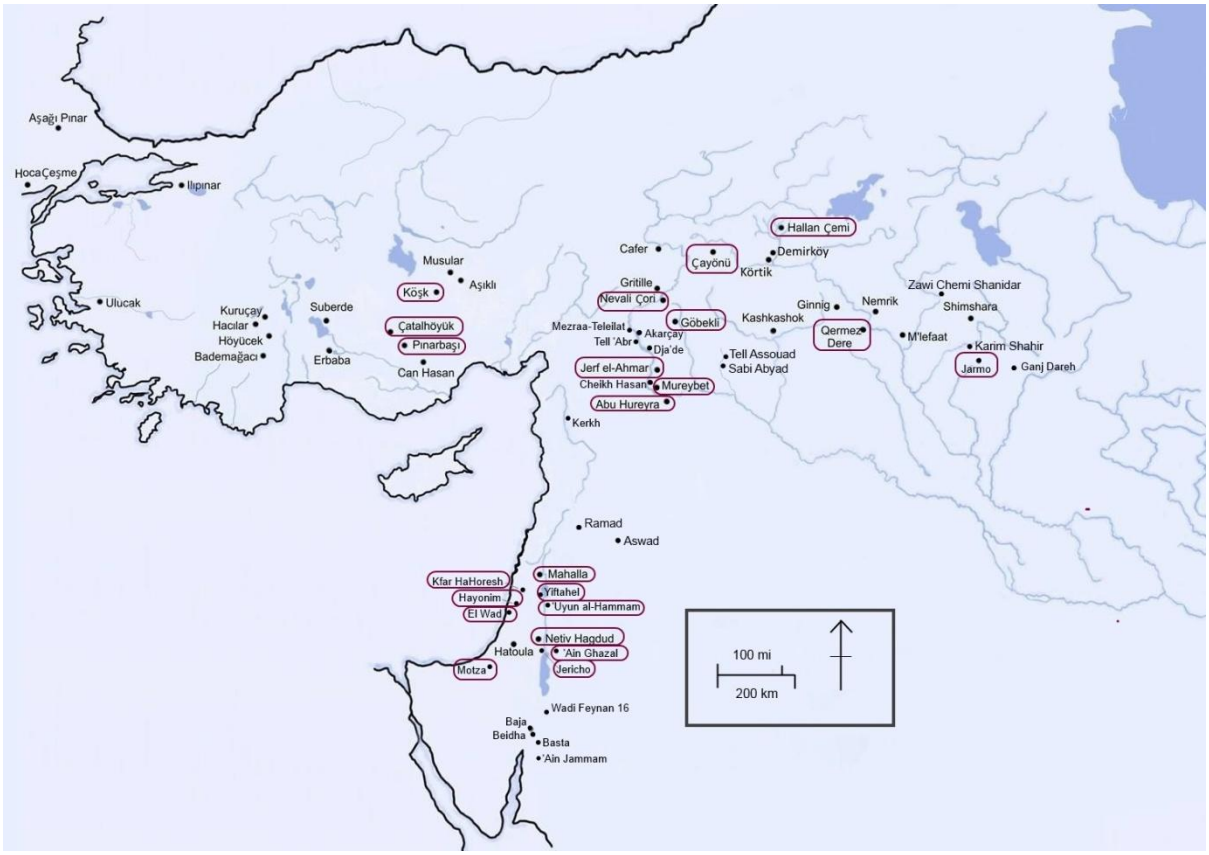

Figure 6.8 Neolithic sites with evidence for fox consumption or depiction

The uses of animals as symbols at the end of the Paleolithic and during the Early Neolithic are especially intruiging in light of the transition to herding and agriculture. Images of foxes are carved into stone at Jerf el-Ahmar, Göbekli tepe, and possibly Hallan Çemi. Figurines are fashioned into the shape of canids, some more clearly representing the fox than others (Rollefson 2008).

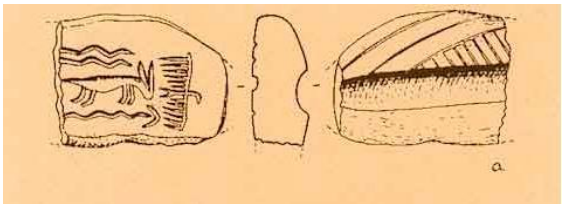

Figure 6.9: Incised stone with canid from Jerf el-Ahmar. After Stordeur 2003 Fig. a

Figure 6.10: Pillar with fox from Göbekli tepe After Schmidt 2011 Fig. 7.

Butchery marks that are consistent with skinning show transverse scraping motions, rather than the perpendicularly-chopped meat bearing bones, showing yet another common use for the animal. There is important representative evidence from Göbekli tepe, where human-shaped pillars are wearing fox pelts. Fox jaws and feet, perhaps remaining from an un-skilful skinning job have been found in graves at Catalhöyük, and had been the remnants of clothing. Other symbolic associations for the fox can be found from the burial of a fox with a human and sprinked with red ocher a Uyun al-Hammam (Maher *et al.* 2011).

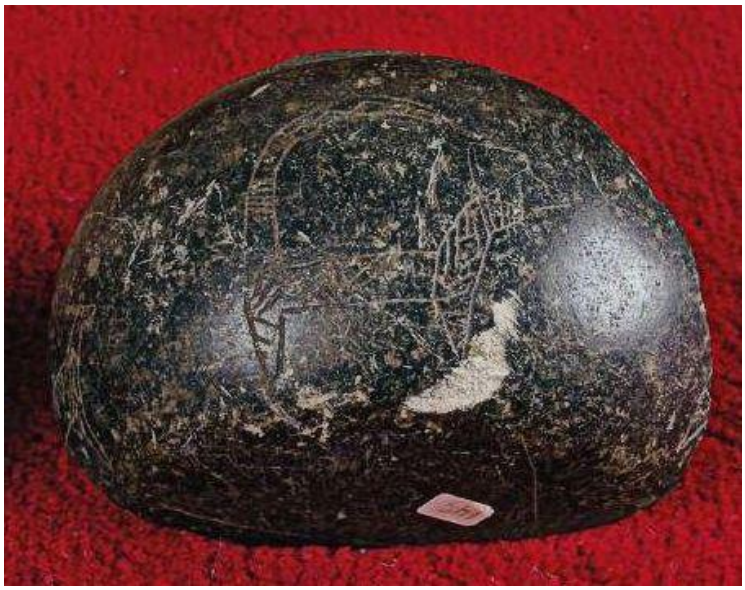

Figure 6.11: Bowl with incised canid decoration from Hallan Çemi. After Rosenberg 2011 Fig. 11.

There is a great deal of evidence for fox teeth and bones fashioned into jewellery, especially during the Early Natufian period (Yeshurun *et al.* 2009). Middle Natufian sites are also well-represented in terms of fox tooth or bone jewellery, with artefacts known from el-Wad, Mallaha 1 and Hayonim Cave (Yeshurun *et al.* 2009). After a brief respite, the use of fox elements continued through the PPNA and PPNB. The long bones of foxes were used to make tubular beads as well, at Levantine sites such as PPNB Motza (Khalaily *et al.* 2007).

Fox ribs are fashioned into tools, like the thin spatulas from PPNB Yiftahel (Horwitz and Garfinkel 1998). Claws and teeth are easily drilled for pendants, and make excellent amulets, such as those known from PN Çatalhöyük (Hodder 2006). Table 6.83 shows some of the sites with clear evidence for *Vulpes* use.

As these animals are represented figurally in a variety of media, it is safe to assume their deployment was not simply aesthetic, but symbolic.

	Levant	**Anatolia**	**Upper Mesopotamia**
Epipalaeolithic, Natufian	El Wad, Motza, Kebara, Hayonim, Mallaha, Uyun al-Hammam	?	?
PPNA and contemporary	Netiv Hagdud, Jericho	Çayönü	Jerf el-Ahmar, Qermez dere
PPNB and contemporary	Yiftahel, Kfar HaHoresh, Motza	Pınarbaşı	Göbekli tepe
PN	?	Çatalhöyük	?

Table 6.83: Sites with evidence of *Vulpes* use by time period

Figure 6.12 shows the calibrated radiocarbon dates from sites with good evidence for the consumption or symbolic representation of the fox. The separation of these two kinds of fox usage shows two very interesting patterns. The blue box in the figure represents the Younger Dryas, the last cold snap as the planet was warming up after the interglacial.

The first striking pattern is the evidence for fox consumption across the Near East during the Younger Dryas event. The dearth of fox representations suggests that symbolic deployment of the fox was halted during renewed broad-spectrum calorie exploitation during the Younger Dryas. There are plenty of Early and Middle Natufian sites with no evidence of any carnivore remains, such as Upper Besor 6; Rosh Horesha; and Rosh Zin (Horwitz and Goring-Morris 2000: 114). Additionally, *Vulpes* remains from the Kebaran site of Ein Gev show no cutmarks associated with butchery practice (Davis 1974: 459). This supports the contention that fox consumption was not widespread prior to the Younger Dryas event.

In places with symbolic representations of foxes; animal burials, engravings, etched reliefs, the return to symbolic relationship with the fox occurred after the consumption ceased. In other areas, both symbolic deployment and consumption of hte fox began after the Younger Dryas event.

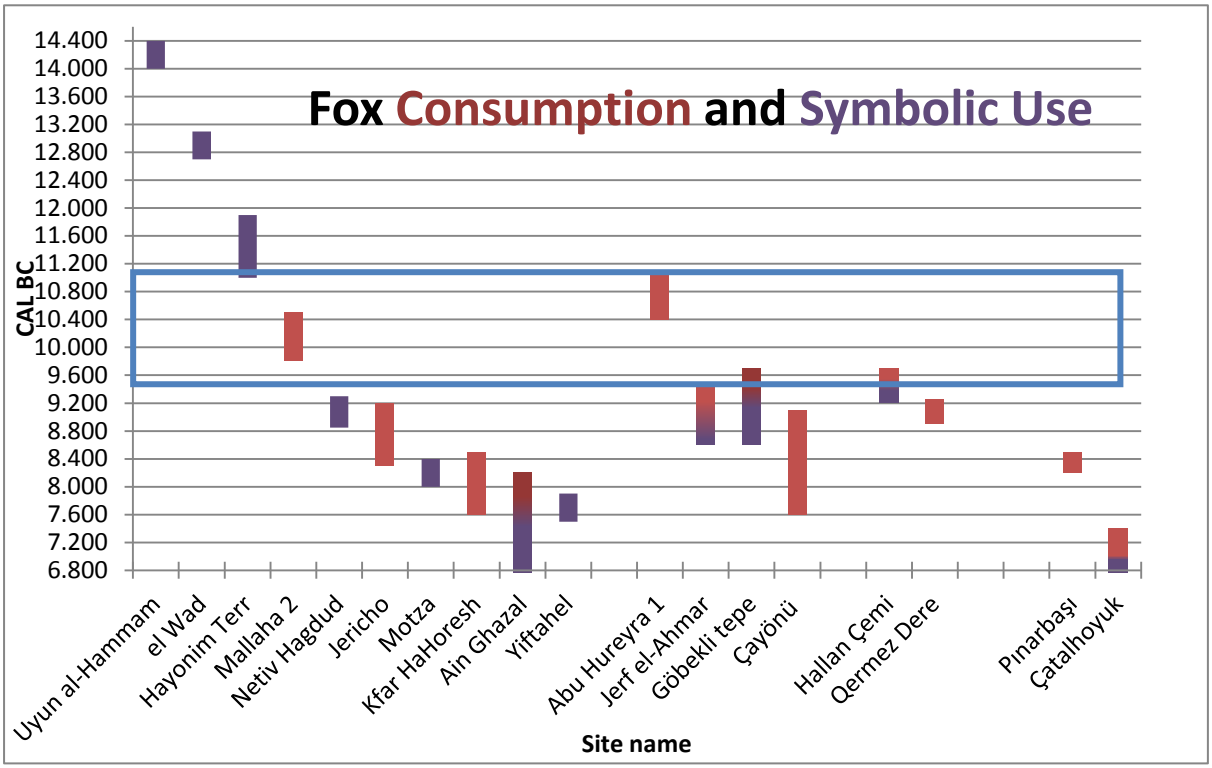

Figure 6.12 Calibrated Radiocarbon dates for sites with evidence of *Vulpes* consumption (red) and/or depiction (purple). The Younger Dryas event is demarcated by the blue box.

Personable foxes (and wolves) were likely tamed during the Epipalaeolithic at Levantine sites. Animals with a personality are more difficult to eat, but joyful to create stories about. A sharp rise in fox lore and symbolism in Upper Mesopotamia coincided with the end of the necessity for their consumption. The shift in fox usage during and after the Younger Dryas shows a re-creation of the significance of the animal; from companion, to dinner, and finally to meaning-laden character.

Fox consumption continued at some Levantine sites after the Younger Dryas. This may have been due to climatic, gustatory or symbolic reasons; a more arid landscape or even a reaction against the initial attempts at domestication.

6.7.4 Final Thoughts

A deeper understanding of ritual can inform a more nuanced interpretation of empirically underdetermined aspects of prehistoric study. It allows for the valid discussion of human intent and symbolic deployment, in terms of the formation of substrates for information organization and storage. These substrates took many forms as human persons made use of the environment they were creating. Archaeological investigation into ritual practice that takes into account the possibilities and actualities of the social interactions with materiality sheds new light on the underpinnings of modern cognition, by illuminating the construction and alteration of the meaning-bearing substrates.

Chapter 7: Interpretations and Conclusions

7.1 Introduction

The major purpose of this thesis was to introduce, apply and evaluate a new methodology. Following its introduction in Chapter 5 and its application in Chapter 6, one of the purposes of this chapter will be to evaluate this new methodology. Before this concluding assessment, I wish first to address the subsidiary goals of the thesis; to provide a broader understanding of ritual, and to clarify the role of interpretation. In order to address these goals, I will return to some of the case study sites from Chapter 4 that best exemplified the more theoretical results of analyses at the end of Chapter 6. The purpose of this chapter is then threefold: to fully apply all steps of the new methodology to some examples from case study sites in order to test the usefulness of the new methodology (7.2), to tie in the broader themes concerning ritual practice illuminated by these case studies (7.3) in order to make general statements about ritual and interpretation in the Near Eastern Neolithic (7.4), and to assess the efficacy of the new model, with suggestions for future research (7.5).

7.2 Symbolization and Interpretation: Case Studies

This section follows on the results of the quantification performed in chapter 6, by selecting certain acts of depositions from the case study sites and analyzing them with respect to symbolization, and finally reaching an interpretation. The importance of symbolic content as entailed by ritual (chapter 3) and of materiality (6.7.2) has already been highlighted, thus it is necessary to describe the potential symbolic properties of structured deposits prior to interpretation. The best way to examine the relationship of ritual practice to human-animal relationships, the uses and meaning of space, or even the symbolic content of materiality is to frame these questions within a rich dataset. I have chosen four of the case study sites to examine in this section as they have clear evidence for ritual deposits, are well-excavated and published, and fall within the main study areas of Central Anatolia and Upper Mesopotamia while, at the same time, representing a range of landscapes, settlement types, subsistence practices, and dates.

7.2.1 Hallan Çemi

1) Contextualization. The general layout of Hallan Çemi is of a centrally-focused village with, over time, increasingly larger and more permanent structures that surround an activity area always full of more ephemeral structures, plastered areas and hearths (for more detail, see 4.8.1). Most of the artefacts recovered were highly fragmented and came

from this area. There are no known contemporary settlements nearby (Rosenberg *et al.* 1998: 26). This central activity area was a stratigraphic nightmare – largely disorganized and excavated in a hurry. On the final day of excavation in 1994, every member of the team was horribly ill, and the news had just come that they were to be evacuated within the hour (Rosenberg pers. comm). An aurochs skull aligned east-west and surrounded by carbon was uncovered. There was a 10 cm ground and polished stone, bright red, positioned in the centre of the jaw. The skull was almost exactly central to the trench, in the middle of the activity area. Understanding the site more broadly provides us with a context that helps understand any given deposit.

Figure 7.1: An aurochs skull from Hallan Çemi. NOTE: This is NOT the skull described as the case study, as no picture exists. Photo taken by Mike Rosenberg, used with permission.

2) Ritualization. To place this deposit within the context of the site, complete aurochs skulls were rare. The other complete example came from the inside of one of the two large late structures, in which it had been suspended high up on a wall, visible to those who entered the structure (symbolic content of this one discussed Rosenberg *et al.* 1998: 29). No other complete bucrania are known. There are other examples of bone depositions in the central activity area, including three interlocking sheep crania and the partial skeleton of a bear (Rosenberg *et al*. 1998:28). The association of the bone and stone sets this aurochs apart from other depositions in the central activity area, and is an instance of ritualization. The completeness of the aurochs cranium, coupled with the absence of other, meat-bearing *Bos* elements across the site, also indicates that the deposit was meaningful and intentional (Rosenberg *et al.* 1998: 33).

3) Quantification. Looking at the results of data manipulation from Chapter 6, there are clear trends for depositions from Hallan Çemi, the Batman region during the PPNA, and the PPNA in general. This section will discuss how this particular case-study deposition relates to those trends. There are 10 depositions in the Batman area from before 8700 cal BC; 9 of which are from Hallan Çemi. All of these ritual depositions are made from bone as their main material; either articulated animal bone or animal cranial elements. The case-study deposition meshes perfectly with thee trends. Interestingly, it is the only deposition

from the Batman area during the earlier period that was created from more than one type of material. This, too, is uncharacteristic of the single-material depositions usually seen in any region during the PPNA. The other departure from typical PPNA ritual depositions is its location outside of a structure.

4) Symbolization. Exploring the symbolisation of this deposit must take into account its many attributes, such as location, materiality and placement. To begin with, the central activity area itself is symbolic, not merely an all-weather workstation. The processes of sustenance occurred there; the creation of foodstuffs and reduction of the wild to the edible. It was a place of sustenance, as well as a place of disposal and destruction. Its central placement amidst the residences ensured it was in the public gaze (Tripković 2011: 161). Though the area was bounded by perhaps more private shelters, it was the heart of the village, and likely representative of the entire living community and their activities, including feasting or other rituals (Rosenberg 1998: 30). Deposition on the midden surface may have shown a relationship to the previous layers of occupational detritus in the area, linking the present with the past.

The bright colour of the red stone, as well as its smooth surface, would have been striking indeed. The majority of worked stone at Hallan Çemi was of a dark gray-green or black chloritic stone or whitish limestone (Rosenberg 1992: 119). Buildings were constructed of gray river cobbles plastered with a whitish mortar. Stone artefacts were often re-used, so the abnegation of recycling such a lovely-coloured stone speaks to a cognitive interference from regular practice (Rosenberg *et al*. 1998: 29). Both the stone and the skull were notable for their lack of fragmentation, especially in an area where very little remained unfragmented.

There are many metaphors that can be evoked by the combination of bone and stone: the juxtaposition of the living and the dead, the dull and the bright, water and land, or local and foreign. To choose among them one must consider the other aspects of the symbolization of this deposit. Placement in the mouth could represent consumption of a necessary element, or the subjugation and ingestion of an enemy force. The stone may have been placed in order to block up the mouth, either to prevent incursion, or to ensure that egress of other material remains impossible.

5) Interpretation. The lack of edible aurochs elements may point to a totemic relationship between the inhabitants and the wild ox. The placement of the skull in an honoured, visible location is similar to the Khanty treatment of bear skulls (Jordan 2003: 133). If we presume (on the basis of the lack of other aurochs bones and the display of the head elements) that the aurochs skull is representative, or totemic, of the inhabitants of Hallan Çemi, then the possibilities for the meaning of the red stone broaden. The dearth of bright permanent colours onsite may indicate the association of the red stone with forces external to the community, either supernatural or another group of persons. The presence of a foreign element in the mouth of a totemic creature may signal the end of isolation,

possibly causing the death of one or the other group. However, the unfragmented condition of the stone and skull shows that, if this were symbolic of groups of people, there is no damage, only dominance. Let us consider, instead, that the organizing metaphor of the deposit is one of obstruction, and that the bulk of ritual activity was not preserved. If so, then the final act of the ritual was the placement of the closed or blocked aurochs skull in the centre of the central area. This is appealing in light of the presence of the other complete aurochs skull, which had been left suspended from a wall in a large building. It may be that the skull that had fallen from a wall was the replacement for the closed or blocked skull. The ritual practice would then have involved the removal of the old skull, stripping it of its power and/or meaning, blocking up any remaining force or symbolic content through the insertion of the red stone, and procession from its placement in a structure to its final deposition in the central area. The stone, representing some external force, or the ritual processes by which it was made strong, then acts as an abandonment deposit – not of a structure- but of an object.

In conclusion, after identifying the ritualizing factors of the deposit, quantifying and discussing the symbolization of its attributes, interpretation suggests that the aurochs and stone were placed in the centre of communal territory, probably to represent some vital cohesive social element, such as leadership. The juxtaposition of the animal and the other may be indicative of group identities or specific sources of power, and the placement of the stone in the mouth of the aurochs might represent the symbolic closure of the skull.

Investigating the symbolic aspects of the deposit allows for a more nuanced interpretation of the ritual which created it. For this deposit, placing it in relation to the gradients of past and present; self and other; and active and closed facilitated inferences about its uses, relations to people, to animals, and to other deposits.

7.2.2 Göbekli tepe

1) Contextualization. The layout of the excavated extent of the site is a clustered group of large stone-built enclosures. During the PPNA there is no direct evidence of onsite habitation, though many artefact processing activities took place on site (see 4.8.2 for details). Pillar 6 is located in the westernmost of the 4 largest excavated enclosures (Schmidt 2011). It is oriented nearly north-south, in the southern wall, with the extant stone wall running up against the middle portion of the pillar. I have chosen pillar 6 as it bears figural representation, is not one of the paired central pillars, nor is it completely invisible. Thus, it is a good representative of the majority of pillars at the site.

Figure 7.2: Pillar 6 from Göbekli tepe. Photo taken by K Schmidt.

2) Ritualization. The entrance to enclosure B (which houses pillar 6 among others) is on the southeast side of the structure (Schmidt 2011). The two central pillars each bear a male fox leaping towards the entrance in the southeast. The other pillars in enclosure B appear to be radiating away from or into the two central pillars. Pillar 6 has a quadruped with a curved tail as well as a snake facing towards the entrance, and no imagery on its northern face (Schmidt 2011). One of the first images a person stepping down into the enclosure would have seen, other than the two central pillars, would have been Pillar 6. Its

partial visibility, blocked up by the walls coming up to it, suggests that the visibility of the images was overshadowed by the importance of the act of their creation. Its later placement into a wall of an enclosure suggests that its existence, rather than its more visible attributes was paramount, and through its presence referred back to the previous (ritual) activity of its creation.

3) Quantification. All of the ritual depositions from the earlier period in Urfa come from Göbekli tepe, and all are made of limestone. In this respect, pillar 6 is very representative of the sample. When expanding the comparison to all objects ritually deposited prior to 8700 cal BC, the Urfa depositions are congruous in that they are made from a single type of material, in structures, and associated with floors. Pillar 6 (and other pillars from Urfa) depart from the PPNA norm in that they have been elaborated and decorated.

4) Symbolization. The ubiquitous limestone from which the pillars and wall-stones were created came from the surrounding hills (Schmidt 2011). The material coupled with the anthropomorphic shape of the pillars may symbolize the extraction of the human from the earth. The size of these pillars may demonstrate the imposing power of ancestral or animal spirits, as well as the collaborative effort in their accumulation, transportation and creation.

The suggestion that the figural representation carved into and out of these pillars refers to totemic identity or regional mythology is untenable without further supporting evidence. Snakes have been associated with phalloi, with the rippling movement of water, and are used as signs meaning 'danger' and 'poison.' The association of the reptile and the snake on the pillar point to an association between the two wild, cold-blooded, slithering and creeping animals. The iconography of pointed tooth, claw and fang may be an allusion to masculinity and its penetrative properties (Hodder and Meskell 2011). The figure of the reptile is seen across the Urfa Plain during the PPN, through rarely outside of the area (Hauptmann 2011). While snakes are seen carved into bone at Hallan Çemi, or etched into stone at Körtik tepe, the reptile is as yet unique to the Urfa area (Rosenberg 1994; Özkaya and Coşkun 2009).

5) Interpretation. An interpretation based on these symbolic elements, derived from the quantifications of the ritualized deposit may include the strengthening of the wall with the pillar, deterring negative forces or enlisting supernatural protection through reference to previous events. The pillar both physically and metaphorically bolsters the enclosure, and acts as an index pointing towards the two main pillars. These two pillars depict foxes leaping out of the enclosure, creating a feedback loop between the entrance, pillar 6 and the central pillars. The placement of pillar 6 serves to anchor past activity in the present, and facilitate the movement of the gaze (and possibly the actor) circulating between these nodes in a liminal space. Pillar 6 therefore adds an otherworldly element to the time and the space as experienced within the enclosure.

7.2.3 Çayönü

1) Contextualization. By the third stage of occupational practices, the domestic structures were quarantined from the public; ritual activities taking place to the east (See 4.8.3). A fragment of a shallow basin with a human face in high relief was found on the floor of Terrazzo building (cell phase), dating to around 7600-7400 cal BC (A. Özdoğan 2011) or the MPPNB (Braidwood and Çambel 1980).

Figure 7.3: Vessel with relief of human face from Çayönü. After A. Özdoğan 2007, Fig 51.

To describe the context across the site at the time when this piece was deposited, I will discuss other images in stone, other human images, other uses for stone, the main material and fragmentation. Other images in stone are largely restricted to incised decoration on bowls. The incision is geometric, unlike the figural representation found at the earlier sites of Hallan Çemi and Körtik tepe (Rosenberg *et al.* 1998; Özkaya and Coşkun 2009). Other human images from Çayönü include one stone female figurine, and many male and female figurines of clay (Broman Morales 1990). None of these figurines was associated with special buildings, such as the Terrazzo building in which the anthropomorphic fragment was found. Coarse limestone bowls exist, as do finer, more well-made shallow bowls of limestone or marble (A. Özdoğan 2011). The darker ones have incised decoration, while the lighter stone is left plain. There is a huge increase in the numbers of these vessels found during the 3rd stage, and many fragmented pieces have been recovered. Stone pillars or standing stones lined the path through the plaza to the Terrazzo building (Schirmer 1990). At other early Anatolian sites (*e.g*. Göbekli tepe and Nevalı Çori), the pillars clearly represent human figures. While there is no direct evidence for this representation at Çayönü, it is interesting that both the pillars and the basin with a human face are made of the same material as the humanoid pillars from the Urfa region (A. Özdoğan 2011). Both these pillars and the basin were destroyed and re-deposited at the end of their visible use-life.

2) Ritualization. The building itself is evidence of the ritualization of structures (Özdoğan and Özdoğan 1998: 585). It is distinguished from other, more quotidian, structures by its floor plan, contents, orientation, location and fabulous floor surface. Situated at the end of a long paved plaza, the building is clearly visible from the domestic structures to the west. During the earliest incarnation of the plaza, it had been lined with standing stones, creating a colonnaded procession towards the Terrazzo building. Just as the Terrazzo building had an interesting use-life, so too did it have an interesting death. The utter destruction of the central area, followed by in-filling, showed that a great deal of care was taken in its destruction. The placement of any object in such a highly-regarded structure must be meaningful (Özdoğan and Özdoğan 1998: 588).

3) Quantification. The ritual depositions from Çayönü span the first two periods, so I will consider the case-study basin fragment in relation to the later depositions from Çayönü, and then from all depositions from Çayönü. The depositions from PPNB-contemporary Çayönü show a great deal of variability in terms of materiality, placement and location. While the majority of these are made of stone, there are ritual depositions of *Bos* and *Sus* cranial elements, as well as one clay bowl. The basin fragment follows the general material trend, though not as closely as at Göbekli Tepe or Hallan Çemi. The majority of ground stone that had been ritually deposited from Çayönü was found in a courtyard or non-bounded open area, so in this respect the basin fragment departs from the general trend, as it was found in the Terazzo Building. The ground stone deposit from the earlier, Grill phase at Çayönü was also found in a structure and associated with the burial of that building, so the basin fragment's deposition may be an atavistic practice for the site. However, deposits near or in a structure, which had been elaborated and decorated are the norm for PPNB-contemporary ritual deposits.

4) Symbolization. The meaning of the human image varies with the rendered details. The face is very stylized, with a clear jawline, rectangular nose, and no other features (Braidwood and Çambel 1980). Personal or gendering characteristics are non extant. As such, it may represent all persons, or a specific personage so important or amorphous that personalizing details are considered sacrilege. Considering the sloping sides of the shallow basin itself, it appears as though it were constructed to collect falling or pouring liquid. Blood residues have been found in another of the ritualized buildings at Çayönü, so it is not improbable that blood may have been aggregated in this basin. The face without an identity may then represent the human donor(s), if the residue is found to be of human origin.

The original placement of the basin is unknown, though the face is carved into the side of the trough. If the basin had been placed on a floor, one must have been at a low level to see the face. However, if the basin had been placed atop a bench, altar or table, the face would have been clearly visible to all, depending on the lighting. The face may even have been paired with another image in the other side of the basin (Braidwood and Çambel 1980). Considering that the pillars, once clearly visible, were fragmented and re-deposited so as to be invisible; it is not unreasonable to suggest that the same thought

pattern created the final situation of the basin. It too was found having been deposited after having been broken, and filled over.

The meanings of fragmentation are highly event-specific. In some instances, and item is "killed," because it no longer is meaningful (A. Özdoğan 2011: 225, footnote 18). Alternatively, destruction of an object could mean that its power is recognized and wished to be incorporated into new generations of meanings (Hauptmann 1993: 57 *ff*). An example of reincorporation at Çayönü might be the placement of celts in the walls of grills as abandonment acts (A. Özdoğan 2011: 216).

5) Interpretation. There are many possible interpretations based on the wide range of symbolic elements included in this act of structured deposition. The most probable are 1) an abandonment deposit of a highly-charged and visible item, following the pattern of the destroyed contemporary pillars in which the strength and meaning of objects are intentionally fragmented in order to repurpose or deny their previous power, and 2) a gift left in exchange for some object taken from below the floor, or the destruction of the floor itself.

7.2.4 Boncuklu

1) Contextualization. One of the most interesting deposits at the PPNB site of Boncuklu was a pair of aurochs skulls, around which the southern wall of building 4 was constructed. The mudbricks of the wall were set against the bucrania, with the plaster faces of the walls running up and over the front of the skulls. Unfortunately, the top half of the skulls was destroyed by agricultural activity, so the position of the horns can only be guessed at. Currently, Dr. Baird and Dr. Martin (pers. comm) believe that the inner horns had been removed, leaving the outer horns protruding from the wall. This is the earliest example of bucrania installation in the Konya Plain (predating Çatalhöyük by at least a thousand years), and its double nature raises many interesting questions. A plaster basin in front of the animal heads appeared late in the sequence of floors in this building.

Figure: 7.4: Reconstruction of the Boncuklu double bucrania. Reconstruction by Louise Martin.

2) Ritualization. To contextualize, house walls at Boncuklu are generally made of mud brick, 1 or 2 bricks thick, with few inclusions (Baird *et al*. 2011). The creation of a wall around a pair of heads sets it apart from all other walls, and is an instance of ritualization. Additionally, this is the only example of an animal cranium which had been ritually deposited at Boncuklu.

3) Quantification. The deposits at Boncuklu are almost entirely of animal bone that had not been altered prior to deposition. While the material (bone) may seem typical, the wrenching off of the internal horn suggests the kind of preparation and elaboration not seen in the other Boncuklu deposits. This deposit had been plastered over in a protective manner, maintaining the shape of the bucrania. While other deposits from the Konya Plain contemporary with the PPNB involve plaster, all of these were completely obscured by the plaster, leaving no hint of the bones contained within. The double bucrania follow the general trend of PPNB-contemporary deposits by its location in a structure, and elaboration.

4) Symbolization. Exploring the symbolisation of these bucrania must take into account their many attributes. To begin with, the house itself is symbolic, not merely a container for dry people. A house can represent personal boundaries, identity, and ancestral history (Waterson 2000). The bucrania were emerging from within the wall, demonstrating the permeability of the walls as a place of incursion (Gebel 2002). They were also near the floors, under which humans had been interred. This may serve to protect or show respect to ancestors. This too shows a relation to a liminal boundary. The skull, as the seat of individual vitality may represent the life force, or be a totemic marker of a clan or supernatural force. The horns protruding from the wall can be seen as a metaphor for wild animals, or as a symbol of dominance and power, or even masculinity (Twiss and Russell 2010). That they were covered in plaster can be understood as a re-fleshing of the beast, returning its life force; or as a concealment of the true power of the installation (Baird *et al*. 2011; Meskell *et al.* 2008: 381). The human intervention of inner horn removal and duality of the bucrania could represent ideas of balance and order, or as twins increasing vitality twofold (Russell and McGowan 2003: 448; Kuijt 2002: 124).

5) Interpretation. An interpretation based on these symbolic elements, derived from the quantifications of the ritualized deposit may include the strengthening of the wall, deterring negative forces and enlisting supernatural protection. The protruding horns certainly focussed attention, and acted as a reminder of past events and actors. The proximity to floor and placement in wall increases the likelihood that the permeability of solid features was represented, and that the incursion of supernatural forces was a constant presence in daily life. The depositional order of operations (if you will) suggests that the bucrania predated the wall, and may then be seen as a foundation deposit.

7.3 Regional aspects of materiality and the interpretation of human images

The previous case studies touched on many of the broader themes discussed in Chapter 4, in terms of the theoretical considerations from Chapter 6. Each of the case study sites provided illumination on the use of space, relationship with animals, and symbolic materiality at a point in prehistory. This section will expand on the case studies to discuss the underlying issues of ritual and belief by discussing the deployment of the human image and other regional idiosyncracies.

Knowing that more bone, rather than other material, was deposited during the PPNA and before, it is interesting to note that no human shapes were made of bone, or if so, were seen fit for special deposition. It is also interesting that every single instance of ruminant-shaped objects, no matter the material, was deposited during the PPNB or after, and that 75% of these ruminant-shaped objects were principally made of animal bone, in stark contrast to the proportion of bone-other material during the PPNB.

The predominance of bone objects decorated as ruminants, and the paucity of bone decorated as human shows that there is a clear idea of what material is most properly used to portray our own species. The shift from megalithic limestone to diminutive figurines for the representation of people reflects upon an internalization, or privatization of the depiction of the human. Miniaturization may also be a function of increased portability; a single person can now provide the figure at different locations. This, too, reflects upon personalization, for, even if the smaller figure is meant to be made public, its transportation has become privatised. At Nevalı Çori stone was used for representative figures in ritual or public buildings, but all clay figurines were found in domestic structures (Morsch 2000). The nearby, earlier site of Göbekli tepe has human representations in the structural limestone, both as an incised woman on a wall, and as the T-shaped pillars. No clay figurines and no human bones have yet been recovered from the site. In the earlier period at Göbekli tepe, miniature limestone statuettes of animals were recovered, but no human figures until the latest phase (Karlsruhe 2007). Certainly in the Urfa region there is a clear change from the depiction of humans to the use of their parts in ritualized activity. The theatricality of this transition from representation to realization cannot be emphasized enough. The huge imposing human shapes of pillars and statues give way to tiny human shapes and use of human bone. The puissance of the human shape no longer trumpeted in large form, it has been accepted for personal use.

In the Zagros and northern Mesopotamian region, we again see anthropomorphic pillars, re-fleshed with clay, inside structures. At Qermez Dere, red and white plaster was used to shape clay pillars, while at Nemrik 9 pillars were made of pisé and clay. In contrast to the Urfa region, there are several instances of human bone deposition in the earlier periods; all of cranial elements. Human crania were placed in the fill of abandoned buildings at Qermez Dere and at Nemrik 9, and a human jaw and antelope horn were buried together in the stone pavement of the courtyard at Nemrik 9 (Kozłowski 2002). The only other

animal bone deposition from Nemrik 9 is a pair of gazelle horns placed a few inches above one of the skulls buried in the fill of an abandoned hut. All of the structured depositions from the Zagros and Northern Mesopotamia region are within or near manmade structures. The mass of bird wings and goat skulls from Zawi Chemi Shanidar was 3 m south of the earliest structure (Solecki 1977). As Zawi Chemi Shanidar is earlier than Nemrik or Qermez Dere, and there is no evidence of human figures, either as pillars, carved, shaped or as figurines, it may be that the earliest ritual behaviour in the Near East to incorporate structured deposition focused on the presentation or performance of animistic or animal spirits. This transitioned into the ritualized adoration of ancestors, who, as keepers of the knowledge of the animistic spirits, were physically incorporated into structures in the form of pillars. Human crania were later incorporated into ritual in the Zagros and Northern Mesopotamian PPNA, but the sacrosanct power of the human spirit was too great, or too concatenated with location, and they were buried upon the abandonment of structures in which the persons had lived or had been displayed. The personification; or perhaps even identification with ancestors, of animals is seen during the PPNB, with the conspicuous placement of animal skulls in architectural elements such as walls and niches. The human images from the Zagros and northern Mesopotamia region which are not monumental are restricted to the cranial elements and the sole figurine; both of which come from the PPNA.

In contrast, there is no human bone specially deposited in the Batman region during the PPNA. To complicate matters, there is no human bone whatsoever from Hallan Çemi, and only six known burials from Demirköy, to where the inhabitants of Hallan Çemi possibly relocated after the abandonment of the earlier site (perhaps due to a breakdown in obsidian trade (Peasnall and Rosenberg 2001: 385)). The structured depositions are few, though the decoration of objects is widely practiced. Fragments of finely polished chloritic bowls with incised decoration and fancy pestles are known from both sites, yet only one piece could be said to have been specially deposited (a grave good from Demirköy). There are no human forms from either site. Representational art from Hallan Çemi includes the figures of snakes, canids, goats and a bear or pig (Rosenberg and David 1992: 4-5). Far less representational art is seen from Demirköy, despite the presence of burials and the far greater proportion of the site left unexcavated. The placement of a nearly complete bear skeleton on the central midden at Hallan Çemi may shed some light on this problem. Were the hunters merely showing respect for the hunted animal, the bones would likely have been hung away from the defiling claws of scavengers. However its central placement and proximity to *Ovis/Capra* horns belies a different intent, similar to that at Zawi Chemi Shanidar. The presentation of the animistic spirit, and the performance of the transportation of a heavy carcass, coupled with the absence of human figures shows that this sort of ritual likely predated ancestor identification or worship. The spirit of the bear is placed on the earth, to become one with the rocks and soil. Perhaps even the 'wings' of the Hallan Çemi public buildings were thought of as the cradling arms of the bear, made from the rocks that his bones became. The beginnings of a transition to increasing concern for

links with ancestors may be seen at Demirköy, where still no human figures remain, but intramural burial begins. The burial of animals or spiritually-powerful parts of animals with humans can be a sign of a totemic spiritualism, and at Demirköy, there is a dog skeleton buried near humans (Rosenberg and Peasnall 1998: 200). It may be that in the Batman region, the slow transition from animism at Hallan Çemi to zoomorphic deities or totemic animals at Demirköy may be seen in the ritual depositions.

This progression continues not in the Batman region, but in the slightly later site of Çayönü, in the Ergani Plain. There are cultural affinities in terms of certain pieces of material culture, which more closely resemble Demirköy than Demirköy resembles Hallan Çemi (Rosenberg 2012: 81). Similar to Demirköy, we see deposition of animal bone near a human burial: a dog burial and boar jaw.

Later depositions at Çayönü also include animal bones in conjunction with the burial of human bones, so totemic spirituality may not have disappeared entirely, or at all. A boar's jaw and an aurochs cranium marked human burials, and a large aurochs cranium hung from the wall in the mortuary building. The paucity of human figural representation at Çayönü is almost certainly tied to the central, imposing mortuary structure. Both Braidwood *et al.* (1981) and Broman Morales (1990: 71) referred to clay figurines in the prehistoric phases at Çayönü, yet no stratigraphical distinction is offered. The majority appear to be of ruminants, and none were found outside of domestic structures. In any case, no figurines were specially deposited at Çayönü. The continued transition to a more human-focused spiritual life may be seen in the pillar-lined avenue which led to the terrazzo building. To reach this interesting structure, one had to pass between the imposing figures, perhaps symbolic of ancestors, to arrive at the special building where knowledge was shared or ritual performed. The human association with this building is confirmed by the broken stone basin with a human face found within. To contain the power of the object it was destroyed, and then re-implemented in the pavement of the floor.

Another interesting deposit from Çayönü is a stone monolith that had been destroyed and placed on its side on the floor in the Terrazzo building near the east wall. After this deposit, the building was filled with clean earth. It is not unreasonable to assume this monolith was once a standing pillar. This may have been an aborted attempt at the beginnings of ancestor worship. Possible red paint on this monolith may have symbolised blood, either to enliven the pillar, or to show its death. This may have been an indication of the transition from totemism to ancestor worship.

Between the settlements at Hallan Çemi and Demirköy in the Batman region, the site of Jerf el-Ahmar was beginning to be settled in the Euphrates region. This region had a very different progression through types of depositions, most likely due to its proximity to the Levant. Both Mureybet and Abu Hureyra had settlements during the Natufian periods, but it is only during the PPNA that ritual depositions become evident. The third phase at Mureybet began slightly after the PPNA settlement at Qermez Dere. From the earliest

settlement at Jerf el-Ahmar, we see a very different focus from the floors and open areas of the Batman and Zagros regions. The hearth becomes an important place, and benches are used for structured depositions. At Jerf el-Ahmar, all of the structured depositions are crania, or associated with crania. A pair of human skulls was placed in a post hole, and a triad on a hearth (Stordeur and Abbés 2002: 583). Two articulated human skeletons were placed as foundation deposits, and a string of clay beads was twined around the horns of a bucranium. Like other PPNA assemblages, the Euphrates is very bone-rich; however, the focus on human bones distinguishes the early ritual deposits in the Euphrates region. The importance of the human figure and human remains begins early in the Euphrates. This may be due to the earlier Natufian settlements in the area which had a rich burial tradition (Bar-Yosef 1998: 164). The move towards on-site cemeteries with group graves at the very beginning of the Natufian shows the beginning of domesticity, a focus on keeping people near the hearth and home. Animistic or totemic practices in early Natufian mortuary ritual included the depositions of horns, a complete dog, and a headdress of gazelle phalanges with burials (Perrot and Ladiray 1988; Tchernov and Valla 1997). Byrd and Monahan (1995: 274) claim that the rank of youths under 25 was greater than elders due to the quantity of grave goods. As most of these goods were animal parts, it may be that the young people had more need of totemic protection or spirit guides in death. The Neolithic settlements in the northern Euphrates may have piggybacked upon this pre-existing spiritual framework. The increasing importance of the individual human is seen throughout the Natufian, as burials shifted to individual internments with few grave goods and the beginning of skull removal. Mureybet, once the site of a Natufian settlement, was resettled after a brief abandonment and the depositions became very aurochs-heavy. Many scapulae and horns are specially deposited, some in benches. There is even one carnivore jaw near a hearth (Akkermans and Schwartz 2003: 52). Two large horn core fragments were placed in a red clay and limestone wall. The piebald wall may have symbolized the union of the human and the animal.

Clay-topped pillars and limestone pillars in human form are known from the Zagros and from Çayönü, as well as the use of red pigment. The inclusion of wild animal vitality could represent the integration of the zoomorphic and anthropomorphic spiritualist traditions, or the return of a token from the animal which had been provided by the ancestors.

From Jerf el-Ahmar, settlements may have spread north to Dja'de and Tell 'Abr, and south to Cheikh Hassan. Both Tell 'Abr and Cheikh Hassan date to the end of the PPNA, and should be expected to present a development in behaviour from the earlier sites. The single known structured deposition from Cheikh Hassan more closely resembles the depositions from Jerf el-Ahmar; three human skulls in a foyer of a structure (Cauvin 1977, 1980). The PPNA custom of amplification through repetition or, in this case, multiplication of deposited items, is seen in the quantity of skulls. This dedication to the curation of strength of one's forebears shows an advanced sensibility and emphasis on the human shape. In contrast, the late PPNA site of Tell 'Abr is unique in the quantity of ritual residue and the simultaneous

paucity of structured deposits. In addition to the two bucrania placed in benches there are large limestone basins with burned horn cores and gazelle skulls fused within in the public building. Clay boxes of bones and stones lie near the benches that ring the large structure. Burned animal remains had been dumped into a runnel running down the middle. It was clear that this public structure was used for ritual activity, yet only two instances of structured deposition could be isolated within. As the northernmost site among the Euphrates region, it may have had some connections to ritual sites in the Urfa area.

The structured depositions of the PPNA Euphrates were already focused on the house, yet in the PPNB, this becomes more intense, almost territorial in its demarcations. An association between the house of the ancestors and the ancestors themselves is not a fantastic leap, and this intensification of domestic depositions may have shown a stronger shift towards ancestor-focused spiritual life. From the later levels at Mureybet, which had been focused on aurochs depositions during the PPNA, there is a clear shift to depositions of human crania. Three skulls were placed in the angle between the floor and wall of a domestic structure, propped up on clumps of red clay which stood out against the yellowish clay covering the floor. Similarly, the PPNB levels at Abu Hureyra provide four human skulls; one in between houses in a lane next to a domestic wall, and one in a wall. The other two were pigmented with organic red material. One is the earliest human burial from the site, directly atop the Epipalaeolithic level and just outside the earliest plastered floors. A wall was later built over this deposition. The other pigmented skull was placed in a large pit atop the complete skeleton of an adult male; animal bones and the remains of at least two other people. The association of humans and colours, particularly the colour red, is clear in the ethnographic literature. The lifeblood that flows through us all can easily be accessed for ritual use, though, with rare exceptions, depositions of blood alone cannot be seen in the archaeological record. The red pigment used to cover human skulls in the Euphrates may have presented a more permanently visible addition to the blood libations of concerned descendants or worshippers. Abu Hureyra, the southernmost site along the Euphrates, may have received influence from the earlier habitations at nearby Mureybet, or perhaps an atavistic group persisted. Whatever the reason, the animistic and totemic practices of ritual deposition continued well into the PPNB. This is seen in the aurochs skull in a pit, a caprine jaw and horn in different graves, and a *Bos* horn core in a wall. Despite the focus away from the human figure, the relation with humans is clear, through the presence in graves of possible totemic talismans and the overwhelming focus on domestic structures. This shows a very different trajectory through the various stages of religiosity from the other regions already discussed.

Turning to the Konya Plain, only one deposition from the PPNB is of human bone. No figural representation of humans is known. Interestingly, the interred skull from Boncuklu is so anomalous that it is used to argue in favour of exogamous marriage (See Pearson in press). Assuming the woman whose skull was deposited in that pit married into the community or was brought from elsewhere (perhaps the Euphrates?), all other structured

depositions conform what might be expected of a domesticated, hearth- and home- focused animistic or totemic spiritualism. An aurochs rib was built into the base of a hearth, an aurochs axis was deposited in an empty post-hole and an aurochs rib was pressed into the threshold of a later building. A pig scapula was placed near the back or pelvis of a female burial; a place where females might enjoy extra totemic protection, especially if she had been raped or died in childbirth. A large aurochs scapula was also placed in an emptied burial, perhaps as a symbolic replacement for the person who had previously occupied the grave. The importance of aurochs, both as a totemic animal and as a zoomorphic deity to whom offerings may be made is seen at Boncuklu in the pair of oddly-chopped aurochs skulls around which a wall was built and a plastered basin set in front of. Two other depositions considered as structured deposits according to the model in chapter 5 were the articulated fish vertebra and obsidian chip in a wall. These must be ruled out, as they fit no pattern. The association of fish with obsidian is unknown outside of clusters, as are depositions within mortar, between bricks. Caches of obsidian are known from many sites, and associated with homes (see Carter 2007).

The two structured deposits from Can Hassan III both come from domestic structures: a large fossil embedded in the corner of a room, and a pair of canid skeletons below the threshold of a door. The comparative lack of figural representation at Can Hassan must be attributed to the strategy of surface scraping, rather than excavation. There is evidence for plastered walls and floors, some of which may have been painted red (French *et al.* 1972).

The other early site in the Konya Plain was more likely used as a seasonal camp, perhaps by the same population that more permanently inhabited Boncuklu. The structured deposits from Pınarbaşı are quite disparate from those seen at Boncuklu, but this may be attributed to the domestic focus at Boncuklu, and the itinerant hunting nature of the habitation at Pınarbaşı. There are several clusters of mixed animal bones with flakes of clay and occasional flecks of ochre, obsidian and greenstone in pits of ashy cobbles. This is quite similar to the pits at Zawi Chemi Shanidar, all jumbled together. The other type of structured deposition found at Pınarbaşı is the deliberately-shaped plaster objects, of a startling white colour and with bone inclusions. These seven objects were specially-created, and then specially-deposited. The care taken in their construction is more akin to the specially-deposited objects of the PN. The bone and cobble clusters from Pınarbaşı foreshadow the cluster deposits from Çatalhöyük. Interestingly, of the 4 known scapula deposits in the PPNB, 2 belong to Boncuklu, and the other 2 - at Mureybet - are found in compact clusters of many species of bone. Thus the scapula may have atavistic meaning in terms of totemic, hunting or animistic spiritualism long before it was used as a plastering tool. Interestingly, there are no scapulae deposited at the Zagros or Batman sites, reinforcing the local emphasis on depositional activity.

Within the Konya Plain, there are several statistically significant shifts in depositional behaviour between the PPNB and PN. During the PN there is an explosion of figural and

formal representation in a myriad of media, as well as a clear shrinking of the aperture to focus nearly exclusively on domestic structures. The external focus on middens as a locus for ritual activity is unsurprising, especially as a great many used to be houses.

The many clusters at Çatalhöyük may have been a continuation or development of the bone piles from the seasonally-occupied hunting camp at Pınarbaşı. The role of hunting in an increasingly pastoral society may have provided a ritual, masculine nostalgia as an outlet for aggression and the insecurity that comes when the responsibility of protein procurement is decreased. The ritual clusters, or 'magical deposits' (Nakamura 2010) from Çatalhöyük show a broad range of inclusions, usually incorporating animal bone, obsidian, ground or unworked stones and clay. Often tools, figurines or speleothems are also included in these clusters. The first attempt to unpack the clusters at Çatalhöyük was through the analysis of 'commemorative deposits' (Russell *et al.* 2009); a mix of artefacts buried beneath house floors. These tended to be near walls or platform edges, away from main traffic areas, yet still within domestic structures. Their model was ultimately insufficient to deal with the clusters, as they were not separated from other special deposits which included animal bone. Many animal body parts are used in these special deposits (Russell and Meece provide an excellent table; 14:3), though the focus remains on wild animal parts. Hodder points out the greater emphasis on wild animals for use in feasting rituals (2012: 256-7), and Pels (2012: 255) analyzes this emphasis in terms of a departure from the standard entanglements of a domestic structure.

The site of Çatalhöyük is important for analyses of ritual as it allows us to go beyond hunting pits and feasting deposits. Due to the widely excavated areas across the site, it is possible to make correlations between individual types of ritual indications; such as the presence of taboos or totems, and specific buildings. One example is building 65, the location of "almost exclusively" every crystal found onsite (Nakamura 2012: 318). This may have shown that even inorganic material acted as a group or clan totem. Just as a concentration of specific elements can show a symbolic valuation, so too can the absence of widespread floral or faunal elements. Taboos against eating or bringing certain animal parts were likely practiced across the site. With few exceptions, the only *Cervus* bones to be found are worked long bones and antlers (Russell and Martin 2005). Juxtaposing the strong presence of totemic evidence late into the PPNB with the quantity of and care taken in the production of human forms produces an image of entwined systems of beliefs.

The wide variety of human representation at Çatalhöyük is striking in comparison with the utter dearth in earlier periods on the Konya Plain. The majority of the clay figurines were quick affairs; both in creation and use (Meskell *et al.* 2008). In the case of anthropomorphic representation, gender is less important than the rough form of humanity. The proportion of human-shaped figurines increases in later levels, as do painted representations of human figures. The earliest painted human comes from the east wall of VIII.8 (Mellaart 1964:70). A headless human and a more complete accomplice stand between two vultures. This motif continues in the next building, VII.8, constructed directly atop its predecessor. A kettle of vultures surround six headless forms. By the next level, VI,

humans are portrayed with their heads (Mellaart 1967: 161). By level V, humans are not only in possession of their heads, but also of their strength; they are depicted teasing boars, stags and a large bull. While all of the figural paintings from level V come from the same building, the portrayal of humans spreads in levels IV, III and II. From the onset of occupation at Çatalhöyük, the human form was represented in clay as a tool for use in wish-magic or as toys (Voigt 2000). The portrayal of human figures on painted walls evolved from deceased humans in a passive role to active, vital persons working together to accomplish mutual goals. Burials of human persons were more likely to be found in buildings with reliefs and mouldings (Düring 2001: 10) and those with wall-paintings (Hodder 1998: 76).

The changing conception of the human form from something imposing and sacred to a tool that can be used bridges the gap between the spirit world and this world. Animistic beliefs require no shamans to mediate between worlds, as the spirits of trees, humans, mountains, lakes and animals are before each other and accessible to all. It is only when the spirits of ancestors or feast animals are divided from the present that altered states of consciousness are called upon to access a greater, supernatural world. The shaman is the embodiment of a tool, and though she or he can breach the liminal, s/he can still be touched and spoken with as a living person.

Traditional interpretations of the headless figures as dead persons offered to vultures for excarnation has been challenged by many (Last 1998; Düring 2001, 2003). Another interpretation of the two people from VIII.8 (one headless the other with a head) is of a shamanic metaphor. Upon entering a trance state, a shaman may appear to have "lost his head." It may be that the depictions are of the same man in two states of consciousness. Expanding this idea, the therianthropomorphic half-vulture could be another representation of the shaman communicating with the vulture as his totem animal, or spirit walker.

Just as a shaman may be said to "lose his head" to enter the spirit world, so too might figurines have had their heads wrenched off to finalize the transportation of a wish to the other world. This may have evolved into the wooden-headed clay figurines of the PN Lake District sites. The easy insertion and removal could have been used as vessels for repeated communication with spirits or wishes.

In his discussion of the human image, Bienert claims that individualisation is rare in the PPNA and Natufian, both in terms of burial customs and in the shape of figurines (Bienert 1995: 82). During the PPNB, the greater emphasis on sexual and personal characteristics is seen in the gendered appearances of figurines and the detail shown in re-creating plaster faces. The increased elaboration and anthropomorphic decoration of special deposits during the PPNB also supports the idea of greater care taken in the depiction of human individuals during the PPNB.

When individual human persons are not conceptually distinct from rivers, rocks or badgers, participation may be honoured more than single agency. A community focus on ritual activity may be expressed through the clearly visible, obvious location of the act; the nonspecific objects selected for deposition; and a jumbled placement which reflects the

efforts of many participants. These three criteria are certainly true of the pits from Zawi Chemi Shanidar and Pınarbaşı. The pit of goat skulls and bird wings from Zawi Chemi Shanidar may have been deposited after a feast of goat and dancing. There were certainly enough wings for 17 dancers; four bearded vultures, one griffon vulture, seven sea eagles, four small eagles, and one bustard (Solecki 1977). Just as according to animistic belief, everyone can approach spirits with no distinction, in the creation of a hunting pit everyone participates, everyone dances, everyone takes and everyone gives.

The concept of giving is common as a part of ritual acts, and what is appropriate to give can inform the contents of a structured deposit. Once a division is made between types of spirits, a division is also made between types of people. Everyone can still access the supernatural, but fewer people perform the ceremony as representatives of the whole. Some give, yet all take. Participation in rituals is stratified, causing the human image to be feared, powerful. Ancestors and totems that may directly influence individuals are taboo to speak of, display or consume but for exceptional circumstances.

When the spirits are expelled from this world, shamans are required to mediate, through altered states of consciousness. Access is no longer universal; the layman is shut out from acting *within* the supernatural, yet can still call upon its powers. The totem becomes more personal, more individual. Rituals are divided into the low-frequency but high-arousal communal acts and the high-frequency, low-arousal personal acts. The image of a human can be casually given over to the supernatural, and an individual takes.

I have identified three possible shifts in belief on the basis of the changes in acts of structured deposition across the early Neolithic of the Near East. Belief is what emerges from the entanglement of many social processes entailing: ritual practice, inclusion, symbolism, agency, stratification and the human image.

7.4 Ritual and the Role of Interpretation

7.4.1 A broader understanding of ritual

Ritual is a polythetic category (Needham 1975). There are many types of rituals, not all of which share the same attributes. By focusing on one particular type of ritual activity - Structured deposition- which is itself polythetic, we can narrow the aperture of inquiry for sharper resolution. Some of the conclusions that can be reached after this inquiry include the inseparability of ritual and mundane activity; the importance of individual relationships and experiences as part of ritual acts; the social creation of symbols; that different symbols are deployed in ritual and quotidian activities; and that interpretation of prehistoric ritual can be meaningful in terms of intentionality and belief.

7.4.1.1 Ritual is not separated, not punctuated from everyday life.

The Neolithic practice of internment below house floors is one example of the crossover between sacred and mundane spaces. The dichotomy between economic and ritual explanations has repeatedly been shown as untenable (Knight 2001: 49). The focus on the hearth, particularly during the PPNB, as a locus of ritual activity in addition to its more quotidian uses shows how, "In the Neolithic, ritual is performed in spaces when secular activities important for survival took place, in particular food storage and processing" (Marangou 2001: 155). However, the distinction between secular and ritual activities was unlikely to have been conceptually separated. "They perform their rites, relate their myths, uphold their norms, and experience their emotions, without analytic reflection or linguistic generalization" (Smith 1962: 54).

7.4.1.2 Personal involvement

While it is true that no researcher can recreate the embodied qualia of a ritual participant, it is also true that these sensations cannot be divorced from a study of ritual (see 1.3). Participation in communal, family or private ritual is a highly personal series of events. Multi-sensory analyses of prehistoric behaviour (*e.g.* Skeates 2010) have thickened the descriptions available in interpreting the past. The smells of burning woods or freshly crushed ochre, the blinding smoke in enclosed spaces, sythaesthetic descriptions of actions and events cannot be recreated as they were, but modern attempts to understand the context of situations must have recourse to the experience of the individual participants. Analyses of embodied, phenomenological, and performative aspects of ritual are a helpful addition to understand any experience (Ingold 2000: 99). Ethnographic research has shown how modern hunter-gatherer populations have personal relationships with animals, in addition to with each other and with the environment (*e.g.* Etiendem *et al.* 2011). Just as personal relationships change over time, so do levels of personal involvement change through time.

7.4.1.3 Symbols are created by communities, but cannot be separated from the individual.

It is impossible to divorce the *anthropos* from *anthropologia*. Symbols do not appear, nor are they static. A comprehensive description of ritual must take into account the human persons who created and were affected by the symbols involved in the acts. Despite the formalization of ritual behaviours, they are emotionally-charged events; even the enunciation of a wish. Sensible objects, odours, textures, colours or sounds may refer to events, cultural mores or esoteric nouns important to the performers. Even during private ritual (*e.g.* creation and destruction of a wish-figurine, burials of cache of obsidian near hearth), the symbols deployed are not *sui generis*. In public, or during communal ritual activity, symbols are deployed by the many, but each individual brings to their conception different experiences. Thus, the same symbol may have many different meanings through the concatenation of many different emotions and experiences.

7.4.1.4 Different types of symbols are engaged in ritual activity.

Just as rituals can be divided into high-arousal, low-frequency acts; and low-arousal, high-frequency acts, so too can symbols be divided. The more common or ubiquitous symbols used in dress or decoration do not evoke a strong emotional response. Familiarity may not breed contempt, but indifference. Other, more infrequent, symbols carry a greater emotional charge. Though the remains of infrequent ritual acts may be displayed long after their use, it is not the display that is important, but the creation, the act. Display helps to remind us of the exhilaration of that infrequent event, much like an athlete hanging a medal on her wall. She may recall the pride, sweat, exhaustion and adrenaline as she sees her medal hanging on the wall, but the immediacy is gone and the emotions evoked by the medal slump into familiarity. Living in a house with bucrania on the walls or in niches forces the attenuation of the inhabitants to their presence, no matter how exciting the creation ceremony. Attenuation is only one way symbols can change meaning.

7.4.1.5 We can have recourse to discussions of prehistoric belief

It is illogical to presume that the actions of prehistoric people occurred without any beliefs on their part, certainly during ritual activity. Assuming that patterning in the archaeological record demonstrates cognitive interference then we have evidence of past beliefs. That is not to say that an individual believed in the efficacy of a given deity or practice, but that that individual believed that that particular practice was the proper thing to do. As a demonstration of culturally-determined mores, rituals are constrained as reactions to situations. Through a contextual investigation of the available evidence, it can be both possible and valid to include discussions of belief in archaeological interpretation.

7.4.2 Role of Interpretation

In this section I will make explicit the interpretive processes I have used in the previous chapters. To do so, I will first describe the ways in which archaeologists form logical arguments about the past, the relations between validity and truth, and then offer some conclusions about the role of interpretation in archaeological investigation.

Inference is the process of going from evidence, or premises, to conclusions. There are two main types of inferences that can be drawn when forming arguments: necessary inferences and those that are not necessary. Necessary inferences (or deductions) are rarely used within the realm of archaeology, as the premises must be known to be true in order to guarantee a true conclusion. As we are without recourse to past intent or future evidence, many of the premises used in archaeological thought are hypothetical or unverifiable (*e.g.* if we keep digging; this was a public building), and connot be considered true.

This leaves the non-necessary inferences: induction and abduction (Peirce 1903). Unlike deductive reasoning, in which a specific is derived from a general, induction is used to derive a general from a specific, often extrapolating a characteristic of the whole population from a sample. For example:

> All the excavated structures in the lowest level of a settlement are circular.
> If we continue to excavate this level, we will find more circular structures.

The conclusion is probable, but not true. This type of inductive inference is called a singular predictive inference (Carnap 1952) One of the most common types of induction used in archaeology is analogy (See discussion in 2.2) which is an inference made on the basis of shared traits.

Abduction, the other kind of non-necessary inference, is often considered to be a special type of induction. It was formulated by Peirce as he saw that Deduction and Induction alone were insufficient to approach the meaning and structure of many arguments (Peirce 1903). Abduction is described as an inference to the best explanation, and is often confused with the hypothesis that explains an observation (Peirce 1903). While induction extends or broadens knowledge in order to make predictions, abduction completes knowledge by finding a hypothesis. The mechanism of abduction can be used to explain "why the given observations were not predicted by the initial knowledge" (Hernandez-Orallo and Garcia-Varea 1998). Peirce provided the following form for abductive logic:

> The surprising fact, C, is observed.
> But if A were true, C would be a matter of course.
> Hence, there is reason to suspect that A is true.

By "matter of course," logicians often mean a paradigm, what we would call a common-sense theory or background theory. However, for any observation (C), any number of background theories (A) may exist, and the archaeologist must select the best one.

Each of these forms of inference has different relations between truth and validity. As such, in each of the three, there are ways to strengthen or weaken an argument. In a deductive argument, validity can be determined by truth. If the premises are true, a valid deduction guarantees the truth of the conclusion. As already mentioned, deduction is not as useful in archaeology, as the truth conditions of the premises cannot always be determined. However, using the rules of inference, we can examine if the conclusion follows from the premises; that is, if the argment is valid. An argument can be true, valid both, or neither (Fig. 7.5).

	True	Not true
Valid	P: Students may use all tools P2: The total station is a tool C: Students may use the total station	P: All archaeologists dig regularly P2: Obama is an archaeologist C: Obama digs regularly
Not valid	P: Kenyon excavated Jericho P2: Jericho has a tower C: Kenyon is a woman	P: Obama is an archaeologist P2: Jericho has a tower C: Obama has a tower

Figure 7.5: Examples of arguments that are true, valid, both, and neither

When dealing with abductive arguments, we cannot examine the truth conditions of premises beyond the statement of an observation (but see 7.4.2.4). There is an entire branch of philosophy dedicated to the logic and validation of abductive arguments, and this is called pragmatism. The conclusions of valid argments follow from the premises, and can be seen as strong or weak, depending on the degree to which the conclusion follows logically from the premises. Truth conditions cannot be placed on a grayscale, but validity is a continuum.

7.4.2.1 Archaeology is not a formal language

In a formal language, the act of interpretation is an assignment of a desired meaning to arbitrary symbols. The logic of a formal language is the valid manipulation of these symbols. Formal languages are useful to scientists as they are a kind of idealization or representation of correct reasoning in a natural language (the sort of language used in conversation, or writing). Archaeological practice is neither a formal language, nor even a natural language, as the way in which symbols are interpreted widely differs. Instead of arbitrarily choosing a symbol, archaeologists recognize a symbol, and attempt to discover its past meaning. In forming arguments, archaeologists still use logical connectives to make valid relationships between propositions. There is more uncertainty in archaeological logic, but relationships can still be valid between uncertain premises.

7.4.2.2 Validity is a crucial element of archaeological interpretation

Validity in a formal language can be seen as a kind of mathematical model of proper reasoning. Archaeological practice has no intersection with formal language, as what legitimates scientific practice; neutrality, inevitability and truth (Wylie 2008: 209) are unattainable[10]. In Hodder's "interpretive archaeology," many different interpretations of evidence are possible, and they are all valid (Hodder 1991). This type of approach claims to try to reach a "best explanation" but is not truly following an abductive pattern of inference, as there is no allowance for levels of validity. Instead, we must look to the "epistemic virtues" in our evaluation of the validity of an abductive argument: empirical adequacy,

[10] I would argue that these attributes are impossible in any applied science.

internal coherence, and explanatory probity (Wylie 2003: 32-34). These attributes help mediate between more or less probable and informative background theories. Thus, for archaeologists, validity has no codified model, but it is what differentiates between the possible and varied back ground theories (A) that explain the surprising observation (C). One role of interpretation is then to determine the strength, or validity, of inferences about archaeological evidence.

7.4.2.3 Evidence, theory and the personal experiences of the archaeologist are all implicit premises that shape arguments.

Evidence is not the "sole determinant of the outcomes of inquiry" (Wylie 1994: 558). Archaeologists also rely on the theoretical framework of the inquiry to form ideas about evidence. Past experiences, as well as personal and political biases, all inform the statement that will be made about evidence. Just as personal experience cannot be discounted in inquiry, neither can it be static. We must hold..."practice, as well as belief, open to revision in light of experience" (Wylie 2000: 234). So, another role of interpretation is to mediate both the evidence and the theory to arrive at a best explanation.

7.4.2.4 Archaeological arguments can be pragmatically valid

The conclusion of an abductive inference is often referred to as a hypothesis. As "...no hypothesis is ever completely verified, in accepting a hypothesis the scientist must make the decision that the evidence is sufficiently strong or that the probability is sufficiently high to warrant the acceptance of the hypothesis..." (Rudner 1953: 2). In the absence of objective verification, contextual analysis and probability determinations help the scientist reach decisions about the evidence and the hypothesis. This type of abductive logic is called pragmatism, and allows for validity in the absence of truth. Abductive validation is reasoning through successive approximation, and is strengthened through the addition of agreeing evidence, and through the dismissal of alternate explanations. Probable and informative background theories, or hypotheses, are contantly being ameliorated with the addition of information from new excavations. The main role of interpretation in inference is to examine the context and probability of each of the premises, in order to highlight those assumptions that would be most fruitful to pursue. Other roles of interpretation are to determine the validity of inferences about archaeological evidence and to mediate both the evidence and the theory to arrive at a best explanation. Interpretation is a process that begins before any evidence is placed before the archaeologist. Final interpretations are possible with respect to finite data sets, and are evaluated with resect to pragmatic validity.

7.5 Assessment

This section aims to evaluate both the methodology and model created for the interpretive analysis of ritual acts in the Early Neolithic of the Near East. I will first discuss how and how well the two main goals of the inquiry (to provide a means for the robust assessment of a ritual explanation for an object; and to be able to produce a broader understanding of ritual activity in the Early Neolithic of the Near East) were addressed. I will then describe how informative the analyses chosen as part of the model were, and then what alterations could improve the results. Finally, I will evaluate the efficacy and pertinence of the results to my model.

7.5.1: The premise that all framed acts are not necessarily structured deposits was supported.

Not all depositions considered as structured deposits according to the model in Chapter 5 survived analyses. Of particular note are the articulated fish vertebra and obsidian chip in the mortar of a wall at Boncuklu. Considered within several contexts, there are no similar deposits and, due to the small size, may be considered accidental. The positioning and association of these two objects led to their being highlighted as potentially framed acts, but further analysis found no pattern within the site, across the Konya Plain, or at any place or time during the Neolithic of the Near East. The invisible placement of objects in walls, particularly broken ground stone implements and reliefs is known from later sites such as Çayönü and Basta. The placement of objects in walls may have functioned to symbolically strengthen walls (Gebel 2002), provide a place upon which to focus attention (Hermansen 2002) or to facilitate supernatural incursion (Hodder 2006). Obsidian is related with walls, though almost always multiply and in a shallow pit near a wall, rarely in a wall (the exception at Jerf el-Ahmar has been difficult to corroborate). A systematic study of fish remains as specially deposited objects has not been undertaken, so there is no previous research to corroborate or dispute any conclusions. There is no association of fish bone with obsidian outside of larger cluster events. Depositions in mortar between bricks are extremely rare. Thus, the “framed” deposition of fish vertebrae with an obsidian chip is not to be considered a structured deposition, as it fits into no known structure.

There are many levels at which a contextual analysis takes place. Intra-site analysis can identify group-specific practices, while looking at contemporary sites within a reasonable radius may point to larger local practices. When there is no pattern into which a practice fits, be it locally, regionally, or across wider gaps in space or time, then we must reject the supposition that the behaviour can be identified as ritual. If we can have recourse to ritual explanations on the basis of formalized repetitiveness, and there is no evidence for formal, repeated behaviour, then we cannot make any deductions about ritual activity. The contrapositive of the first premise asserts the very premise on which the Richards and

Thomas paper proceeded (1984). Working backwards from their conclusion: Some ritual is visible in the archaeological record (3.). Patterning causes visibility in the absence of other factors (2.). Some ritual activity is patterned (1.).

1. Some R -> P
2. P -> V
3. Therefore, some R -> V

Looking to the contrapositives:

4. ~V -> ~some R If something is not visible, then it's not *some* ritual activity. It may still be *other* ritual activity. Simply knowing that x cannot be seen does not allow us to make a valid judgement as to its ritual nature.
5. ~V -> ~P. Patterns are something we see, makes perfect sense.
6. ~P -> ~some R. If it's not patterned, then it's not *some* ritual activity. Again, activity that is not patterned may still be ritual, but like [4.], it is not within the scope of this inquiry.

This may be considered the main limitation of this model: that truly "odd deposits" with no resemblance to anything in the archaeological record cannot be considered ritual. It doesn't follow that a particular non-patterned act cannot be ritual, only that it cannot be identified as such on the basis of this model. This is mitigated by the ever-growing body of data which can be used as comparanda.

The decision to begin analysis with framed objects does not preclude the consideration of "clearly functional" objects which show the likely intervention of human cognition contrary to regular practice.

7.5.2 Were the correct analyses chosen?

Other possible methodologies were discussed and discharged in chapter 3, while other models received similar treatment in 5.4. The analyses emerged from the attributes chosen for inclusion in the database. It was important to separate out the different types of analyses in order to examine the data at different levels of complexity. The entire dataset was considered as a whole as a kind of control sample. The dataset was then broken up according to attribute, chronologically, or geographically, and re-analysed. The numbers, ratios and statistical significance of the associations were considered in the analyses. While sometimes seemingly random groupings of attributes were compared, their combination followed a logical ordering (such as grouping together hidden contexts or geographical areas at high elevations) and added to the richness of the analyses.

This method could easily be adapted to serve many different types of archaeological studies, especially those dealing with empirically under-determined aspects of prehistory. Changing the contextual attributes (those input in to the database) to better reflect the

types of questions asked of different data is a simple matter. In general, this method served the purposes of the inquiry well enough, though with minor modifications it could be even more effective.

7.5.3 What changes would improve the results of the methodology?

The methodology was overall, quite fruitful. The majority of the improvements I recommend would occur at the quantification stage; and likely result from my own amateurish handling of the software. Other problems arise from the types and availability of data, rather than from the methodology. Improving the mechanical attributes of the database would allow for a more nuanced description of deposits. For example, if the main material selected was human bone, then another set of drop-down boxes would appear to allow for the choice of element. In addition, several materials and orientations had not been entered as options at the beginning of the data entry process, so an easy refinement to the database would be by adding these to the drop-down lists (*e.g.* ochre, upside-down).

Another improvement would be greater codification of the attributes that determine if a deposit is counted as a ritual act at the end. Right now the analysis is so incredibly context specific, but perhaps more general guidelines could be extrapolated from the results.

7.6 Future Work

The immediate significance of an understanding of ritual action during a crucial developmental area in human chronology is clear. Understanding the way in which human persons form substrates for the codification and sharing of symbolic knowledge informs both our relationships to our surroundings, other persons, and to ourselves. Further implications for modern psychology and anthropology may be boundless. The relationship between symbolic activity during the transition to "Neolithic" economies and its fluorescence during the Upper Palaeolithic "symbolic revolution" would be an excellent follow-up research project. Given permission, I would like to use a Wiki compiler to put the database online, with the option of registering users who would be able to add their own data, and query accordingly.

Often, the reasons for calling a deposit the result of ritual activity are unclear. In certain instances one can point to this model as a reason to call a deposit ritual, rather than relegate something partially understood to the hamper full of unknowns. This is only one way in which the value of identifying structured depositions as a form of ritual is demonstrated. Much ritual behaviour is unavailable to archaeologists. What is clear to the anthropologist engaging in fieldwork is impossible for the archaeologist without recourse to ancient minds. With this model, at least one aspect of prehistoric ritual becomes more accessible.

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Appendix 1: Site size and extent

Site name	Size (ha)	Altitude(m asl)
	Levant	
Eynan/Mallaha	0.2	-
Nahal Oren	0.2	50
Salibiya I		-230
Hatula	0.2	200
Beidha	0.4	1000
Wadi Feynan 16	-	50
Nahal Hemar	-	53
Es-Sifiya	10	200
Gesher	<1	-245
‘Ain Ghazal	4.5-10	720
Kfar HaHoresh	0.6	2
‘Ain Jammam	6-8	-
Aswad	5	600
Basta	14	1420-1460
Zagros and Northern	*Mesopotamia*	
Zawi Chemi Shanidar	<1	425
Karim Shahir	0.8	850
M’lefaat	-	290
Nemrik 9	1.8	345
Qermez Dere	0.6	2
Ganj Dareh	0.13	1400
Ginnig	0.6	-
	Batman	
Hallan Cemi	7	640
Demirkoy	-	560
Kortik tepe	0.5	515
	Euphrates	
Mureybet	3.5	300
Abu Hureyra	12	250
Jerf el-Ahmar	-	-
Cheikh Hassan	-	300
Tell ‘Abr	<1	800
Cayonu	2-3	832
Cafer höyük	0.5	670
Dja’de	-	20
Boytepe	0.75	1100
	Urfa	
Gobekli tepe	4	800
Gritille	0.32-1.5	426
Nevali Cori	1	490
	Cappadocia	
Asikli hyuk	4	1145
Kosk höyük	0.5	1400

	Konya Plain	
Boncuklu	1	1000
Pinarbasi	<0.25	1085
Catalhoyuk	13	1020
Can Hassan III	0.85	1140
	Lake District	
Hacilar	1.6	920
Hoyucek	1.13	870
Kurucay	0.5	935
Bademagaci	2.5	780
Surbede	0.5	1050
Erbaba	0.5	115
	Thrace	
Asagi Pinar	2	130
Hoca Cesme	4 (80x70m) (0.5)	-
Ilipinar	3	112
	Aegean	
Ulucak höyük	<2	220

Appendix 2: Site dating

region	site name	phase	lab code	BP	±	Location	material	refs
Thrace								
	Asagi Pinar	6	bln 4996	6909	48	8L/69	cereal	Gosdorf 2005
	Asagi Pinar	6	bln 4997	6781	39	8L/61-62	cereal	Gosdorf 2005
	Asagi Pinar	6	bln 5218	6765	29	8P/APA house	oak	Gosdorf 2005
	Asagi Pinar	6	bln 5219	6752	34	8P/ APA	oak	Gosdorf 2005
	Asagi Pinar	6	bln 4992	6625	38	8P/APA house	Charc	Gosdorf 2005
	Asagi Pinar	5	bln 4858	6374	48	12R/35	Charc	Gosdorf 2005
	Asagi Pinar	5	bln 4857	6364	47	12R/37	Charc	Gosdorf 2005
	Asagi Pinar	5	bln 4703	6342	43	14K/76.84	Charc	Gosdorf 2005
	Asagi Pinar	5	bln 4856	6341	34	12R/33	Charc	Gosdorf 2005
	Asagi Pinar	5	bln 4855	6324	46	12R/31	Charc	Gosdorf 2005
	Asagi Pinar	4 or 5	bln 4988	6322	34	13 M/114.4	Charc	Gosdorf 2005

Asagi Pinar	4 or 5	bln 4854	6282	45	12R/29	Charc	Gosdorf 2005
Asagi Pinar	4 or 5	bln 4998	6280	42	14K/89.3.7	Charc	Gosdorf 2005
Asagi Pinar	4	bln 4608	6305	44	13 M/ 44	Cha	Gosdorf 2005
Asagi Pinar	4	bln 4859	6267	48	13M/ 76.1	Cha	Gosdorf 2005
Asagi Pinar	4	bln 4852	6260	40	13M/88	Cha	Gosdorf 2005
Asagi Pinar	4	bln 4999	6212	37	7N/33.2	Ch	Gosdorf 2005
Asagi Pinar	4	bln 4860	6209	42	15I/194	Ch	Gosdorf 2005
Asagi Pinar	4	bln 4853	6189	34	13M/91	Ch	Gosdorf 2005
Asagi Pinar	4	bln 4607	6107	51	13M/44/1	Ch	Gosdorf 2005
Asagi Pinar	3 or 4	bln 4702	6054	41	15K/111	acorn	Gosdorf 2005
Asagi Pinar	3	kia 19258	6320	50	13H/148 B44	barley	Gosdorf 2005
Asagi Pinar	3	kia 19257	6242	30	9R/66.3 B101	cereal	Gosdorf 2005
Hoca Cesme	II	grn 19356	6520	110	wrong	CH	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	II	grn 19782	6890	60		CH	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	II	grn 19310	6890	280	wrong	CH	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	II	grn 19781	6900	110	wrong	CH	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	II	grn 19780	6920	90		CH	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	II	grn 19311	6960	65		CH	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	III	hd 16726-17084	7005	33			Karul 2000 Thissen 2002a
Hoca Cesme	III	hd 16727-17038	7028	50			Karul 2000 Thissen 2002a
Hoca Cesme	III	grn 19357	7135	270	wrong	Charc	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	III	hd 16724-17186	7239	29			Karul 2000 Thissen 2002a
Hoca Cesme	IV	grn 19355	7200	180	wrong	Charc	Özdoğan, M. 1993 Özdoğan, M. 1997b Karul 2000 Thiss
Hoca Cesme	IV	grn 19779	7360	35		charc	Karul 2000 Thissen 2002a
Hoca Cesme	IV	hd 16725-119145	7496	69			Karul 2000 Thissen 2002a
Hoca Cesme	IV	bln 4609	7637	43			Özdoğan, M. 1997b Karul 2000 Thissen 2002a
Iznik							
Mentese	e chal	grn 22790	6800	90			Roodenbergs 2013; Böhner n Schyle 2002-2006
Mentese	e chal	grn 22789	6630	90			Roodenbergs 2013; Böhner n Schyle 2002-2006
Mentese	3top	grn 24462	7050	35	jk15	charc	Thissen 1999 Thissen 2002a Roodenberg et al. 2003
Mentese	3mid	grn 25824	7230	40	ssk15	charc	Roodenberg et al. 2003; Thissen et al. 2004-2006; Böhn
Mentese	3mid	grn 25823	7260	25	ash n chrc	charc	Roodenberg et al. 2003; Thissen et al. 2004-2006; Böhn
Mentese	3mid	grn 25822	7310	40	im blw flor	charc	Roodenberg et al. 2003; Thissen et al. 2004-2006; Böhn
Mentese	3low	grn 25819	7550	50	near virgin	charc	Roodenberg et al. 2003; Thissen et al. 2004-2006; Böhn
Ilipinar	V b	grn 24458	6545	45	area 3 pot 25	seeds grain	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V b	grn 24460	6580	30	aea 3, dwelling	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V b	grn 22784	6585	25	aea 6 near hearth	char fig	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V b	grn 22783	6595	25	area 6 near hrth	char grain	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V b	grn 22782	6605	25	area 5, pot 7	seeds	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V b	grn 22042	6610	30	area 2, below oven	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V a	grn 21213	6610	45	ar 4, ctyrd	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V a	grn 21214	6650	40	ar 7, floor	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	V a	grn 22044	6670	40	area 12, erosion	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n

Ilipinar	V a	grn 22041	6720	30	area 3	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	VIII	grn 19353	6880	30	area 74, ctrd	chrac	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	VIII	grn 16144	6935	35	ar 6, ctyrd	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	VIII	grn 17056	6950	45	ar 11, destr	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	VIII	grn 17055	6980	45	a20, destr lay	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	VIII	grn 17054	6990	30	a13, dest lay	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	IX	grn 17051	6960	45	a1, house dest	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	IX	grn 17052	6995	45	a3 hs dest	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	IX	grn 19354	7165	35	a65 mud hs dest	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 24614	6990	40	15, hsfloor	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 22788	6990	35	107, ctyrd	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 24615	7010	40	area 106	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 19793	7020	40	burnt hs rubble	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 17045	7025	30	brnt rbble	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 24613	7060	60	106, troddn	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 19352	7065	35	a78 bnt hs	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 19795	7100	40	bnt hse	seeds	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 17046	7100	30	s9 bnt rub	seeds	Roodenberg and Schier 2001; Thissen 2002a; Böhner n
Ilipinar	X	grn 19351	7195	40	a73 bnt hs	charc	Roodenberg and Schier 2001; Thissen 2002a; Böhner n

West Lakes

Kurucay	6						
Kurucay	11	hd 12917-12830	7045	95		bone	erdogu et al 2003; Böhner n Schyle 2002-2006
Kurucay	12	hd 12916-12674	7140	35		bone	erdogu et al 2003; Böhner n Schyle 2002-2006
Kurucay	13	hd 12915-12673	7310	70		bone	erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	V neolit	bm 127	8700	180		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	IX	p 314	7340	94		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	VII	bm 125	7770	180		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	VI	bm 48	7550	180		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	VI	p 313a	7350	85		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	VI	aa 41602	7468	51		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	VI	aa 41603	7452	51		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hacilar	VI	aa41604	7398	63		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hoyucek	esp 2	utc 3793	7393	38		bone	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hoyucek	shrine	hd 14007	7556	45		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hoyucek	shrine	hd 14002	7551	46		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Hoyucek	shrine	hd 13822	7349	38		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	8	hd 22340	7049	31		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	4A	hd 22279	7465	27		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	4	hd 21016	7424	37		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	4	hd 21015	7481	40		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	3A	hd 22339	7553	31		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006

Bademagaci	3	hd 21058	7459	51		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	3	hd 20910	7546	41		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006
Bademagaci	1	hd 21046	7307	41		charc	Erdogu et al 2003; Böhner n Schyle 2002-2006

Konya Plain

Pinarbasi	oxa 5499	9050	80	feature ABJ	charc	watkins 1996; Böhner n Schyle 2002-2006
Pinarbasi	oxa 5501	9104	80	feature ABU	charc	watkins 1996; Böhner n Schyle 2002-2006
Pinarbasi	oxa 5500	9290	80	feature ABR	charc	watkins 1996; Böhner n Schyle 2002-2006
Pinarbasi	ozh 786	8680	70	ADK	almond	Fairbairn et al 2014
Pinarbasi	ozh 787	8860	70	ADK	almond	Fairbairn et al 2014
Pinarbasi	ozh 789	8920	70	ADN	almond	Fairbairn et al 2014
Pinarbasi	ozh 788	9060	60	ADN	almond	Fairbairn et al 2014
Pinarbasi	wk 30798	5025	34	ADT	wheat	Fairbairn et al 2014
Pinarbasi	ozn 584	9300	60	AER	almond	Fairbairn et al 2014
Pinarbasi	wk 30797	5039	27	AFC	wheat	Fairbairn et al 2014
Pinarbasi	wk 29760	9536	36	AFC	almond	Fairbairn et al 2014
Pinarbasi	wk 32872	9475	42	AFJ	almond	Fairbairn et al 2014
Pinarbasi	wk 32873	9409	30	AFT	almond	Fairbairn et al 2014
Pinarbasi	wk 29761	8918	34	AFR	hackberry	Fairbairn et al 2014
Pinarbasi	wk 32874	9577	28	AHA	almond	Fairbairn et al 2014
Pinarbasi	wk 34089	8845	41	DCL	almond	Fairbairn et al 2014
Pinarbasi	wk 34090	4719	25	DCL	barley	Fairbairn et al 2014
Pinarbasi	ozn 583	8900	60	DCP	almond	Fairbairn et al 2014

Can hassan III no good dates yet

Catalhoyuk	kopal	oxa-9772	8025	55	unit 6075	trit seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	kopal	oxa-9944	7975	50	un 6075	seeds	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	kopal	oxa-9771	7965	55	un 6013	char trit seeds	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	kopal	oxa-9943	7910	55	un 6013	char trit seeds	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	kopal	oxa-9945	7775	50	un 6079	ch scirpus seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9778	8240	55	un 5342	trit, pis seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9777	8160	50	unit 5323	lens seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9893	8155	50	unit 5329	char cereals	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9893	8150	50	unit 5317	lens seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9949	8050	50	unit 4848	pisum seed ch	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9950	8030	50	unit 5276	trit, pisum seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	pre XII	oxa-9776	7985	55	un 5292	scirpus seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	XII	oxa-9947	7985	50	unit 4822	trit hord scirp	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	XII	oxa-9775	8090	55	unit 4826	trit hord	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	XII	oxa-9948	8090	50	unit 4826	tri hord char	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	XI	oxa-9774	7935	50	unit 4715	sciprus	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	XI	oxa-9946	7980	55	unit 4715	scirpus seed	Cressford 2001; Thissen 2002a; Böhner n Schyle 2002-2
Catalhoyuk	IV	aa-18104	8065	50		junip charc	Newton and Kuniholm 1999; Thissen 2002a; Böhner n S
Catalhoyuk	IV	aa-19347	7998	54		junip charc	Newton and Kuniholm 1999; Thissen 2002a; Böhner n S

Catalhoyuk	IV	aa-19348	7982	52		junip charc	Newton and Kuniholm 1999; Thissen 2002a; Böhner n S
Catalhoyuk	IV	aa-19350	7918	54		junip charc	Newton and Kuniholm 1999; Thissen 2002a; Böhner n S
Catalhoyuk		oxa-11052	7860	45	b1, ph 1b	hum bone	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11051	7855	45	b1, ph 2b	hum bone	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11048	7800	50	b1 ph 4	hum bone	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11047	7790	50	b1 ph 4	hum bone	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa 11042	7785	45	b1 ph1b	trit hord seed	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11028	7780	40	b1 ph2b	cereals	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11050	7775	50	b1 ph 2c	hum bone	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11032	7765	40	b1 ph 2c	seeds	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11049	7760	50	b1 ph 2c	hum bone	Thissen et al 2004-2006; Böhner n Schyle 2002-2006
Catalhoyuk		oxa-11183	7750	45	b1 ph 4	seeds	Thissen et al 2004-2006; Böhner n Schyle 2002-2006

Cappadocia

Asikli hoyuk	2 c-a	grn 19366	8400	40	sq 3P, ct HG	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Özbaşa
Asikli hoyuk	2 c-a	grn 19365	8420	30	sq 3P, court HG	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Özbaşa
Asikli hoyuk	2 c-a	grn 19114	8515	40	5L room CY	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19868	8530	110	7J, open area JA	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 20355	8550	60	3R, rm NM	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Özbaşa
Asikli hoyuk	2 c-a	grn 20356	8560	60	enc wall, rm NV	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 20041	8575	20	6N, room KY	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19862	8580	50	3P, area HK	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Özbaşa
Asikli hoyuk	2 c-a	grn 19364	8585	45	3P, area HK	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Özbaşa
Asikli hoyuk	2 c-a	grn 19121	8590	80	2K, room AN	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19361	8595	60	6J, rm GD	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 18619	8610	55	2R, rm AA	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19362	8630	30	6J, rm GD	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19867	8630	50	2R, rm LS	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19863	8640	20	7L open JA	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 20351	8670	40	5J rm BI	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19861	8670	60	7J open JA	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19115	8710	100	4J, rm EN	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 20354	8710	70	4J, rm EN	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 20684	8720	70	14a-b, rm NV	charc	Esin 1995 Esin 1998 Thissen 2002a
Asikli hoyuk	2 c-a	grn 20352	8720	40	4K, rm CK	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 18620	8720	55	3J, rm AM	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19870	8720	80	6N, rm KY	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19860	8720	50	7J, open JA	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 18618	8725	50	3J, room I	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 18617	8730	45	4G-H rm E	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19869	8740	70	60, rm LB	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19118	8760	45	2K, rm AN	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19119	8760	40	2K, AN	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2 c-a	grn 19116	8920	110	2K, AN	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2b-2c	grn 19358	8550	70	wkshp S	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2b-2c	grn 19359	8570	70	wkshp S	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen

Asikli hoyuk	2b-2c	grn 19363	8675	25	4H, C	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2b-2c	grn 19360	8695	25	4H, C	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2d-2e	grn 19866	8560	40	4H, JV	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2d-2e	grn 19858	8770	90	4H, JY dmp	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2d-2e	grn 19865	8880	160	4H, JY dmp	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2g-2h	grn 20353	8740	60	4G, rm MS	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	2g-2h	grn 20349	8840	50	4H, MS	charc	Esin 1995 Esin 1998 Esin and Harmankaya 1999 Thissen
Asikli hoyuk	base	p 1239	8611	108	nw cut, burnt	charc	Todd 1968a Stuckenrath and Lawn 1969 Thissen 2002a
Asikli hoyuk	base	hd 19640	8882	40	nw cut	charc	Kuniholm 1999 Thissen 2002a
Musular		grn 27155	8200	50	bld Z	bone	ozbasaran et al 2013 Musular
Musular		grn 25901	8540	50			ozbasaran et al 2013 Musular
Musular		kia 30926	8450	45			ozbasaran et al 2013 Musular
Musular		grn 24924	8420	110	D 11	bone	ozbasaran et al 2013 Musular
Musular		kia 30924	8325	40			ozbasaran et al 2013 Musular
Musular		kia 31073	8320	30			ozbasaran et al 2013 Musular
Musular		grn 27157	8310	45	M14 butcher	bone	ozbasaran et al 2013 Musular
Musular		grn 24918	8300	90	n13	charcoal	ozbasaran et al 2013 Musular
Musular		grn 29632	8285	55			ozbasaran et al 2013 Musular
Musular		grn 25900	8280	50			ozbasaran et al 2013 Musular
Musular		grn 29631	8240	55			ozbasaran et al 2013 Musular
Musular		grn 25461	8130	180	n13	charcoal	ozbasaran et al 2013 Musular
Musular		grn 27156	8150	45	M14 butcher	bone	ozbasaran et al 2013 Musular
Musular		grn 25611	8060	180	n13	charcoal	ozbasaran et al 2013 Musular
Musular		grn 235 18	7980	220	D 11	charcoal	ozbasaran et al 2013 Musular
Kosk hoyuk	lev I	oxa 6745	5945	80	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	oxa 6790	5950	55	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	aa 42690	6045	52	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	aa 42688	6086	51	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	aa 42685	6087	50	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	aa 42689	6131	52	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	oxa 6821	6180	65	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	aa 42687	6220	52	room 1	juniper charc	Thissen et al 2001, Thissen 2002a
Kosk hoyuk	lev I	aa 42686	6221	68	room 1	juniper charc	Thissen et al 2001, Thissen 2002a

Urfa

Gobekli tepe	II	ua 21415	7450	85	wall stone	ped. Carb.	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 42213	8860	80		bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 42209	5775	25		bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia42208	8380	40	enc F	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia42207	7830	35		bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 42206	6745	30		bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 38007-b	6475	37	enc B	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 38006	6620	32		bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 28406	7600	60	pillar XI	ped carb	dietrich 2011, Benz PPND

Gobekli tepe	II	kia 28033	7180	40	gap pil XI	ped carb	dietrich 2011, Benz PPND
Gobekli tepe	II	kia 26169	8440	40	lion out wall	ped card lam	pustovoytov et al. 2007, Benz PPND
Gobekli tepe	II	kia26168	8625	45	lion wall	ped carb lam	pustovoytov et al. 2007, Benz PPND
Gobekli tepe	II	igas 2658	8880	60		humic acids	dietrich 2011, Benz PPND
Gobekli tepe	III	ua 19562	8960	85	enc B, near p8	ped. Carb. Lam.	pustovoytov et al. 2007, Benz PPND
Gobekli tepe	III	ua 19561	8340	80	enc C near P11	ped carb lam	pustovoytov et al. 2007, Benz PPND
Gobekli tepe	III	kia 44149	9984	42	enc D	CH in plaster wall	dietrich schmidt 2011, Benz PPND
Gobekli tepe	III	kia 42221	9230	130	enc B	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42219	9120	50	enc D	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42218	8950	65	enc D	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42216	7735	40	enc D	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42212	8665	45		bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42210	8370	35	enc D	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42205	9000	65	enc B	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 42204	8475	60	enc B	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 38008	8930	45	enc D	bone/apatite	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 38007-a	9065	35	enc B	bone/collagrn	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 28965	8485	40	enc D	ped carb	dietrich 2011, Benz PPND
Gobekli tepe	III	kia 26021	9020	30	enc A	ped carb lam	pustovoytov et al. 2007, Benz PPND
Gobekli tepe	III	kia 25467	9290	70	enc A	ped carb lam	pustovoytov et al. 2007, Benz PPND
Nevali Cori	I	oxa 8236	8960	60	G8, house 25, b90	hum bone	canew; Benz PPND
Nevali Cori	I	oxa 8235	9180	60	g8, h25, b89	hum bone	canew; Benz PPND
Nevali Cori	I	oxa 8303	9280	55	Fg5, h 21a, rm 4, burial 86	hum bone	canew; Benz PPND
Nevali Cori	I/II	hd 16781-835	9261				morsch 2002; Benz PPND
Nevali Cori	I/II	hd 16782-351	9243	55		cereal	morsch 2002; Benz PPND
Nevali Cori	I/II	hd 16783-769	9212	76		cereal	morsch 2002; Benz PPND
Nevali Cori	II	oxa 8234	8930	60	area fg, h 25, rm 2, burial 81	hum bone	canew; Benz PPND
Nevali Cori	IIIA	oxa 8382	8990	90	b75, h 7, rm 9	hum bone	canew; Benz PPND
Nevali Cori	IIIA	oxa 8381	8710	100	b61, house 2	hum bone	canew; Benz PPND
Nevali Cori	IIIA	oxa 8302	9205	55	b55, h2, rm 10	hum bone	canew; Benz PPND
Nevali Cori	IIIB	oxa 8247	8610	90	b72, house 6	hum bone	canew; Benz PPND
Nevali Cori	IIIV	kia 14763	8381	157	f5, pit 249		canew; Benz PPND
Nevali Cori	IIIV	kia 14762	9207	43	g7 pit 314	anim bone	canew; Benz PPND
Nevali Cori	IIIV	kia 14761	8778	46	f5, pit 176	anim bone	canew; Benz PPND
Nevali Cori	IIIV	kia 14760	9100	43	f5 pit 217	anim bone	canew; Benz PPND
Nevali Cori	IIIV	kia 14759	8213	132	h4n, spit 29		canew; Benz PPND
Nevali Cori	IIIV	kia 14758	8864	48	f7, pit 291	anim bone	canew; Benz PPND
Nevali Cori	IIIV	kia 14757	9020	41	g4/5, house 1	anim bone	canew; Benz PPND
Nevali Cori	IIIV	kia 14756	9263	42	h5, pit 277	anim bone	canew; Benz PPND
Gritille	B	beta 8241	7860	80	B, op 16 hearth	charc	Voigt 1988; Stein 1992; Thissen 2002a
Gritille	B	grn 15255	8000	50	B, op 50 roast pit	charc, querc	Stein 1992 Thissen 2002a
Gritille	C	grn 15247	8075	40	C, op 50 shal pit	charc	Stein 1992 Thissen 2002a
Gritille	C	beta 13216	8610	90	C, op 16, pit	pist charc	Voigt 1988 Thissen 2002a

Gritille	D	grn 15250	8230	100	deep pit	charc	Thissen 2002a
Gritille	D	grn 15248	8280	100	roast pit	charc	Thissen 2002a

Batman central

Hallan Cemi		oxa-12298	9980	60	2/6H	pistacia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12299	10020	45	14/6G	lathyrus/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12328	9960	45	1/5G	pistacia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12329	10085	45	3/6H	pisum/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12330	9980	45	4/5H	amygdalus	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12331	9975	45	5/5H	amygdalus	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12332	9935	45	6/6E	pisum/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12333	10050	45	7/6E	lathyrus/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12334	9970	45	8/5H	scirpus marit.	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12335	9995	40	9/5H	lathyrus/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12336	10020	40	10/5G	pistacia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12337	9965	40	13/6G	pisum/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12338	9970	40	17/6F	pisum/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12339	9955	40	18/6F	lathyrus/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12340	9980	40	19/6F	amygdalus	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12341	10045	45	21/6F	amygdalus	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12769	10010	40	16/6F	lathyrus/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12878	9535	75	12/6G	lathyrus/vicia	Higham et al. 2007; Benz PPND
Hallan Cemi		oxa-12979	9560	100	15/6G 12 1810	Lathyrus/Vicia	Higham et al. 2007; Benz PPND
Demirkoy		oxa 12488	9930	50	2K	lathyrus/vicia	Higham et al. 2007; Rosenberg 2011:80; Benz PPND
Demirkoy		oxa 12489	9890	45	2L	lathyrus/vicia	Higham et al. 2007; Rosenberg 2011:80; Benz PPND
Kortik tepe	VIII	eth 45340	10030	40	a80, c5	dicot	Coskun et al. 2012:28; Benz PPND
Kortik tepe	VI	eth 39509	9960	60	a80, c5	CH, salix	Benz et al. 2010; Benz PPND
Kortik tepe	V	eth 39512	9955	45	a80	CH, tamarisk	Benz et al. 2010; Benz PPND
Kortik tepe	V	eth 38848	9985	40	a80	CH, quercus	Benz et al. 2010; Benz PPND
Kortik tepe	IV	eth 38853	10015	45	a80	CH amygdalus	Benz et al. 2010; Benz PPND
Kortik tepe	IV	eth 38854	10000	40	a84	CH populus	Benz et al. 2010; Benz PPND
Kortik tepe	IV	eth 38855	10040	40	a 84	CH	Benz et al. 2010; Benz PPND
Kortik tepe	III	eth 38851	10075	40	a84	CH tamarisk	Benz et al. 2010; Benz PPND
Kortik tepe	III	eth 39511	10100	60	a80	CH rhamnus	Benz et al. 2010; Benz PPND
Kortik tepe	II	eth 38849	10065	40	a80	Ch quercus	Benz et al. 2010; Benz PPND
Kortik tepe	II	eth 38850	10035	40	a80	CH pistacia	Benz et al. 2010; Benz PPND
Kortik tepe	II	eth 38852	9965	45	a84 dest lev	CH tamarisk	Benz et al. 2010; Benz PPND
Kortik tepe	I.2/II	eth 39510	9925	45	a80	CH tamarisk	Benz et al. 2010; Benz PPND
Kortik tepe	?	beta 178241	8370	40		anim bone	ozkaya n coskun 2007; Benz PPND
Kortik tepe	?	beta 178242	9870	40		anim bone	ozkaya n coskun 2007; Benz PPND
Kortik tepe		eth 45333	10155	50	a104, loc 5	CH	Coskun et al. 2012:28; Benz PPND
Kortik tepe		eth 45334	10205	40	a104, loc 5	populus/salix	Coskun et al. 2012:28; Benz PPND
Kortik tepe		eth 45336	10270	95	a104, loc 5.2	CH	Coskun et al. 2012:28; Benz PPND
Kortik tepe		eth 45344	10090	40	a80, c4	CH bark	Coskun et al. 2012:28; Benz PPND

	Kortik tepe		kia 44864	10252	60	a84, b-c5	rye seed	Özkaya and Coşkun 2011:103; Benz PPND
	Kortik tepe		eth 45335	10330	70	a104, loc 5.2	populus/salix	ozkaya n coskun 2007; Benz PPND
West Tigris								
	Cayonu	base	grn 8103	10430	80		CH	canew; Benz PPND
	Cayonu	base	grn 5953	9795	260		CH	canew; Benz PPND
	Cayonu	basalpits	grn 8079	9250	60		CH	
	Cayonu	basal pits	grn 6243	9320	55		CH	canew; Benz PPND
	Cayonu	basal pits	grn 8821	9175	55		CH	canew; Benz PPND
	Cayonu	r1	grn 19482	10230	200	30m	CH	canew; Benz PPND
	Cayonu	r1	grn 19481	10020	240	29m	CH	canew; Benz PPND
	Cayonu	r3	grn 10358	9180	80		CH	canew; Benz PPND
	Cayonu	r3	grn 10359	9050	40		CH	canew; Benz PPND
	Cayonu	r4	grn 10361	9290	110		CH	canew; Benz PPND
	Cayonu	r late	grn 10360	9300	140		CH	canew; Benz PPND
	Cayonu	I/II	hd 16781-835	9261	181		CH	Molist, Cauvin 1991; Benz PPND
	Cayonu	I/II	hd 16782-351	9243	55		CH	Molist, Cauvin 1991; Benz PPND
	Cayonu	I/II	hd 16783-769	9212	76		CH	Molist, Cauvin 1991; Benz PPND
	Cayonu	g1-4	grn 14861	9090	50	gh, outdoor	CH	canew; Benz PPND
	Cayonu	g1-4	grn 16462	9040	65	GTc bldng	CH	canew; Benz PPND
	Cayonu	ch	grn 13947	9240	50		CH	canew; Benz PPND
	Cayonu	ch	grn 13949	9205	45		CH	canew; Benz PPND
	Cayonu	ch	grn 14857	9155	35		CH	canew; Benz PPND
	Cayonu	ch	grn 14859	9170	50		CH	canew; Benz PPND
	Cayonu	ch	grn 14860	9040	35		CH	canew; Benz PPND
	Cayonu	ch	grn 14861	9090	50	GH, outdoor	CH	canew; Benz PPND
	Cayonu	ch	grn 6241	9275	95		CH	canew; Benz PPND
	Cayonu	ch	grn 6244	898	80		CH	canew; Benz PPND
	Cayonu	cob p	grn 13948	8910	50		CH	canew; Benz PPND
	Cayonu	cob p	grn 8820	8865	45		CH	canew; Benz PPND
	Cayonu	cob p	grn 6242	8795	50		CH	canew; Benz PPND
	Cayonu	cob p	grn 14862	8920	130		CH	canew; Benz PPND
	Cayonu	cell	grn 8078	8355	50	c1 3a-b	CH	canew; Benz PPND
	Cayonu	?	ucla 1703 b	8340	250		hum bone	canew; Benz PPND
	Cayonu		M 1609	8790	250		CH	canew; Benz PPND
	Cayonu		M1610	8570	250		CH	canew; Benz PPND
	Cayonu		hd 16784-768	9882	224	pit 227	CH	Molist, Cauvin 1991; Benz PPND
	Cayonu		grn 8818	8080	90	hearth	CH	canew; Benz PPND
	Cayonu		grn 5954	8055	75	fill	CH	canew; Benz PPND
	Cayonu		grn 4459	9200	60		CH	canew; Benz PPND
	Cayonu		grn 4458	9520	100		CH	canew; Benz PPND
	Cayonu		grn 16463	8040	60	ea floor	CH	canew; Benz PPND
north euphrates								
	Cafer hoyuk	XII	ly 4436	9560	190		CH	Molist, Cauvin 1991; Benz PPND

Cafer hoyuk	XI	ly 4437	8950	80	foyer 124	CH	Molist, Cauvin 1991; Benz PPND
Cafer hoyuk	VI	l7 3773	7900	190	foyer 33	CH	Molist, Cauvin 1991; Benz PPND
Cafer hoyuk	VI	ly 3772	8480	140	cell 65	CH	Molist, Cauvin 1991; Benz PPND
Cafer hoyuk	V	ly 3090	8920	160	E 1c	CH	Molist, Cauvin 1991; Benz PPND
Cafer hoyuk	IV	ly 3091	8980	150	D 3c intrus?	CH	Molist, Cauvin 1991; Benz PPND
Cafer hoyuk	IV	ly3089	8150	210	D1a	CH	Molist, Cauvin 1991; Benz PPND
Cafer hoyuk	IVc	ly2523	8600	120	west	CH	canew; Benz PPND
Cafer hoyuk	IVc	ly 2522	8400	220		CH	canew; Benz PPND

Mid euphrates

Akarcay	V	beta 138584	8750	40	27u, f c2	CH	canew, B-A 2002; Benz PPND
Akarcay	IV	beta 138583	8390	110	20p, f 24	CH	canew, B-A 2002; Benz PPND
Akarcay	III	beta 138586	7970	120	20N	CH	canew, B-A 2002; Benz PPND
Akarcay	II	beta 138582	7470	80	20M, f 21	CH	canew, B-A 2002; Benz PPND
Akarcay	I	beta 138585	7280	50	19k, f 9	CH	canew, B-A 2002; Benz PPND
Akarcay	?	beta 174035	8560	40	27y, f 65	?	Özbasaran and Duru 2011; Benz PPND
Akarcay		beta 174036	8260	40	27x, f 42		Özbasaran and Duru 2011; Benz PPND
Akarcay		beta 174037	8310	130	20p, f 66		Özbasaran and Duru 2011; Benz PPND
Akarcay		beta 174038	7930	40	28u, f 18		Özbasaran and Duru 2011; Benz PPND
Akarcay		beta 174039	7860	40	21o, f 42		Özbasaran and Duru 2011; Benz PPND
Akarcay		beta 174040	7690	50	19f, f 32		Özbasaran and Duru 2011; Benz PPND
Akarcay		beta 174041	8300	40	25u, f 29		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31913	8283	41	27u, f 118		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31914	8205	35	27u, f 108		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31915	8293	39	27u, f 90		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31916	8021	33	27u, f 106		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31917	8132	40	27u, f 120		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31918	8246	39	27u, f 113		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31919	8181	45	27u, f 108		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31920	8121	52	27u, f 108		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31921	8146	36	27V, f 40		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31022	8365	40	27X, f 123		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31923	8309	49	27X, f 115		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31924	8290	50	27X, f 116		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31925	7979	42	27T, f 43		Özbasaran and Duru 2011; Benz PPND
Akarcay		kia 31926	8199	34	29T, f 64		Özbasaran and Duru 2011; Benz PPND

mezraa-teleilat	IV	aa 49102	9324	59	21e	Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	IV	os 60304	8040	55	21d build be	Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III-IV	os 60150	8190	40	20c	Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III ?	ltl 2651 a	8016	45	20d	Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	aa 49103	8021	55	21e	Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	aa 49107	8001	55	21e	Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	aa 49106	7993	58	21e	Ozdogan 2013 Mezraa-Teleilat

mezraa-teleilat	III b	aa 49104	7977	54	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60149	7940	45	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60305	7940	50	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60538	7940	40	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60153	7900	40	21e blg ba		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60640	7790	35	23 g		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60151	7960	40	21 e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b	os 60152	8020	45	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b 2	aa 49105	7973	62	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	III b2	aa 49108	7926	69	21e		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II c	ansto oz 1355	8360	80	bldg ab		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II c 1	ltl 2649 a	7817	50	bldg bh		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II c1-b3	ltl 2645 a	7816	85	21h		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II c	ltl 2641 a	7439	35	20g		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II c1	ltl 2644 a	7444	55	bldg ar		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	IIc3	os 60735	7760	55	blg ab		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II b	aa 49099	7849	61	sndg 14k		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II b	aa 49101	7806	61	21f		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II b	aa 49100	7746	61	21f		Ozdogan 2013 Mezraa-Teleilat
mezraa-teleilat	II b3-b2	ltl 2640 a	7594	50	18h		Ozdogan 2013 Mezraa-Teleilat
***tell 'Abr**	no good dates						
***dja'de**	III	ly 10847	9210	55		chrac	Bischoff 2004-2006; Benz PPND
***dja'de**	III	ly 10846	9250	55		chrac	Bischoff 2004-2006; Benz PPND
***dja'de**	III	ly 8841	9280	60		chrac	Bischoff 2004-2006; Benz PPND
***dja'de**	III	ly 12112	9290	45		chrac	Bischoff 2004-2006; Benz PPND
***dja'de**	II	ly 11330	9410	50		chrac	Bischoff 2004-2006; Benz PPND
***dja'de**	I-II	ly 11329	9480	50		chrac	Bischoff 2004-2006; Benz PPND
***dja'de**	I-II	ly 12110	9570	50		chrac	Bischoff 2004-2006; Benz PPND
***jerf el-ahmar**		ly 10647	9395	55	EA 53		Stordeur and Abbès 2002; Benz PPND
***jerf el-ahmar**		ly 1579	9620	60	b 10, rm 2	seeds in situ in quern	Willcox 2002; Benz PPND
***jerf el-ahmar**		beta 71866	9740	60	area A		mottram 1997; Benz PPND
***jerf el-ahmar**		beta 71870	9810	60	area C2		mottram 1997; Benz PPND
***jerf el-ahmar**		ly 10651	9965	55	V east round hs		Stordeur and Abbès 2002; Benz PPND
***cheikh hassan**		none available					
***mureybet**	I	lv 608	10590	140	natufian	ch	Henry 1989

***mureybet**	Ib P32 B4	lv 607	10950	230		ch	Gilot et al 1973; Cauvin 1977; Schyle 1996
***mureybet**	II	P 1217	10215	117		ch	van Loon 1968; Cauvin 1977; Schyle 1996
***mureybet**	II or I base	P 1216	10092	118	natufian	ch	Stuckenrath and Lawn 1969; Cauvin 1978; Moore et al 1
***mureybet**	ph II, lev I	P 1215	10006	96		ch	Stuckenrath and Lawn 1969; Cauvin 1978; Moore et al 1
***mureybet**	IIa or X-XI	P 1220	9968	115	rect house	ch	Stuckenrath and Lawn 1969; Cauvin 1978; Moore et al 1
***mureybet**	IIb or XVI	P 1222	9921	114		ch	van Loon 1968; Stuckenrath and Lawn 1969; Moore et a
***mureybet**	II a	mc 616	9675	110	house XXII	ch	Cauvin 1977; Moore et al 1986; Cauvin 1987
***mureybet**	II b	mc 615	9540	110	S32 C 1	ch	Cauvin 1977; Moore et al 1986; Cauvin 1987
***abu hureyra**	LN	bm 1718 R	11140	110	E lev 303	ch	Burleigh et al 1982; Moore et al 1986; Goring Morris 19
***abu hureyra**	LN	oza 468	11090	150	E lev 326	bone bos	Moore et al 1986; Gowlett and Hedges 1987; Goring Mo
***abu hureyra**	LN	oxa 430	11020	150	E 316	bone gazelle	Schyle 1996; Moore et al 1986
***abu hureyra**	LN	oxa 474	10930	150	E 285	one ovis	Moore et al 1986; Gowlett and Hedges 1987; Goring Mo
***abu hureyra**	LN	oxa 469	10920	140	E 326	bone bos	Moore et al 1986; Gowlett and Hedges 1987; Goring Mo
***abu hureyra**	LN	bm 1121	10792	82	264-267	ch	Burleigh et al 1982; Moore et al 1986; Goring Morris 19
***abu hureyra**	LN	oxa 397	10420	140	E 286	seed trit	Moore et al 1986; Gowlett and Hedges 1987; Goring Mo
***abu hureyra**		oxa 1228	9680	90	G 68	ch	Gowlett 1987; Housley 1994
***abu hureyra**		bm 1719 R	9100	100	E 254	ch	Burleigh et al 1982; Moore et al 1986; Goring Morris 19
***abu hureyra**		oxa 881	8870	100	D 32, 77	bone ovicap	Moore et al 1986; Gowlett and Hedges 1987; Goring Mo
***abu hureyra**		oxa 2169	8640	110	ph 2 B218	seed trit	Moore et al 1986; Gowlett and Hedges 1987; Goring Mo
***abu hureyra**		bm 1722 R	8640	100	205 B4	ch	Burleigh et al 1982; Moore et al 1986; Goring Morris 19
***abu hureyra**		oxa 876	8500	90	D ph 1, lev 73	bone eq	Moore et a 1986; Gowlett and Hedges 1987; Housley 19
***abu hureyra**		bm 1721 R	8940	110	D3, l 129	ch	Burleigh et al 1982; Moore et al 1986; Goring Morris 19
***abu hureyra**		oxa 878	8490	110	D ph4, l 68	bone eq	Moore et a 1986; Gowlett and Hedges 1987; Housley 19
***abu hureyra**		oxa 2168	8330	100	E 340 ph 5	ch	Gowlett 1987; Housley 1994
***abu hureyra**		oxa 2167	8270	100	E 375 ph 4	seed	gowlett 1987; Housley 1994
***abu hureyra**		bm 1724 R	8020	100	E6 199	ch	Burleigh et al 1982; Moore et al 1986; Goring Morris 19
***abu hureyra**		oxa 1931	7890	90	G62 ph 2	seed	Gowlett 1987; Housley 1994; Bienert 2000
Mid Tigris							
***Ginnig**		none available					
***Qermez Dere**		oxa 3752	10145	90	cbr lower	lens seed	Archaeometry 38,1,1996; Benz PPND
***Qermez Dere**		oxa 3752	11990	100	cbr lower	seed	watkins et al 1995; Benz PPND
***Qermez Dere**		oxa 3754	9580	95	RCK 501.1	seed	Archaeometry 38,1,1996; Benz PPND
***Qermez Dere**		oxa 3755	9710	85	RDI	seed	Archaeometry 38,1,1996; Benz PPND
***Qermez Dere**		oxa 3756	10115	95	RDM (above RDN)	seed vicia	Archaeometry 38,1,1996; Benz PPND
***Qermez dere**		oxa 3757	9640	85	RDN	lens seed	Archaeometry 38,1,1996; Benz PPND
***Nemrik 9**	3	gd 5249	11180	90	hous 1A pit 18	ch	Pazdur 1992; Kozlowski 1994
	2	gd 2714	10900	140	near hs 6	mollusc	Pazdur 1992; Kozlowski 1994
	3	gd 5451	10700	120	house 2a	ch	Kozlowskis 1994
	5	gd 2777	10180	130	house 2a	ch	Pazdur 1992; Kozlowski 1994
	3	gd 4208	10100	130	house 2a	ch	Pazdur 1992; Kozlowski 1994

	2	gd 2970	10070	120	house 6	ch	Kozlowskis 1994
	3	gd 4209	10040	130	house 2a	ch	Pazdur 1992; Kozlowski 1994
	3	gd 5257	10020	80	house 2a	ch	Pazdur 1992; Kozlowski 1994
	4	gd 6152	9800	130	house 8 pillar	ch	Kozlowskis 1994
	4	gd 5595	9950	100	house 8 pillar	ch	Kozlowskis 1994
	2	gd 2963	9780	130	near hs 6	ch	Kozlowskis 1994
	5	gd 6148	9720	130	house 5	ch	Kozlowskis 1994
	3	gd 2766	9570	130	house 1a	ch	Pazdur 1992; Kozlowski 1994
	3	gd 4193	9500	130	house 1a	ch	Pazdur 1992; Kozlowski 1994
	3	gd 5421	9250	70	house 2a	ch	Kozlowskis 1994
	2	gd 5443	9420	90	house 6	ch	Kozlowskis 1994
	4	gd 5186	9170	90	house 4	ch	Pazdur 1992; Kozlowski 1994
	4	gd 5424	9140	90	house 4	ch	Kozlowskis 1994
	3	gd 5425	9140	90	house 2a	ch	Kozlowskis 1994
	3	GD 5240	9130	60	house 2a	ch	Pazdur 1992; Kozlowski 1994
	4	gd 5422	8750	80	house 4	ch	Kozlowskis 1994
	3 or 4	gd 4207	8700	110	house 1a	ch	Pazdur 1992; Kozlowski 1994
	5	gd 5111	8630	70	house 2a	mollusc	Pazdur 1992; Kozlowski 1994
	5	gd 5110	7470	60	pavement n house 1	mollusc	Pazdur 1992; Kozlowski 1994
Zagros							
***zawi chemi shanidar**		W 681	10870	300	455, foyer	CH	Hours et al. 1994: 415; Benz PPND
***karim shahir**		none available					
***mlefaat**	B	gd 6150	10890	140	hearth B	charc	Kozlowski 1994, Benz PPND
***ganj dareh**	A	b 108238	8780	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	B	b 108241	8720	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	B	b 108240	8750	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	B	b 108239	8930	60		bone/collagen	Zeder and Hesse 2000; Benz PPND
	B	b 108242	8940	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	C	b 108243	8920	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	D	b 108244	8840	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	D	b 108245	8940	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	E	b 108247	8830	50		bone/collagen	Zeder and Hesse 2000; Benz PPND
	E	b 108248	8900	50		bone/collagen	
***shanidar cave**		W179	12400	400	b2	CH	Kozlowski 1994:261, Benz PPNB
***shanidar cave**		W667	10600	300	b1	CH	Kozlowski 1994:261, Benz PPNB