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NEAR EASTERN TOKENS

A CONTEXTUAL ANALYSIS OF NEAR EASTERN TOKENS FROM THE 7TH TO THE 4TH
MILLENNIUM BC.

Sammendrag

Tokens er små geometriske gjenstander laget av leire. De er fordelt over et stort geografisk område i Midtøsten og eksisterer i stratigrafiske lag fra lokaliteter datert mellom 8000 til 3000 f.Kr. Gjenstandsgruppen er blant annet funnet i Iran, Irak, Syria, Palestina, Tyrkia, og Jordan. Tokens er en viktig funnkategori på grunn av deres vide distribusjon gjennom tid og rom. Neolitikum er i Midtøsten kjennetegnet for å være det tidsrommet hvor jeger og sanker samfunnet begynte med jordbruk, domestiserte husdyr og etablerte faste bosetninger.

Overgangen fra jeger-sanker samfunn til jordbrukssamfunn fikk økonomiske konsekvenser som skapte forandring både i den sosiale og den politiske sfæren. Disse endringene er svært vesentlige i den gjeldende tolkningen av tokens. Schmandt-Besserat er den ledende teoretikeren på feltet og hun tolker tokens som verdens første regnskapssystem. Materialet har hun sortert i 16 ulike hovedtyper og selve samlingen av tokens deler hun i to. Den eldste kategorien med tokens kalles for «plain tokens». «Plain tokens» er beskrevet som enkle å lage, lette å gjenkjenne og de er den formen for tokens som hadde størst spredning i Midtøsten. I det fjerde årtusen før Kristus er utviklingen av tokens blitt mer avanserte.

«Complex tokens» er assosiert med en urbanisert tid med en mer komplisert statsøkonomi. De første byene er datert til det fjerde årtusen før Kristus. Mønster på tokens er kun funnet i stratigrafi fra bronsealderen. Noen tokens er tilpasset til å kunne puttes på tråd og noen er funnet i leire konvolutter. I denne masteroppgaven foretas det en kontekstuell analyse av tokens fra 6 forskjellige lokaliteter i Iran og Irak i tidsrommet mellom 7000 f.Kr og 4000 f.Kr. Målet med oppgaven er å rekonstruere de ulike arenaene tokens oppstod og ble brukt i. En kontekstuell sammenligning og romlig analyse vil bli brukt til tolkningen av gjenstandene i et forsøk på å fastslå hvilke funksjonsområder tokens kan ha hatt i neolittisk tid, eventuelt hvilke funksjoner de utviklet i bronsealderen. De seks sentrale lokalitetene i oppgaven er Jarmo, Tepe Guran, Hajji Firuz, Tell Abada, Tepe Gawra og Warka.

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CHAPTER 1: NEAR EASTERN TOKENS

1.1 INTRODUCTION

The Near East is the backdrop to a multitude of firsts. The conversion from a hunter-gather subsistence to the first sedentary villages, and the first domestication of plants and animals, all occurred amidst the Near Eastern landscape. Together these changes represent the context where tokens developed. Tokens are a category of artifacts, which have had a ubiquitous presence in the Near East from the 8th to the 2nd millennium BC. These geometric pieces of clay have today been under scrutiny for at least 60 years, but for a multitude of years, they were simply categorized as miscellaneous, without purpose and without function. Indeed, in a large proportion of the early archaeological reports the same group of artifacts differ between being referred to as counters, calculi, pebbles or even gaming pieces.

Presently tokens are by most scholars understood to be an early form for accounting, if not the first. Schmandt-Besserat is renowned for her work on tokens and the origin of writing. Her definition of a token is “*a small artifact, generally modeled in clay according to one of the following sixteen types: cones, spheres, disks, cylinders, tetrahedrons, ovoids, rectangles, triangles, biconoids, paraboloids, bent coils, ovals, vessels, tools, animals, and miscellaneous*” (Schmandt-Besserat 1992:7-13). Admittedly, Schmandt-Besserat's definition is successfully descriptive, but somewhat lacking. It does for example not include the small geometric pieces in stone, which are also categorized and interpreted as tokens. Neither does her definition state the specific meaning of the object. Nevertheless, her definition and interpretation of tokens as the first form for accounting, and the three-dimensional precursors to cuneiform writing is widely used today.

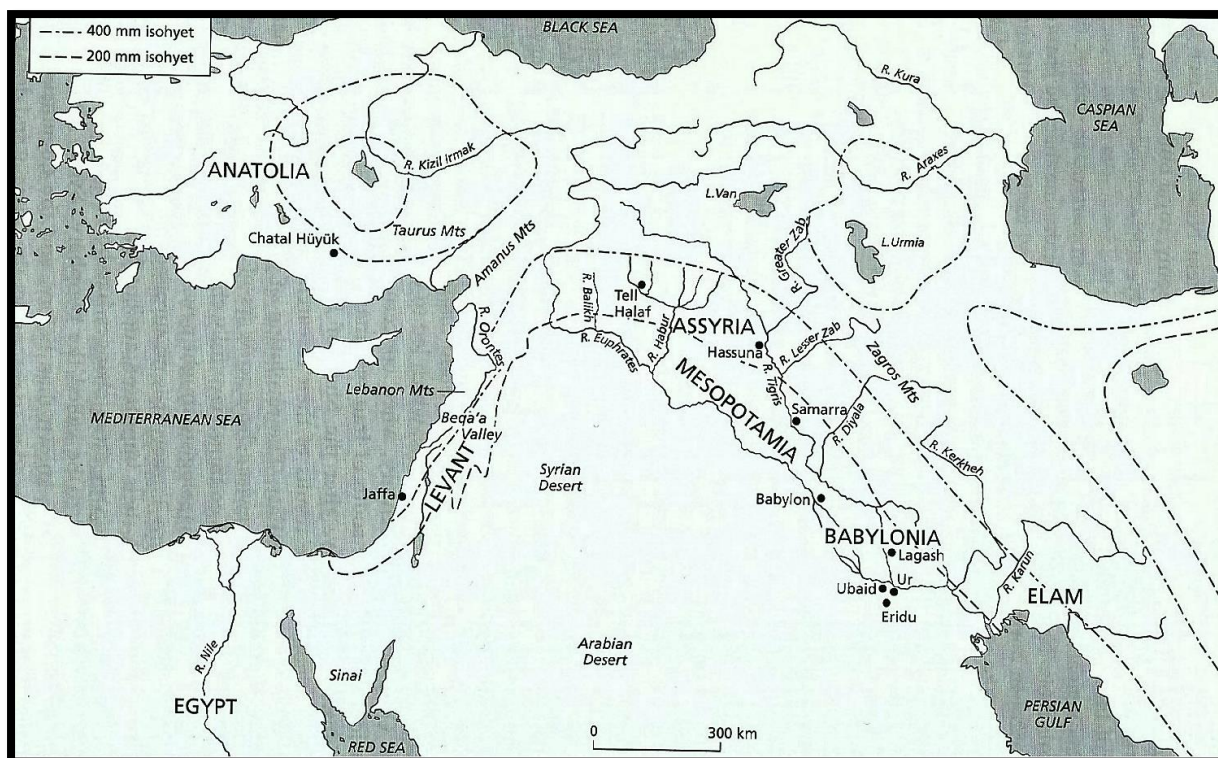
Considering the pivotal time and area the geometric pieces were developed in, this dissertation aims to address the relationship between tokens and their contexts in six prehistoric sites in the Near East. Furthermore, an assessment will be made on how a contextual analysis could contribute to, confirm, or change the interpretations of tokens and their intended function. Comparisons of token contexts is confined to the following sites in Iran and Iraq; Jarmo, Tepe Guran, Hajji Firuz, Tell Abada, Tepe Gawra and Warka.

The prehistoric settlements fall chronologically from the 7th to the 4th millennium BC. This broad timeframe was chosen to study if there exists a correlation between the various contexts tokens appear in, and the millennium they are found in. However, it must be considered that these six sites might not be representative for the complete array of tokens. The six sites are chosen, not only because they show a wide variety in contexts for tokens, but also because with the exception for Tepe Guran and Warka, their excavation reports are sufficiently detailed and accessible.

A common challenge one faces while working with archaeological reports from the early decades of the 20th century, is that the work is either unpublished, published but unavailable, or only published in the excavators' original language. When one does find adequate or even excellent publications, the archaeological methods used on the excavation may be of the earliest kind and the information you need, absent. A positive aspect about these early excavations is that a large proportion of the documents and materials still exist today. They can be found buried in museum and university archives ready for review and further inspection. Renewing interest in artifacts and archaeological sites already dug in the Near East is an amicable method to continue research on the past in an area of conflict, otherwise unavailable for archaeologists.

1.2 GEOGRAPHY & CHRONOLOGY

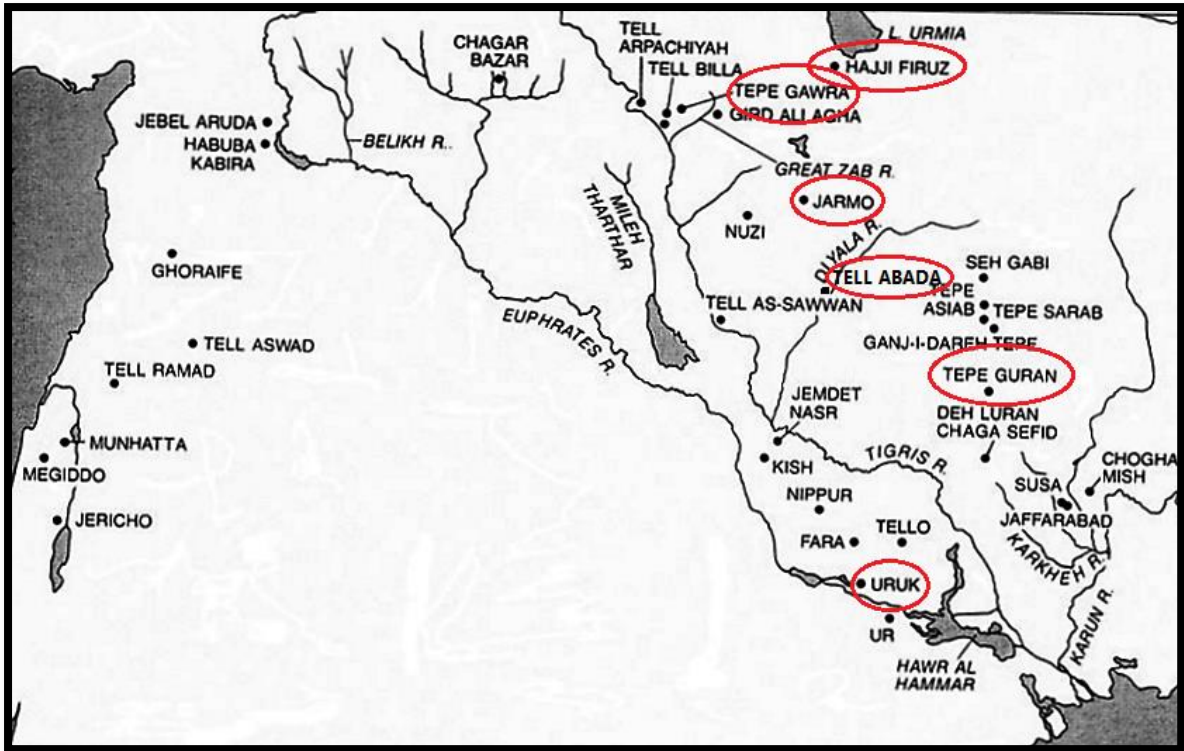
The Near East extends from Anatolia (modern day Turkey) and Egypt in the west, through the Levant (Israel, Lebanon, Jordan and Syria west of Euphrates) to Mesopotamia (northern Syria east of the Euphrates, and Iraq) and into Iran (Kuhrt 1995:1). Today this area is most often referred to as the Middle East. Both terminologies are Eurocentric constructions from the 19th and 20th century created by the West to define what had earlier been lumped together as “the Orient”. Lately it has become common amongst scholars to use the less politically loaded terms “Western Asia” and “Southwest Asia” (Matthews 2003:6). This dissertation uses the term “Near East” not only on a geographical scale, but also on a cultural level, because it is the most sufficient term to represent the regions long and varied prehistory.



Map 1. The Near East (from Mieroop 2007:6).

The Near Eastern landscape is characterized by a unique diversity and it is crucial to question the validity of referring to the area as a unified subject for historical investigation. There are ecological differences between the hills and steppe-lands, the river valleys and the Mediterranean countryside. Diversity is not only found in the environment, but in the people, languages, ways of life, modes of production and natural resources. Regardless, the Near East shows a greater unity than other prehistoric civilization. A culture for exchange and adoption created enough similarities in the archaeological evidence to represent the area as a “whole”. A unified treatment of the Near East should however, not neglect the individual features that Lower Mesopotamia, Upper Mesopotamia, the Levant, Anatolia and southwestern Iran present (Liverani 2005:3).

Tokens have been located in 116 sites from the Near East (Schmandt-Besserat 1982:872). Even if the six sites included in this study are confined to Iraq and Iran, it is paramount to understand that the different contexts tokens appear in, extends further than the examples sites presented here.



Map 2. The locations of the six central sites in this dissertation (Schmandt-Besserat 1977 B: 55).

The earliest examples of tokens were found in Syria from stratigraphic levels belonging to the 9th millennium BC, which make them a Neolithic invention (Bar Yosef 1998:195). The localities chosen for comparison in this study fall between the 7th and 4th millennium BC. This large span of time allows for an investigation of the earliest contexts including Neolithic sites where sedentism is slowly becoming the norm, and sites belonging to the Chalcolithic, where signs of an emerging state and city life has emerged.

1.3 RESEARCH HISTORY

The history of archaeological research in the Near East is equivalent to the history of how archaeology surfaced as a scholarly discipline. What began as an interest in English history by the Academy of the Study for Antiquity and History, transformed, with time, into a scientific discipline (Maisels 1993:16-33). The road from antiquarianism to archaeology has not been short and digging began in the Near East long before the triangulation grid became norm (Maisels 1993:36). In reality, many of the first explorers came and dug with what they could afford from their own pockets and there was no archaeological training involved (Oates&Oates 1976:30).

Near Eastern archaeology bears an imprint of its early years and many of the records from the first explorations only report what the archaeologists at this time prioritized and found valuable. Expeditions in the Near East began in the early years of the 19th century. A few of the sites mentioned in this thesis, including the significant find of Warka (Uruk), were discovered as early as 1849. The men of education and wealth who were interested in unravelling the meanings of ancient memoria are called antiquaries and their specific curiosity was aimed at the objects for which there seemed to be no evident purpose. Antiquaries were collectors of items, and whether the items gave informed answers to past actions or not, did not matter. Antiquarians can therefore be said to have performed the purest form for research, intent on collecting and observing the artifacts alone (Maisels 1993:14-15).

At the dawn of the 20th century antiquarianism was substituted for culture historical archaeology, and it is this change which represents the transformation of archaeology as a hobby to an established science. How material culture is interpreted, depends upon the theoretical framework and archaeological discourse it is interpreted within (Johnson 2010:18-19). Culture-historical archaeology has been summed up by Johnson (2010) as a theory built on “mere data collection”. Distributions of artifacts were localized, grouped together and classified as cultures, and every culture represented a “people”. Change and diversity was explained by the migration and diffusion of people and cultures. During culture-historical archaeology several of these migrations and diffusions were mapped (Johnson 2010:15-19).

In 1960 a wave of dissatisfied archaeologists came together against culture-historical archaeology and created the concept of “Processual Archaeology” (at that time labeled “New Archaeology”). The term processual archaeology is used to describe a collection of new theoretical movements focused on revolutionizing the way the archaeological profession interpreted material culture (Johnson 2010:21). Processual archaeology did not simply collect and classify material culture, they also explained and tested the material either anthropologically or by scientific methods. Aims of the processual archaeology was to understand the social and economic development of society. Emphasis was put on system theories and scientific methods which could test hypotheses and generate attractive conclusions (Johnson 2010:23-26).

Binford, one of processual archaeologies best known figures, believed that the ultimate way to understand social and economic structures from the past, was through the use of analogies. By observing modern hunter-gatherers butcher their kills, one would have the means to

translate the static remains of the past into the living group of people who had utilized them (Johnson 2010:53).

In 1980 a reaction to processual archaeology was created and appropriately labelled post-processual archaeology. Again not just one single attitude, but a collection of theories characteristic of a period which wanted to broaden archaeological horizons and interpretative methods. They rejected the purely scientific approach of the current processual archaeologists and began to focus on the individuals, thoughts and values of the past. Turning to the material culture there now was an agreement that materials could be “read” almost like “text” and that surrounding context was an important element in analyzing the past (Johnson 2010:105-110).

These theoretical approaches are very much western constructions by European and North American archaeologists. As mentioned above, the first digs in the Near East were not performed by archaeologists, but by explorers. Primarily the first surveys of the Near Eastern mounds were performed by French, British, German and American diplomats or military officers. A driving force in the first explorations was to locate objects from the past which could authenticate biblical stories and prove that places mentioned in the holy book had existed (Pollock 1999:11-13). In the 1920s’ and 1930s’ the aim was furthered to include efforts to create national identities through material culture for the countries where no national identity had previously existed (Pollock 1999:20). While the archaeological theories and practices were constantly changing in the West, the East continued interpreting the material culture of specific people and events. Mesopotamian archaeologists rarely declare where their theoretical stance lies, but there has been a certain stasis in Near Eastern studies. Culture historical archaeology and anthropological archaeology was not replaced in the East as quickly as in the West (Matthews 2003:19).

With the slow introduction to more post-processual oriented research in the Near East, there is now a bigger focus upon analyzing the meaning of objects. Slowly the individual, symbols, and the meaning of prehistoric actions, are becoming a priority in Near Eastern research. Especially relevant for this dissertation is the work which involves the invention of accounting, writing, and the political economy.

While searching for literature on tokens and the cultures of the Near East, a stagnation in archaeological literature and research topics in the field became very clear. Many of the earlier works and excavation reports referred to tokens under miscellaneous categories such as “objects of uncertain purpose”, “children’s playthings”, “gaming pieces”, “amulets”, and

“mysterious clay objects” (Schmandt-Besserat 1977 B:50-58). One could clearly differentiate between which objects were offered attention during the digs and those which were not offered much thought at all.

A dominating outside factor which has affected archaeological research in the Near East, is the political situation the area has, and continues to be in. Both the prehistoric and present Near Eastern population is wrought by conflicts between governments, ethnic groups and religious parties. The opposition and political distress has been a sizable context for all archaeological work performed in the area, and will inevitably always play a crucial role in Near Eastern archaeology (Pollock & Bernbeck 2005:2).

1.4 RESEARCH OBJECTIVES

The developments that occur between the 7th and 4th millennium BC in the Near East are insurmountable, and to think that the system of tokens remained suitably efficient and relevant throughout this vast surmount of time is an accomplishment all on its own. However, the knowledge on the use of these small geometric clay figures have been subjected to generalizations and assumptions for the duration of their archaeological existence and it is in due time for a reconsideration of old theories and further investigation into their function through 4 millennia of use.

Through a contextual analysis and comparison on tokens from Jarmo, Tepe Guran, Hajji Firuz, Tell Abada, Tepe Gawra and Warka, I intend to achieve the following objectives.

1. To reconstruct the arenas tokens belonged to.
2. To clarify what context can reveal about token function and significance.

By achieving these outlined objectives this research can add to the discussion on tokens, and how context can both contribute to, but also control the interpretations of archaeological artifacts. Contextual archaeology and spatial archaeology were chosen as theoretical and methodological approaches to isolate which arenas tokens belonged to. While Hodders meaning of function, structure, and content, was chosen to study what the tokens mean.

CHAPTER 2: THEORETICAL AND METHODOLOGICAL APPROACHES

2.1 CONTEXTUAL ARCHAEOLOGY

Contextual archaeology is a theoretical approach of how to interpret the meaning of material culture. The theory surfaced as a reaction to processual archaeology. Archaeologists who practice processual archaeology believe archaeology to be a scientific profession which should only investigate the past through hard and universal science. Everything must be categorized, measured and tested. Under processual archaeology material culture is understood as the product of human actions adapting to the environment. Interpretations of the objects function is prioritized. They believe that meaning can neither be sketched, categorized nor measured (Hodder 1986:4).

Contextual archaeology strongly disagrees that meaning cannot be derived from archaeological material. A useful starting point for articulating how contextual archaeology seeks to accomplish an interpretation of meaning, is through Hodder. Hodder argues archaeology to be a profession concerned with finding objects in layers and contexts so that their meaning could be interpreted, for *“to look at objects by themselves is really not archaeology at all”* (Hodder 1986:4). He argues that it is impossible to separate a study of function from meaning. The simple act of calling an object an axe, is to assume that the function and meaning of an axe is to cut down trees and that people in the past saw it in the same light as we do today. Meaning is retrieved from the archaeological material through an understanding of context (Hodder 1986:23).

In archaeology “contextual data” is interchangeable to every relevant piece of information associated with identifying archaeological material and patterns which lead to the interpretation of activities from the past. Boundaries of contextual data are defined relative to the phenomenon at hand (Carr 1991:223). “Context” can help interpret the meaning of objects, because it consists of the three essential forms of meaning identified by Hodder: function, structure and content.

1. Function: Context identifies the meaning of function through being understood as “the environmental and behavioral context of action”. Context places the object within the “larger functioning whole”. For example; within an environmental framework. The functional meaning of an object is expressed through how it is used.

2. Structure: Context is also often associated with semantics, and a common definition of context is “with text”. It is understood that an object is part of a code, a set, or a structure. By “reading” the surrounding context of an artifact one is able to successfully decipher the structured meaning of an object. An artifact out of place cannot be interpreted or understood, because the information needed to “read” the object is missing. Surface finds give very little information on the structured meaning of an object. Whether the context is misread or translated correctly is up for discussion.
3. Content: Lastly, we have Hodders’ meaning of “content” which can best be explained as a contextual analysis, which interprets the evidence primarily on internal terms. Hodder is referring to the fact that there are two active contexts when an archaeologist is interpreting material from the past. There is the current context which is the archaeologist, his/her meanings and his/her surroundings, and then there is the “internal” context, the objects past context (Hodder 1987:1-2).

In hermeneutics Hodders content of meaning is critiqued, because Hodder states that meaning and function cannot be separated, and that the objective interpretation of an artifact is not possible. He also writes that the archaeologists can interpret the “internal” meaning of an object. This should not be possible, when one cannot free oneself from one’s own understandings of the world (Johnsen & Olsen 1992:419).

These three embodiments of meaning provide a broad spectrum of how to interpret material culture. For tokens an interpretation of multiple meanings is especially relevant. Although there exists little detailed documentation on the objects specific find contexts, those tokens that are documented, are found in a variety of contexts.

Their wide geographical distribution and longevity portrays a level of relevance, while the variety in contexts is interesting due to the homogenous nature of the material itself. Tokens are simultaneously an example of easy craftsmanship which could be accomplished by anyone, while also portraying an advanced form for communication. It is not known if everyone could “read” or understand what the different token types represented. Tokens ubiquitous presence in the Near East does however indicate that people must have dealt with the artifacts on a regular basis.

If the context of an object can be explained as the totality of its relevant environment, a central issue with contextual archaeology is identifying relevant information and setting boundaries of scale. Another issue with using contextual analysis is interpreting multiple forms of meaning. If the meaning of an object cannot be interpreted without context, does the meaning of an object change according to which context it is found (Hodder 1987:8)? Can tokens found in graves from a 7th millennium settlement, for example Tepe Guran, be interpreted to mean the same, as tokens uncovered in a trash deposit from the 4th millennium city Warka? Let alone, can tokens from the trash deposits be compared to the tokens located underneath the religious precinct of the same city? These questions are all crucial in discovering the function and meaning of tokens, and are issues which will be revisited throughout this thesis.

Essentially, contextual archaeology is invested in understanding artifacts and gaining insight into their meaning from their surrounding elements. In many ways contextual archaeology is the theoretical equivalent to spatial archaeology, but where contextual archaeology looks at the objects and their specific “context”, spatial archaeology studies how ancient societies and cultures managed space, through emphasizing the position, arrangement, and orientation of material culture. Spatial archaeology is invested in what information clusters of objects can provide about how the people in prehistory used space.

2.2 SCALE AND SPATIAL ARCHAEOLOGY

Spatial archaeology is the study of human activities at every scale, this includes tracing hominid activity patterns within a site, the site systems themselves, and the relationships between sites and their surrounding environments. The method aims to uncover patterns of human interaction, and accomplishes this through retrieving the original location and spread of raw materials, artifacts, features, structures, sites, routes and resource spaces. These locations can pinpoint areas of function both within sites and between them (Clarke 1977:9).

Scale is a human construction which is used to explain dimensions of space, time and form. The spatial dimension of an artifact is part of an objects context. Defining which scale of context is relevant, is futile to gain understanding of an objects meaning and function (Hodder 1986:130). As with contexts, objects can be part of multiple-scalar patterns and may have different meanings depending upon which scale they are interpreted within. Identifying these multi-scalar patterns of past behavior are equivalent to pieces of a puzzle archaeologists can use to explain past cultures, and to show what significance the artifacts they uncover had

in past societies (Lock & Molyneaux 2006:5). In this dissertation the Neolithic and Chalcolithic are the temporal scales of this study, while the Near East, more specific the localities are the spatial scales.

To use spatial archaeology to define areas of activity in a settlement is dependent upon material culture being left behind exactly where they were being used. This unfortunately, is not often the case. However, archaeologists can place their data in non-overlapping spatial entities called “socio-spatial units”, and by the help of computer programs such as GIS, they create maps with artifact distributions or calculate least-cost-path analysis for traded goods. Theoretically a “socio-spatial unit” can vary from a single reading of an artifact, the smallest possible unit size of human impact (referred to as a point), to the largest possible unit, the entire archaeological record (a continuous entity). Every individual unit size provides different knowledge about past human behavior (Wobst 2006: 55-56).

Looking closer at levels of spatial dimensions, or levels of context, Grønhaug identifies three essential levels to any analysis. The smallest scale of space studied is called the *micro level* and refers to space within structures. This includes: rooms, floors, bins; any construction within a structure, be that a house, a temple, a storage unit, a workshop etc. The *semi-micro level* is anything within sites, but outside of structures. When referring to domestic settlements, ceremonial centers, cemeteries, industrial complexes or temporary camp locations one is commenting on the *semi-micro level*. The largest scale available is known as the *macro-level*, which roughly translates into *between sites*. Non-random or reiterative allocations of artifacts, resource spaces, structures, and sites to particular relative loci within integrated site systems across landscapes are what is analyzed at *macro-levels* (Grønhaug 1974:11-13). In this dissertation *micro and semi-micro levels* are grouped together as the *micro-contexts* due to the fact that many of the excavation reports did not include the specific location the tokens were found. Also the *macro-level* or *macro-context* is here used synonymous with “the site” itself and does not go beyond the limits of the settlement, but rather chooses to explain the environmental, economic and social situation of the site.

Spatial archaeology is especially relevant when faced with the economic sphere. Bernbeck states that when interpreting the function of an artifact one should also include a reconstruction of as much of the means of production as possible. The means of production consists of *objects of labor* and *means of labor*. In the act of creating artifacts from raw materials, the artifact is an object of labor. If the objects of labor result in unprocessed food it may be immediately consumed. In the production of a flint knife, then the artifact transforms

from an object of labor, to a means of labor as it is now used to cut meat. Means of labor do not only include tools, but also include water, land and other categories that are not manmade (Bernbeck 1994:5). Means of production can also indirectly portray the social relations of production. The social relation of production includes anyone involved in the production, distribution and consumption of a product. Returning to the example of the flint knife, the means of labor are not always directly observable. The existence of means of labor can sometimes be located in what is called “labor byproducts”. Labor byproducts include manufacturing debris, which allows one to conclude the existence of means of labor. Public buildings are a larger byproduct of means of labor. The immense size and architecture are evidence of planning which has required organized labor beyond what one single person could accomplish (Bernbeck 1994:7).

It is not always easy to know which level of scale is the appropriate choice for analysis and every decision affects the knowledge required about an object. A smaller scale might limit the possibilities for interpretation, while a larger scale could drown the study in too much irrelevant information. Deciding scale is therefore heavily dependent upon the goal of the research. Another issue in spatial archaeology is determining if the context of an artifact is original, secondary or random. Of course “random” or “secondary” contexts also convey important information, but say very little about the artifacts original use. The surrounding elements (the contextual data) can be helpful when trying to assess the situation behind why the archaeological material was left behind. Other situations such as “clean up” is more likely to be a rigorous activity in domestic areas, which is portrayed through the majority of “domestic remains” sites accumulate over time (Keeley 1991:258).

The earliest cities in Mesopotamia used abandoned buildings and open spaces between buildings for the disposal of garbage (Pollock 1999:48). Tokens from Hajji Firuz were found with debris in what appears to have been trash deposits. The discardment of tokens suggest that when their function has been fulfilled they are unnecessary to preserve and suggests that tokens were not re-used (Schmandt-Besserat 1992:95). Spatial distribution of tokens does however, portray an interesting dichotomy, and does not fully support the theory that tokens are dispensable. The act of discarding tokens maneuvers the researcher to interpret their function as finished, but the presence of tokens in burials symbolizes an object, which is anything but expendable.

Contextual archaeology and spatial archaeology mainly focus upon retrieving what the meaning and function of objects are through a materialist approach, but as the tokens found in tombs suggests, the token contexts portray more than a functional meaning for the artifacts.

2.3 SIGN, SYMBOL & MEANING

Continuing with Hodders meaning of structure and meaning of content, one moves away from a materialist approach to culture in favor of an idealist approach to culture. While the materialist approach aims to analyze and interpret ideas in peoples' minds from their economical, technological, social and material production, an idealist approach finds meaning not from the relationship between people and the environment, but from asking critical questions. An idealist approach to culture understands that there are components of human action which cannot be reflected or detected from a material base (Hodder 1986:18). Gaining meaning from the structured content of ideas and symbols involves asking questions that *reflect* on the stories or ideological patterns objects symbolize. Instead of stating that a certain phallus shaped object represents men, one should rather ask “what is the link between object A, and the view of men in situation B?” (Hodder 1986:121).

Artifacts signal to the present activities of the past, but to understand these actions and the significance of the material culture, it is necessary to understand what an artifact symbolizes. A sign consists of a signifier and the signified, understanding comes from knowing what the connection is between the two (Preucel 2006:28). Putting the theory to the test, one single clay token, a sphere, is the signifier. It alone cannot be a sign without the concept it represents, it is simply a form. But how do we know which concept the token is a signifier for? It is not enough to state that based upon known theories tokens represent commodities, it is necessary to ask what the existence of tokens reflect on the view of economy in the context it was recovered in?

Tilley (2000) states in *Interpretative Archaeology*:

“A consideration of economic practices must go far beyond simplistic accounts of how food resources might be obtained efficiently or inefficiently. The economy has a style, is part of a cultural and symbolic scheme. Of course, people eat to survive, but eating is a cultural practice” (Tilley 2000:420-421).

If we can achieve these interpretations is a question for hermeneutics. Hermeneutics works to illuminate what our preconditions are for understanding past human societies and what our modes of interpretations are. Archaeology and early hermeneutics share a conception of understanding as a methodological concern, and agree that to interpret is to understand an “inner” meaning through an “outward” expression. As mentioned above in *2.1 Contextual archaeology* Hodder is critiqued by hermeneutic archaeologists for claiming that archaeologists can transcend their own contexts and objectively interpret meanings from the past. Removing oneself from one’s own context is in hermeneutics neither possible nor preferable. According to hermeneutics understanding the significance behind an object, or the meaning behind prehistoric actions, requires preconditions people in the present do not have. This is in general a problem for the post-processualist approach to archaeological material. There is a fine line between allowing theories to argue that identity, symbolism and the individual can be found and interpreted in prehistory, to a science where “anything goes”. It is critical to always argue and build theory upon facts and logistics, even though one should not restrict oneself to only measurable facts and what can be proven by natural sciences. Material culture is not silent, but there is always room for faults in the translation and “reading” of an object. Therefore, it is especially relevant to always consider what the context of an artifact can yield of information, including the smaller scale of associated artifacts and the larger functioning whole.

CHAPTER 3: CULTURAL FRAMEWORK

3.1 NEAR EASTERN CULTURES

An introduction to the cultural background of the Near East is necessary to fully appreciate the durability of the token system. In the framework of cultural development one can truly understand the extent of change that tokens adjusted to and endured. Despite the developments and changes in subsistence and technology from the Neolithic to the Chalcolithic the tokens have an omnipresence in the Near East, and in the Chalcolithic the types multiply in numbers. Although the examples in this dissertation are limited to Iran and Iraq, this cultural framework does not limit itself in geography and includes the broad specter of parallel cultures the token system has been discovered in.

The first recovery of tokens was revealed within the layers of a few Neolithic settlements in Iran and Syria. Significant change occurred within the Near East in the Neolithic and the period is recognized as having begun around c. 10,000 BC and lasting to c. 5300 BC. Traditionally the beginning of the Neolithic is associated with the transition from a hunter-gatherer existence to the first signs of sedentary settlers and village farming (Akkermans & Schwartz 2003:45). Archaeologically this shift can be traced through the appearance of architecture, domesticated cultivates and faunal remains of domesticated animals (Bernbeck&Pollock 2005:14). Although this description is not accurate for every site in the Near East during this time, this does describe the characteristics of Tell Asiab, Ganj Dareh Tepe, and Cheik Hassan in Iran, and Tell Aswad and Tell Mureybet in Syria - where we have the earliest documented cases of tokens (Schmandt-Besserat 1982:872).

Trying to understand how these complementary farming-herding practices came to be common throughout such a wide area during a relative short span of time, have been subjected to countless theories (McMahon 2005:23). Anne Porter argues that change and innovation occur because human beings at all times and places do have agency. Agency defined by Porter as the ability to make choices. She continues to tear down the social and physical separation between nomads and sedentary farmers. The adjustment to a sedentary lifestyle and the ever-increasing complexity of the Near East is not synonymous with the death of hunters or mobile pastoralists. In fact, one should think that these constantly moving groups were part of the expanding contact, trade and communication between different cultures in the region (Porter 2012:2).

Archaeological periods and cultures that thrived in prehistory are identified through the material remains which they left behind, and the Near East during the Late Neolithic is a picture of chronologically and spatially overlapping cultures. The culture historical periods, or pottery-based phases; Hassuna, Samarra, Halaf, Ubaid, Uruk, Jemdet Nasr and Early Dynastic I-III were discussed and sorted at two conferences 80 years ago, first in Baghdad in 1929 and then in Leiden 1931. Pottery is ideal dating material on multiple scales. Regional and local variations in ornamentation, vessel styles, and manufacturing methods are excellent for creating typologies. In optimal conditions one can follow the evolving pottery styles stratigraphically. The traceability of clay is another redeeming quality, as one can trace the spread of cultural traits and identify exchange networks by locating the original source of the pottery manufacturing. The “Pan-Mesopotamian” framework was constructed along culture-historical lines on the then known excavated materials, and named after the first sites where their unique pottery-styles were first found (Matthews 2003:18).

The cultures of the Near East are in no way neatly separated, and to this day scholars still question what truly defines the different cultural entities in the Near East. Within the Neolithic period alone there are cultures which are distributed so widely that they represent some 2000 years each (McMahon 2005:21).

If after 80 years, archaeologists still ask “what defines a culture or a cultural period?” why should anyone be concerned with isolating and characterizing specifics of cultures and periods when they shift and change through every new locality which represents some of its material? If a Halaf site in north Iraq does not portray the same picture as a Halaf site in Syria or east Turkey, how can the information hold any validity? The importance of the prehistoric cultures and cultural periods lies in their ability to create chronological and spatial contexts, so that the specifics of economies and societies can be traced and explicated (Matthews 2003:21-26). Although there are still conferences which discuss the “Ubaid phenomenon” or the existence of the “Uruk expansion”, these cultures and cultural periods still represent the foundation of the stratigraphic sequences of the Near East and will stay for the time being the “cultural framework of the Near East”.

Date BC	Levant	Anatolia	N. Mesopotamia	S. Mesopotamia
9000				
	Proto-Neolithic (PPN A)			
8500				
	Aceramic Neolithic (B-C)			
7000	Pottery			
	Neolithic		Proto-Hassuna	
6500		Chatal Hüyük		
	Amuq B		Hassuna/Samarra	
6000	Halaf	Halaf	Halaf	Early Ubaid
5500				
5000				
4500	Ubaid	Ubaid	Ubaid	Late Ubaid
4000				Early Uruk
	Chalcolithic			
3500			Uruk	Late Uruk

Table 1. Cultural Framework of the Near East (Mieroop 2007:14).

Hassuna

The Hassuna culture dates to the early 6th millennium BC and was first discovered in the northern plains of Mesopotamia. The period is characterized by traits characteristic of the Neolithic. Society in the Neolithic is commonly understood to be the definition of an egalitarian, kinship-based society. Archaeological evidence from Tell Hassuna and Umm Dabaghiyah supports the view of the Neolithic as egalitarian. Plenty of faunal and floral remains from the two sites point to a “broad-spectrum economy”.

A broad-spectrum economy entails exploiting all accessible resources to ensure self-sufficiency. At Tell Hassuna agriculture and animal husbandry were supplemented by hunting and gathering of wild legumes (Charvát 2002:15-16). Umm Dabaghiyah, a classic Hassuna locality, used locally available minerals for the production of arrowheads, blades, scrapers, borers, burins and microliths. Axes, grinding-stone sets, and beautiful marble and alabaster vessels were carefully manufactured and well cared for and were located within domestic contexts (Charvát 2002:15-16). Bone was used to create awls, scrapers and spatulae. Amongst finer artifacts there are alabaster bracelets and imported flint and obsidian artifacts. Houses were built of clay, and clay was also used on mobile items like pottery, slingshots (tokens?), ornaments and figurines, as well as vessels for food preparation and storage (Charvát 2002:16). Stamp seals are understood to exhibit a form for ownership and a few odd buildings are interpreted as forming a communal area (Charvát 2002:35).

Halaf

The dominating culture in Northern Syria during the late 6th and early 5th millennium is identified as the Halaf culture. The Halaf culture has produced some of the finest pottery of Near Eastern prehistory and was named after “Tell Halaf” the first site where the unique pottery was first found (Nissen&Heine 2009:15). Not only is the culture interesting for its fine pottery, but so is its placement in time. The Halaf comes after the development of agriculture, but its material culture has long vanished with the appearance of cities (Campbell 1992:183). Our knowledge of the Halaf economy is not ideal, but the sites are located within the environmental border which provided fertile grounds, and enough rain for farming (Oates&Oates 1976:106). Alongside archaeological traces of agriculture, several figurines of sheep, goats and cattle were found in at Tell Halaf, suggesting that animal husbandry was particularly utilized during the Halaf period. Characteristic of the architecture is the remains of round houses with attached rectangular antechambers (Nissen&Heine 2009:15). Contact between the settlements has been established through evidence of a substantial exchange system of pottery. Neutron activation analysis performed by Tom Davidson have proved that several groups of pottery vessels were manufactured at a few particular sites, and then exchanged to other settlements. Another artifact acquired by exchange is Turkish obsidian. Almost 30 % of the chipped stone industry from Halaf sites are of the black obsidian. Another interesting category of artifacts located in Halaf settlements are stamp seals and sealings with intricate incised geometrical patterns (Campbell 1992:184-185).

Samarra

Alongside the Halaf culture in Syria, the Samarra culture thrived in eastern Syria, and on the plains of north and central Iraq (Akkermans & Schwartz 2003:99-101). What is intriguing about the settlements associated with the Samarra culture, are their localizations south of the zone where rain fed agriculture was possible. Baghouz, Tell es-Sawwan, and Samarra all lie beyond any boundary of dry farming, but the paleo-botanical evidence of emmer, bread wheat, naked six-row barley and hilled two-row barley show that farming must have been practiced here. Unless there were better, improved climatic conditions than today, irrigation must have been essential for the survival of these settlements. Faunal remains from Sawwan and Choga Mami reveal a subsistence built on onager, gazelle, aurochs and fallow deer which was supplemented by fish and fresh-water mussels (Oates&Oates 1976:104). The subsistence does seem to have procured some form of wealth. This wealth is displayed in graves associated with large buildings from Tell es-Sawwan. Here hundreds of alabaster female statuettes and very fine alabaster bowls were buried with both infants and adults (Oates&Oates 1976:105)

Samarran houses were regular in plan, built of sun-dried brick in either a T-shape or rectangular form. The rooms were small and every house was built within the boundaries of the prior house walls. External buttressing and opposite internal wall junctions which are later associated with religious architecture is also found during the Samarran phase. Here, as in the Hassuna and Halaf culture, a recognition of ownership must have been present with the finds of stamp seals from Sawwan and Choga Mami. Unique for the Samarra culture is that individuality was expressed by every Samarran locality through the style in which they chose for their terracotta figurines, in fact for a long time the only aspect known about the Samarra was its elaborate ceramic style (Oates&Oates 1976:105).

Ubaid

Entering the transition from the late sixth to the fifth millennium BC, the crossover from the Neolithic to the Chalcolithic is affiliated with the Ubaid culture. The first signs of the Ubaid culture are located in southern Iraq and by c. 5300 BC Ubaid material culture spread from southern Iraq and the Arabian Gulf, to the northern Levant and southeastern Anatolia, including Syria in its orbit. Most notably the change from early village settlements to urban society describes this new era of time and the newly asserted culture (Akkermans & Schwartz 2003:157).

Artifacts which were used in food procurement and processing are available in many folds from Ubaid sites. Almost every settlement has large number of ceramic vessels for serving, cooking, and storage. There is also evidence of cloth production, pottery making, and chipped stone tool manufacture through finds such as: stone sickle blades, bent clay mullers, spindle whorls, bone awls and perforated stone weights. This reliance on easily accessible resources for the day-to-day activities suggests that Ubaid sites were self-procured and had access to necessities (Pollock 1999:84-85).

Although the locally available resources vary between Ubaid sites, it is a characteristic which shines through the Ubaid economy. There is a similar range of animals such as sheep, goats, cattle and pigs available for most of the sites characterized as Ubaid, but the proportions differ so markedly in the faunal remains that one can identify which species were prioritized within the different sites. There is also a difference in the type of wild animal which were hunted to supplement the diet, but they usually include wild ass, gazelle, onager, deer and fish (Pollock 1999:81).

The social structure during the Ubaid period is largely interpreted as being egalitarian and un-stratified. Unquestionable evidence of centralized authority is not present. Leadership is thought to have been in the hands of the elder in the community, as in the preceding Neolithic settlements. This view is supported by the lack of differentiation in burial custom, the lack of luxury items, in general small size of settlement and architectural differences. Neither does the material culture point to any administrative control in the form of seals – other than that of tokens, however their role in the society is not fully established yet (Akkermans & Schwartz 2003:178). There is debate amongst scholars in the discipline and not all who study the 5th millennium Near East agree that the Ubaid was homogenous and un-stratified. Several theories on the emergence of state look for the first signs of urbanization in the Ubaid and characterize the culture as a chiefdom. This is done on the basis of the evolutionary scheme by Service (1962), which looks at the state as a result of development through the prior stages band, tribe and chiefdom.

In an article about the economic developments in early Mesopotamia, Bernbeck (1994) comments on the use of terminologies such as “chiefdoms” and “states”. He argues that by imposing these terms on prehistoric sites, the political, economic, and social institutions of the site become inseparable. Although these elements of society are undeniably connected,

change in the economic sphere does not necessarily have to imply change in the political or social processes of the settlement (Bernbeck 1994:1).

Uruk

Undoubtedly those who have heard of Mesopotamia and are interested in the history of the Near East know of the Uruk culture. It is a culture which had a wide spatial distribution in the Near East, and some sites have been interpreted as colonies (Akkermans & Schwartz 2003:181). Nonetheless how famous, very little is known of the earliest phases which separate the Ubaid from the Uruk way of life. It is first in the Late Uruk, around 3200 BC that a clear picture emerges of the culture (McMahon 2005:26). The Late Uruk period is associated with the emergence of the early state. It is identified by a “redistributive” economy which centered on the big temples that were now replacing the rather humble Ubaid shrines dedicated to cultic activities. Not only did the buildings grow larger, but the settlements increased both in numbers and sizes in the Uruk era.

Although the agricultural evolution began in the Neolithic, it is not before the transition from the Ubaid to the Uruk that agricultural surplus was managed. Subsistence economy applies to agricultural regimes with a seed-yield ratio of 1:2 to approximately 1:6. This practice left no surplus, and only accounted for next years seed and consumptive needs of those working the land, which very sufficiently describes Near Eastern economy *prior* to the Uruk period. Without the central agencies the large irrigation networks, communal buildings, city walls and settlement maintenance could never have worked. Mesopotamian agrarian economy in the Uruk period produced seed-yield ratios ranging from 1:6 to 1:24. This development in production created a considerable increase in surplus (Renger 2009:195). It should come as little of a surprise that a more complex economy and administration needed new devices to control the surplus they now were working with. The invention of writing, have by many, been attributed to the emergence of state. Gnanadesikan defines writing as “the technology that emerged to meet those needs”, referring to the need for recording trade transactions, crop yields, taxes and in general store information (Gnanadesikan 2010:14). Among the many thoroughly thought out theories on the emergence of writing, tokens appear as possible precursor to the 4th millennium cuneiform tablets of Mesopotamia.

3.2 THE NEAR EASTERN ECONOMY

At first sight the archaeological material from the Hassuna, Halaf and Samarran cultures portrays similar societies. With the exception of individual pottery styles, they all conform to an egalitarian society with a broad spectrum economy. The houses were simple and made of clay. The lithic assemblage, and bone tools are all comparable. Evidence of domesticated cultivates and the herding of animals are found in all of the above. Analysis of material associated with the settlement structure and political structures reveal no drastic dissimilarities between the cultures. A study done by Bernbeck (1994) proves that although ostensibly similar, the main difference between the cultures are bound to the economic sphere (Bernbeck 1994:9).

As previously stated, Hassuna sites are within regions where rainfed agriculture is possible, whilst Samarran sites had to practice irrigation due to their location beyond the border for rain fed agriculture. This difference in natural environment can be reflected in the economy and in the means of labor between the two cultures.

The Hassuna villages as constructed in pisé. Pisé constructions are made by setting multiple layers of wet mud on top of each other. Every layer is approximately 30 to 50 cm high and each layer must dry before another can be constructed upon the previous layer. The clay is wet while building, and the extraction of the raw material must be in vicinity of where the house is being built. Transporting the wet clay to the construction site is heavy and difficult work. The repetitive nature of the construction is slow and does not require a large force of labor (Bernbeck 1994:11). Hassuna subsistence was reliant upon rainfed agriculture and droughts were a constant threat. The amount of land tilled seems to have been much higher than what was necessary. This practice was most likely a precaution in case of a year with bad crops. This community cooperation seems to have infiltrated the settlement structure. Hassunan houses were built directly against each other and the outer walls of a neighboring house could act as an integral part of a new structure. There seems to be no standard plan for houses and spaces between buildings were used for public storage, processing harvested grain and firing ceramic objects. No house floors were plastered, but the public spheres sometimes have carefully plastered surfaces. Multiple entrances to houses also suggest that there was little separation between public and private spheres, and the public sphere seems to have been most important.

Samarran villages are constructed of mud brick. The construction of mud brick structures involves a larger force of labor than the houses made of pisé. The forming and drying of mud bricks can be performed next to the site of construction, or easily be transported. Because the bricks are already dry there is no reason to pause during the construction work itself and the different tasks of construction can happen simultaneously (Bernbeck 1994:11). Samarran agriculture also involved a high degree of labor investment. First suitable land for irrigation had to be found, or created by terracing work. Irrigation canals had to be constructed, and every year fields had to be levelled to avoid erosion. Maintenance involved constant control of water flow, and the clearing of weeds. Samarran houses had a standard plan and no outer walls touched one another. There was only one entrance and there are no indications of many occurrences of public activities. It seems reasonable that irrigated land was less risky than rainfed agriculture and that the demarcation between public and private spheres in Samarran settlements illustrate the autonomy of households in the Samarran villages.

In Neolithic cultures, the settlements were small enough that autonomous households constituted the political management of the community. The basic social unit for primary production is the extended family. During the Ubaid, there are tendencies towards urbanization. Evidence of emerging social differences can be witnessed in the construction of large structures and the importation of extravagant goods. There are also traces of specialist production of pottery. Well planned structures, imported wares and pottery production all point to an advancing social system in the Chalcolithic (McMahon 2005:26).

The Uruk economy was vastly more complicated than any prior economic system. For the first time the power shifted from extended households and local kin groups to an established elite. There was no recognized boundary between the temple and administration, but the size of the architecture increased immensely. The remains of cylinder seals, tokens, clay tablets, clay bulla are only a very small part of the Uruk economic sphere. Recreating the means of production necessary for the constructions, the spread of the culture, and the multiple crafts located in the Uruk would be extensive work. Here it is only necessary to reproduce the means of productions for tokens (McMahon 2005:27).

CHAPTER 4: TOKENS AND THEORIES

4.1 TOKENS

Tokens are small hand-molded geometric clay figures. There are identified 16 main types of tokens, they are; 1. Cones, 2. Spheres, 3. Disks, 4. Cylinders, 5. Tetrahedrons, 6. Ovoids, 7. Rectangles, 8. Triangles, 9. Biconoids, 10. Paraboloids, 11. Bent coils, 12. Ovals, 13. Vessels, 14. Tools, 15. Animals, 16. Miscellaneous. Subtypes are arranged according to intentional variations in shape, size or the addition of markings. Markings include incised lines, notches, punches, pinched appendices, or appliqué pellets. To the 16 main forms, there are 500 subtypes (Schmandt-Besserat 1992:17). Sometimes there is evidence that the tokens have been fired at about 500-700 degrees celcius, which has been compared to the amount of heat an open heart can produce (Schmandt-Besserat 1977 A:5).

The tokens have buff, reddish or red colours, but can also appear as grey or black. Testing has determined that the clay used to make tokens from Tepe Asiab and Tepe Sariaab is a subclass of smectite, the mineral montmorillonite. This clay is nice textured, giving the tokens a smooth surface. Since the clay is wet when being molded, traces of the material they dried on (straw or textile) has in some cases occurred (Schmandt-Besserat 1977 A:5).

There are two phases in the token system, the first tokens to be created in the 8th millennium were plain and the types which are most common for this category is; cones, spheres, disks and cylinders. During the 4th millennium the more advanced types were being created, and in addition to more complicated forms, tokens were also perforated, perhaps to be strung together, and some were also encased in hollow clay balls (Schmandt-Besserat 1992:28-29).

Tokens in stone have also been found, although this number is much smaller than the pieces found made of clay, the stone geometrics make up 14% of the known token assemblage from the Near East. Stone tokens are most often associated with burials. Studies of the first uses of clay shows that the material began being used in the Neolithic, although one would think its history of use would be longer. Clay, is a uniquely qualified substance which can be modelled into an infinity of shapes. When wet, it is plastic and only imagination and skill set boundaries for what can be created, and when dry the clay is hard until it is wetted again. If fired the small crystals which the clay is composed of are fused together and the clay is permanently hardened (Schmandt-Besserat 1974:10). With stone there are certain limitations, yet lithic tools were in use for several millennia before pottery. It is suggested that clay was

not used in the Paleolithic, because it would be inconvenient for hunter-gatherers to transport the heavy and breakable material. This is just one example in how material plays a significant role in the function and meaning of an object. Clay tokens appear in a time where people are first beginning to become sedentary and have realized the versatile function of clay, yet, in some cases, tokens are chosen to be made out of stone instead (Schmandt-Besserat 1974:11).

4.2 THE FIRST THEORIES

There are three major names associated with tokens, A. Leo Oppenheim, Pierre Amiet, and Denise Schmandt-Besserat. Their interest in the objects are in many ways the result of mere coincidence. Both Oppenheim and Amiet were originally studying the objects which tokens were found *within*, while Schmandt-Besserat was writing about the use of clay in the early Neolithic when she connected the small pieces of clay amongst her research material with objects mentioned in an article by Amiet that she had read. Today the references to tokens in archaeological records, when they occur, differ between being called “stones”, “small geometric pieces of clay”, “calculi”, “counters” and of course “tokens”. Terminology is important here, because it helps define what the artifact is. All the terms mentioned above play a role in determining the function and meaning of tokens. Although there is no universal agreement that tokens are a form for prehistoric accounting, or that they can be understood as precursors to cuneiform writing, the terminology used to describe the objects have influence. Together Amiet, Oppenheim and Schmandt-Besserats theories have created discussions on the subject for almost 60 years. In this chapter Schmandt-Besserats theory on tokens stands alone, separated from her predecessors simply because her understanding and elaborate work on the artifacts requires extensive immersion.

A. Leo Oppenheim

In 1959 an Assyriologist by the name of A. Leo Oppenheim wrote an article called “*On an Operational Device in Mesopotamian Bureaucracy*”. The article focused on the transliteration of the cuneiform script found on the surface of a “hollow egg-shaped tablet” from 2000 BC. This specific tablet was recovered during excavations at the Mesopotamian city Nuzi in 1928. While researching “text No. 449” (the tablet’s official catalog number), Oppenheim discovered a footnote from the 1928 expedition saying that the tablet had originally contained “48 little stones”. These “stones” were not located in the expedition archives and appear to be lost, and there has not been located any further descriptions of the items.

A theory on the function of this “hollow-tablet” and its lost “stones” has however been formulated on the basis of the cuneiform text on the tablets surface. Oppenheim proposed the following translation:

“Stones (referring) to sheep and goats:

21 ewes that have given birth,

6 female lambs,

8 full grown rams,

4 male lambs,

6 she-goats that have given birth,

1 he-goat,

2 female kids

– seal of Ziqarru” (Oppenheim 1959:123).

Oppenheim states that there can be no coincidence that the list of numbers and animals on the tablet surface, corresponds exactly to the number of “little small stones”. A connection between the two must be obvious (Oppenheim 1959:123).

The first interpretation of the egg-shaped tablet and the associated “small stones” is that the two act as a “simple control” of the transfer of animals from officials to illiterate shepherds. The number of “stones” or what can be understood as “counters” represent one animal each, and every sealed container represents one transaction. Sealing the containers and supplementing the surface with an inscription both added protection to the transaction from tampering, and allowed the receiver to check for errors (Oppenheim 1959:123).

A story from the Nuzi expedition in 1928 supports the theory of “stone pebbles” acting as a form for ancient “book keeping”. P. Delougaz, a member of the 1928 crew told Oppenheim that during the excavations a servant was sent to buy chickens, and at his return, the chickens for the crew had by a mistake been let to mingle with the “house” chickens that did not belong to them. Luckily the servant had put aside a pebble for each chicken he had bought to keep track of how many birds he should be reimbursed for, and the appropriate number of chickens could be selected from the unfortunate incident (Oppenheim 1959:123). Although this analogy does seem convincing, there are certain discrepancies with the theory. For example, the specificity of the type of animals listed on the “egg-shaped” tablet from Nuzi would perhaps require more advanced and different shapes than the “simple pebble” used to

represent the chickens. A minor difference in the appearance of the “pebbles” could help represent the age, sex and specific features of the animals traded. Oppenheim concludes that if the archaeologists working on the unique find of the “little stones” and the “egg-tablet” had noticed a difference in the “counters” then this would have been noted, and one must assume that the lost counters were uniform and functioned solely as counters for the number of animals, not the types of animals traded (Oppenheim 1959:124). According to Nuzi texts the reference to the stones happens in association with the verbs; “to deposit”, “to remove, to take out”, and “to transfer, to move”. Specifically, the context of the hollow “egg-shaped” tablet can be defined to the archives of the royal administrative center Nuzi. It is the only one of its kind, but it is none the less understood by Oppenheim to be an example of an administrative or bureaucratic operational device composed of the two elements “hollow tablet” and “small stones” (Oppenheim 1959: 123). It is suggested that the “stones” were deposited, transferred and moved according to the movement of animals which were born, sold, stolen, or butchered. If this is the case, then the example from Nuzi may be an envelope which was underway to another accounting department, although such a department has yet not been uncovered (Oppenheim 1959:126-127).

Pierre Amiet

Pierre Amiet came across tokens while initially studying a seal-impression on a “bulla” (a globular clay object) from Susa. He published his discovery in the 1972 copy of *La Glyptique susienne*. Here he recounted the form, size, content, seal impressions and markings of the bullae found between 1897-1967 and stored at the Louvre. In the article he also explains how while researching the script from ca. 4000 BC he had discovered that the artifact under his care was hollow and contained small clay objects within (Schmandt-Besserat 1992:9). Despite the temporal difference of 2000 years Amiet compared his “bulla” to Oppenheim’s “hollow egg-shaped tablet”, and he believed to have found the origin of the calculi system from Nuzi in Susa.

Amiet further established that “bullae” worked as bills of lading which accompanied shipments of goods. This system gave both parts of the transaction an opportunity to double check the order, especially in the case where materials were transported over larger distances. The “counters” were understood to be representations of quantities of goods. Counters with markings or punctuations were explained as numerical notations (Schmandt-Besserat 1992:76).

4.3 TOKENS BY SCHMANDT-BESSERAT

Denise Schmandt-Besserat first became aware of tokens during her work on «*the use of clay before pottery in the Near East*». The project from 1969-71 allowed her to visit museums in the Near East, North Africa, Europe, and North America. Amongst the archives for Near Eastern material collected by the museums, she searched for clay artifacts dating between 8000 and 6000 BC. The collections held pieces of Neolithic clay floors, hearth linings, granaries, bricks, beads, figurines and geometric pieces of clay. In her notes she recorded the shapes, colors, manufacture, and characteristics of every piece that underwent her study. Clay cones, spheres, disks, tetrahedrons, cylinders and various other geometric pieces were counted, measured and sketched before they entered her files under the subject “geometric objects”. The classification “token” emerged when Schmandt-Besserat furthered her investigation on the assemblage of objects and found that the term “geometric objects” was no longer descriptive enough. Schmandt-Besserat has written several articles on the subject and in 1992 she published her first complete study of Near Eastern tokens “*Before Writing – From Counting to Cuneiform*”. Here she presents her work and theory on tokens as “counters” and argues why they should be interpreted as precursors to the invention of cuneiform (Schmandt-Besserat 1992:7-13).

Schmandt-Besserat recognizes the token system to be one and the same system from the 8th to the 2nd millennium, but she does separate “plain tokens” from “complex tokens”. She relates the expansion and evolving token system to be the direct result of the social, political and economic changes occurring in the Near East.

Plain tokens

Characteristic of the plain tokens are their simple geographic forms which naturally occur when you play with a piece of clay between your fingers. The spheres, disks, cones, tetrahedrons, and cylinders were smooth surfaced, devoid of markings, and easily identified, as well as easy to copy. The clay used to make tokens has been identified as the mineral montmorillonite, a material which is unprepared and which does contain a good degree of impurities (Schmandt-Besserat 1992:29).



Figure 1. Plain tokens from Tepe Gawra (Schmandt-Besserat 2009).

The presence of plain tokens is evidenced throughout the Near East, in both small and large settlements from the eighth millennium BC to the second millennium BC. They are found in excavations from Anatolia to Palestine and from Syria to Iran – pervading in the region for 5000 years (Schmandt-Besserat 1991:29).

The development of plain tokens is temporally contemporaneous with the shift from hunting and gathering to sedentism and the agricultural revolution. It is of popular opinion that there were socioeconomic consequences which created a need for accounting following the cultivation of cereals and the development of agriculture. Excavations at the Syrian site Mureybet revealed occupational levels between 8500 and 7000 BC. Two of the three levels were Natufian (level I and II), and inhabited by hunters and gatherers. The third level (level III) was interpreted as a Neolithic village and dated to 8000 BC. It was not until the third level, when signs of agriculture, such as silos for the storage of grain appeared, that also tokens appear amongst the artifact assemblage (Schmandt-Besserat 1992:168). Because it is understood that the economy practiced in the Paleolithic by hunter-gatherers prior to the Neolithic neither wanted nor created a need for accounting. The Neolithic economy was altered by the accumulation of surplus made possible through agriculture. Surplus accelerated change in social organization, and a *need* for accounting was established. Schmandt-Besserat argues that because of the relation between plain tokens and agricultural resources, it is not entirely unsubstantial to view spheres, disks and cones as representatives of daily life commodities (Schmandt-Besserat 1992:170).

Complex tokens

During the 4th millennium, when an addition of more complex forms appear, the tokens are made of a good textured and fine clay-paste. Firing techniques and types of tokens advanced considerably and this process is explained by Schmandt-Besserat to be a reaction to the urbanization process. Complex tokens required more attention to detail and the more varied

forms such as biconoids, ovoids, bent coils, rhomboids, parabolas, quadrangles, and triangles required a greater understanding of the material. Together with the more varied repertoire of types, the practice of marking tokens surfaces began. The markings were applied to the face of the tokens with a stylus and consisted of linear patterns, notches and punctuations (Schmandt-Besserat 1991:28).

Tokens also start to portray miniature tools, utensils, containers, and animals. These miniatures were representations of finished products, a natural necessity when available commodities for sale or exchange grew beyond agricultural resources. Examples of products that the complex tokens symbolized are processed foods, such as oil, bread, cakes, and trussed ducks; and luxury goods, such as perfume, metal, and jewelry (Schmandt-Besserat 1992:168).



Figure 2. Complex tokens from Warka.

(<http://cdli.ucla.edu/staff/englund/m104/images/UrukPeriod/Urukcxtokens.jpg>).

Complex tokens have a limited geographical and chronological presence. Because of the connection between complex tokens with finds of public buildings decorated with clay cone mosaics, cylinder seals, beveled rim bowls and incised nose-lugged jars, Schmandt-Besserat suggests that perhaps complex tokens were exclusively a southern Mesopotamian phenomenon, isolated to sites which experienced the rise of the Sumerian temple institution. Sites which have yielded complex tokens include: Warka, Ur and Ubaid in Sumer, Susa and Choga Mish in Susiana, and Habuba Kabira and Tell Hannaas in Syria. The developing token system is significant precisely because it implies that changes in the “book-keeping” or “accounting” devices reflects and plays a role in the socioeconomic changes which led to the development of state (Schmandt-Besserat 1991:32-33).

Amongst these advances in book-keeping are the perforated tokens thought to have been strung together in series, and the practice of encasing tokens in clay bulla such as found by both Oppenheim and Amiet (Schmandt-Besserat 1992:108-110).

Tokens as precursors to writing

According to Schmandt-Besserat (1992) both plain and complex tokens play a crucial role in the development of writing. Plain tokens were created for the purpose of accounting, and when accounting needed to expand and become more specified, complex tokens were created. In a timeline created by Schmandt-Besserat a clear chronological evolution from clay tokens to cuneiform writing is explained.

Plain tokens are invented during the 8th millennium as a response to the accumulation of goods. Unlike hunting and gathering, agriculture and pastoralism created an environment where people could accumulate commodities, and these commodities created the need for accounting. First the plain tokens experience little change and were used from 8000 to 3000 BC to represent simple measures of grain. When the society and economy transformed into a redistributive nature during the 4th millennium and the power shifted from private spheres to the public entities created by the emergence of state a greater variety of types in the token system was made to represent urban goods traded in the city center. Therefore, during the period between 4400 and 3100 BC. complex tokens surface for the first times, and their more diverse forms enlarge the token repertory. Around 3500 BC the complex forms reach a climax and their presence can be found in northern Mesopotamia, Susiana, and Syria. Common for all of these places is the shared southern Mesopotamian bureaucracy. Even more control in the administrative sphere can be witnessed by the appearance of groups of tokens in envelopes. These envelopes (clay bullae) create a new system for storing tokens. The early examples are simply impressed by the seals of those involved in the transaction of tokens, but around 3500 BC these envelopes bear impressions of the tokens held inside on their surface so that it would be possible to see what was kept inside, without needing to break the clay bulla. Eventually these envelopes (bulla) were adapted to tablets displaying impressed markings in the shape of tokens. Finally, pictographic script began being traced with a stylus on clay tablets surface in 3100 BC. Here token shapes were copied on tablets instead of impressed onto them, and when cuneiform becomes the norm for recording transactions, the use of tokens seems to dwindle (Schmandt-Besserat 1992:198).



Figure 3 (on the left): Clay bulla with plain tokens (Schmandt-Besserat 1986:35). Figure 4 (on the right): Impressed tablets (Schmandt-Besserat 1986:38).

4.4 THE CRITIQUE

Tokens are generally accepted as evidence of the first case of accounting in the Near East, but not all agree with Schmandt-Besserat and her categorization of tokens. Some do not even agree with her terminology of the objects. Critiques question the existence of certain types and subtypes of tokens, while others discard the notion that they all can be characterized as the same artifact or even belong in the same system.

Stephen J. Lieberman restricts himself to refer to “calculi” only as the objects which were used to produce extant impressions on clay bullae, i.e. the solid clay spheres and cones. Any other small clay objects which are called “tokens” by Schmandt-Besserat are by Lieberman just called “small clay objects”. To call something a calculus, or a token, he argues, implies the object has a place as a sign in a particular system. The solid clay spheres and cones are established as signs by their presence as impressions on the surface of clay bullae, and their status as a sign is magnified by their presence inside the envelope. The other geometrics are not proven to belong to such a system of semanticity (Lieberman 1980: 84-85).

Glassner very thoroughly questions Schmandt-Besserat's material and theory (specifically of tokens as precursors to writing) in *The Invention of Cuneiform* (Edited by Bahrani & Van de Mieroop 2003). He argues in similar tone as Lieberman, that all tokens cannot belong to the same system. First of all, he is uncomfortable with applying the same interpretation of meaning for “stone tokens” as for the “clay tokens”, although they do make up 14 % of the assemblage, they are seldom found together (Glassner 2003:75).

Secondly, after a closer inspection of the complex tokens a substantial percent of the assemblage postdates the invention of cuneiform, in fact 20 subtypes from Warka postdate the 4th millennium and cannot have been used as “models” for the script. 56 % of Schmandt-Besserats complex token assemblage are unique, 15% are only attested by two examples and only 18% are represented by a larger number than four examples. Of the 237 types she claims to have identified in Warka, 156 of the subtypes are based on individual tokens. Glassner does however, accept that what is known about groups of calculi within bullae during the 4th millennium in Warka is substantial enough to be recognized as true accounting. There is a convincing correspondence between the marks on the bullae surface and the counters they contain. In addition to acknowledging the bullae as an ancient form for bookkeeping, a review of the tokens from Warka may represent a core amongst the big sea of token types which could have acted as efficient counters. Glassner suggests that a fraction of the token assemblage can maybe represent prototypes of the numerical marks which precede the cuneiform signs (Glassner 2003:76).

Yoffee (1995) and Michalowski (1990) both argue in their review of Schmandt-Besserats work that the geographical span and chronological range of the token assemblage make it difficult to accept the token system as a constant whole. Logically it does not seem possible or realistic that the token types together created a uniform system which was used in diverse cultures evolving almost simultaneously from the Mediterranean Sea to Iran (Michalowski 1990:54). Perforated tokens could be interpreted as beads, and the complex token characters could be gaming pieces as originally thought (Yoffee 1995:286).

Schmandt-Besserat has also been critiqued for a lack of differentiation of meaning in tokens found in different contexts. For example, tokens as funerary offerings are a unique category. Originally many of the tokens from Tepe Gawra were assigned to the category of “gaming pieces”, but with the associated shrine erected over Tomb 107, Tobler found the prior interpretation unsuitable for these specific spheres. He proposes that tokens in a funerary setting possess religious ritualistic significance and cannot be understood as simple measures of grain, or games (Tobler 1950:85).

Schmandt-Besserat rationalizes tokens associated with burials as status symbols. “Numeracy” or the accounting practice, probably had a certain significance in prehistory such literacy had in historic time. This theory finds support among the titles in the list of professions from the city of Nippur, where there is mention of a “man of stone (s)” or “man of clay stone (s)”. If

this title refers to tokens, as one may assume, then there must have existed particular distinction of various administrators. Tokens in children graves then suggest that already from youth some individuals were destined to a practice this profession, or achieved status through affiliation (Schmandt-Besserat 1992:171).

Others have suggested that the tokens as grave goods symbolized offerings of food. Deposited spheres and cones could easily be interpreted to symbolize common measures of barley, or grain for the dead. If stone tokens are to be understood in the same way as clay tokens then the 6 examples from Tepe Gawra, could ideally represent eternal food rations. This interpretation is by most refuted, not only on the basis of the few finds of “funerary tokens”, but on the basis that with the exception of Egypt, there was not a custom for placing miniature representations of food in graves in the Near East (Schmandt-Besserat 1992:171).

CHAPTER 5: THE SITES AND THEIR MATERIAL ASSEMBLAGE

Schmandt-Besserat argues that in the Neolithic there is created a need for accounting through the emergence of agriculture. She claims that agriculture did more than sustain an economy, it stimulated growth, and the shift of subsistence led to technological, political and social changes. The simple forms of the first tokens are interpreted as representations of the new subsistence which came with farming, the new wealth; cereals. Put into perspective, the widest scale of context associated with the earliest geometric pieces of clay is the Neolithic Near East. Although important as a reference to the emergence of tokens, the question remains if one should attest the invention of the artifacts as an answer to a demand. This chapter presents an investigation of the micro and macro-level of six prehistoric sites from the Near East, their token assemblage and the contexts associated with the ambiguous artifacts.

5.1 JARMO

Geography and history as an archaeological site

In the intermontane Chemchemal valley, at the foothills of the Zagros Mountains, the archaeological site Jarmo, is part of northern Iraq history. Jarmo dates to the 7th millennium BC (7300-5800 B:C) and is elevated ca. 800 m asl. The site lies in close proximity to the bank of the Cham-Gawra wadi. Due to erosion it was not possible to measure the complete extent of the original size of the Jarmo settlement, but a maximum area coverage has been estimated to 90 x 140 m. This estimate only covers areas where buildings could be located, artifact scattering would most likely be confounded to a larger area yet (Braidwood 1983:155).

Excavation method and stratigraphy

Through the 3 excavation seasons at Jarmo (1948, 1950 and 1955) some 13 000 m² of the site was investigated. Digging at the site was performed by third and fourth generation “archaeological workmen” called the Shergati. Sieves were used to spot check dumps, or on the occasional rich floors which produced plenty of debris. Sieves were generally avoided to save time during the dig, therefore the artifact assemblage is most likely lacking evidence in the areas where sieves were not handled (Braidwood et al. 1983:1-2).

16 “floors” of living debris were uncovered by a combination of stratigraphic information from several synchronized operations. Unfortunately, it was hard to observe where the layers’

overlapped and/or disappeared, and the rough separation of levels is based on typological evidence displayed in the artifacts uncovered (Braidwood 1983:155).

Token assemblage

The Jarmo assemblage is especially relevant to this dissertation because of the work done by Broman Morales. During the excavation of Jarmo, Broman Morales was given full access and control over the 5000 pieces of clay recovered from the site.

Her detailed drawings, photographs and notes on clay context are here invaluable for both describing the tokens, and reproducing their recovery process at Jarmo. Another intriguing aspect with the assemblage from Jarmo is the large amount of tokens recovered (Braidwood et al. 1983:8).

Token types from Jarmo include smooth ogival cones, crude asymmetrical cones, tetrahedrons, “balls”, balls with incisions, plano-convex balls, biconvex balls, small oval balls, disks, sub-hemispherical disks, sub-hemispherical disks with incisions, and flattened disks. The clay is smooth and shows little impurities, but the pieces from Jarmo are smaller than examples from other sites (Broman Morales 1983:387-389).

Micro context and associated artifacts

Tokens	Context
93 “regular ogival” cones 12mm base, 10 mm height	J-I lower levels 6-8
35 squat, off-center crude cones	Unknown
20 tetrahedrons, slightly concave	Upper levels of J-II, Surface of two test squares, and gray-black ashy deposit of J-III, and in test square P16.
1,153 clay balls	Unknown
28 plano-convex “balls”	Unknown
71 smooth but faceted balls	Unknown
12 biconvex balls	Unknown
10 disks	Unknown
5 small oval balls	Unknown
86 sub-hemispherical disks	Unknown
206 flattened disks	Unknown
Total number of tokens: 1719	

Table 2. Types of tokens and find contexts from Jarmo (Broman Morales 1983:387-389).

During the excavations there were not located any clusters of objects which could help decipher the function or specialization of buildings. As summarized in Table 2, the micro-contexts which tokens found themselves within at Jarmo, are the following: J-I levels 6-8, J-II, Gray-black ashy deposit of J-III and Test square P16 (Braidwood et al. 1983:10). In J-I levels 6-8, 93 of 106 cone tokens from Jarmo were collected. These levels can be characterized as the earliest remains of *tauf* walls, and reed-bed floorings of at least 3 structures. Scattered antler, horn, bone and stone were also recovered together with the clay cones (Braidwood 1983: 159-160).

According to Broman Morales the artifacts have a clear presence within the lower levels, but she notices a decrease in tokens during the third season of excavations when digging was confined to the upper levels of the site (Broman-Morales 1983:388).

The J-III test square was dug at 5x5 m in the center of a surface concentration of flint. Under this accumulation of flint, a fine gray-black ashy earth surfaced. The material was highly concentrated but light to the touch. With the exception of a formless mass of silty earth the test square did not reveal any structural elements. The square did however reveal tokens in the form of clay balls together with flint, obsidian, and figurine fragments (Braidwood 1983:164).

Macro context

From the 7 meters of archaeological deposits investigated during the excavation of Jarmo, the following is known about the economic and political situation in the Zagros during the 7th millennium BC. Identified as an early farming community, Jarmo subsistence relied on settled agriculture, hunting and gathering. This theory is built on the finds of cultivated barley, einkorn, emmer and legumes that the excavations of the site revealed. Also amongst the upper levels were remains of seemingly domesticated pigs. The structures all seem to have conformed to a homogenous building tradition of rectangular houses with several small rooms and an adjoining courtyard, made of tauf (packed mud). A stone foundation is almost always revealed underneath the clay floors. Bins for storage and domed clay ovens were also typical at Jarmo (Oates & Oates 1976:83-84). The Braidwood's and Howe agree that there is no reason not to assume, that the farming-village was settled year round by single family units (Braidwood 1983:164).

5.2 TEPE GURAN

Geography and history as an archaeological site

At the northern fringe of the Hulailan in Luristan Iran, the small mound of the 7th millennium site Tepe Guran is located at an altitude of ca 950 m. The site is situated on a fertile agricultural plain 140 m from the right river-bank of the river Jazman Rud. As part of the Luristan network relating to the *Luristan Bronzes*, archaeologists were no strangers to the view which met them at Tepe Guran. Here the landscape was spotted with holes dug in search of graves and the bronzes which had been found there in the early 1930's (Meldgaard 1964:103-104).

Excavation method and stratigraphy

Several excavations were performed at Tepe Guran, but the research which is of interest to us, is sounding (GI) from the Neolithic era at the site which began at the top of the mound and worked itself downwards. So that the workers could compare and check the progress of the GI stratigraphy while digging it, the excavators simultaneously dug a parallel trench, a method which proved to work quite well at Tepe Guran. An estimate shows that closer to 220 m³ of deposit from Guran was inspected during the 1963 expedition. 21 distinguishable layers of occupation were revealed and lettered from A to V from the latest to the earliest dates. Virgin soil was reached underneath level V and proves that level V is the earliest level at the site. The first appearance of structure-remains was the well-built mud-walled houses of level P (Mortensen 1964:110).

Despite that many Luristan sites were heavily disturbed, the stratigraphy at Tepe Guran was clear, easy to distinguish and contained few disruptions. Although limited in area, the excavation did uncover one millennium of settlement activity from approximately 6500 to 5500 BC (Meldgaard 1964: 104).

Token assemblage

The total number of tokens recovered from Tepe Guran is 34 pieces. Contexts for all 34 are unknown, but 2 clay spheres and 2 clay cones were located in tombs. A unique stone sphere was also among the assemblage from Guran, but the context of this sphere was never documented (Schmandt-Besserat 1992:42-43).

Micro context and associated artifacts

The two recorded contexts for tokens from Tepe Guran are Tomb 13 (GI 1219), and Tomb 9-11 (GI1236). Description of Tomb 13 is very poorly documented and was hard to locate in the archaeological reports, however it is known that a set of 1 clay cone and 1 clay sphere was found in Tomb 13, just as they were found in Tomb 9-11.

Although more recent research from Tepe Guran do separate Tomb 9 and Tomb 11 as separate entities, the original excavation by Mortensen saw them as the same burial because of their proximity to one another. The location of the pair of tokens (one sphere and one cone) is not specified to which tomb they were within, and a separation of the two would in this case be counterproductive. Tomb 9 and 11 belong to section C of the Neolithic levels in square G-I and the two pits join at the north-eastern end of T 9. The tombs had covering stone slabs (Thrane 2001:28-30). The stone slabs of T 9 were covered in pottery sherds and the pit fill was homogenous sandy humus with limestone chunks and small limestones. Fill in the eastern end stood out compared to the rest - loose, dark grey fill spotted with charcoal fragments. Within, one male adult skeleton was found covered in hard lumps of clay. A deposit of grave goods was placed in the eastern end of the grave (Thrane 2001:30). The burial chamber of T 11 was covered by 3 large stone slabs, and this tomb also contained a male skeleton of mature age. These remains were rather squashed and poorly preserved (Thrane 2001:34-35).

Macro context

Lack of stone tools until level P indicate that the first villagers who settled Guran were herdsmen who lived in wooden huts. Agriculture developed slowly but steadily through the later levels. The flint and obsidian industry at Guran was based on flakes and blades. Conical micro blade cores were numerous, but only a genuine few were microliths. More than 80% of the pieces had not been retouched, which most likely does indicate available raw material in the vicinity. Flint was estimated to represent 90-95% of the lithic industry (Mortensen 1964:118-119). The walls of the houses from Tepe Guran were made of oval, unbaked mudbricks faced with straw-tempered mud-plaster on a foundation of stones. Walls and floors of the later phases show traces of a thin layer of white or red gypsum. The rooms were small with thick walls and some had cleared space for benches, tables or ovens. Compared to their Bronze Age predecessors the villagers of Tepe Guran did not own or need much (Mortensen 1964:110-111).

5.3 HAJJI FIRUZ

Geography and history as an archaeological site

The 6th millennium site of Hajji Firuz Tepe is located in the northeast of the Solduz valley in Iran. The summit of the Hajji Firuz mound stands 10.3 m above present level, and the site has an oval plan-extension of 140 x 200 m base wide. Archaeological field work has been performed here for numerous years, from the first surface surveys in 1936 by Sir Aurel Stein to major archaeological fieldwork performed by the Hasanlu Project in the late 1950's and early 60's (Voigt 1983:7).

Excavation method and stratigraphy

The area which was dug during the 1968 excavations at Hajji Firuz was divided into a series of 5 m squares. Each square was dug and recorded independently. This grid spaced system of 5 m squared intervals provided enough stratigraphic information between the structures, while also allowing the clearance of architectural units to move quickly and efficiently. Most artifacts and bones recovered from the 1968 excavations were plucked from their contexts in the small amounts of soil removed with the picks. Trash bearing strata were shoveled and sieved, however if after an hour of sieving the strata seemed empty, sieving was discontinued and an error in recovery must be assumed (Voigt 1983: 12-13).

Phases from Hajji Firuz are strategically referred to by capital letters from A to L, beginning with the latest phases at the top. The same logic was applied to the buildings when they were recovered, being numbered at the beginning from 1 to XVIII. If there was evidence of changes of features within structures or evidence of new floors corresponding to major stratigraphic breaks, those construction phases were labelled with Arabic subscripts (Voigt 1983:21).

An estimated timeline for the use of Hajji Firuz phases built on ethnographic analogies show that an average Hasanlu house will be used for 30 consecutive years. Only one phase (phase A³) from the Neolithic settlement is believed to have been occupied 30 years without restructuring. Phases B and C are believed to have half of the lifespan of phase A³ and the structures from these occupational levels are estimated at approximately 15 years. Despite these estimates, different ethnographic experiences show a wide spread in how long houses were in use and an estimate is all that an analogy can provide. Ethnographic analogies from Iraqi Kurdistan villagers agree that the life-span of mud-brick structures is equivalent to 15

years, while villages in central Zagros near Kermanshah estimate that with good maintenance a mud-brick structure can be used for 50 good years (Voigt 1983:19-20).

The stratigraphic phases which are of interest to us, are those layers which procured tokens, this includes: A³, B, C and D. Chronologically Phases A³ through D belong to the second half of the 6th millennium BC and each phase corresponds to the construction or abandonment of one or several structures.

Token assemblage

13 tokens were located at Hajji Firuz. Of the 13, 10 cones were made of fine clay with little impurities and 3 tokens were modelled of untempered clay into the shapes of an irregular ball, a hemisphere and a nipple-like disk. These were all cataloged as *miscellaneous geometrics*. The cones were 1.5 to 3 cm tall with a diameter of 1.5 to 2.2 cm. Due to the dark gray interior and gray to brown matte surface color, the cones seem to have been lightly fired. The irregular ball could be a damaged sphere. The nipple-shaped disk is still a single representative (Voigt 1983:181-184). 6 of 10 cones appear to be slightly chipped and damaged (Voigt 1983:195).

Micro context and associated artifacts

Voigts careful documentation of the artifacts spatial distributions during the excavation of Hajji Firuz lends important information on the detailed context of tokens at a Neolithic settlement.

Token	Phase & Context
Field No. HF 68-104: Cone	Phase A ³ Str II ₁ , Ossuary, lying above human bones. F11 Bur. 3.
Field No. HF 68-107: Cone	Phase B. Lensed trash and clay overlying Str II ₁ .G11 exterior.
Field No. HF 68-190: Cone	Phase B. Trash level with burnt material. K11 exterior.
Field No. HF 68-114: Sphere	Phase B. Ashy trash in shallow pit. G11 exterior.
Field No. HF 68-216: Hemisphere	Phase B. Lensed trash and clay overlying Str II ₁ . H12 exterior.
Field No. HF 68-158: Cone	Phase C. Trash on surface between Str II ₁ and Fea. 13. G12 exterior.

Field No. HF 68-170: Cone	Phase D. Lying above bones of H12 Bur. 3, between floors of Str VI.
Field No. HF 68-171: Cone	Phase D. Lying above bones of H12 Bur. 3, between floors of Str VI.
Field No. HF 68-172: Cone	Phase D. Lying above bones of H12 Bur. 3, between floors of Str VI.
Field No. HF 68-189: Cone	Phase D. Lying above bones of H12 Bur. 3, between floors of Str VI.
Field No. HF 68-195: Cone	Phase D. Lying above bones of H12 Bur. 3, between floors of Str VI.
Field No. HF 68-212: Cone	Phase D. Trash between floors of Str VI.
Field No. HF 68-81: Nipple	Phase D. Mud collapse. F11.

Table 3. Types of tokens and find contexts from Hajji Firuz (Voigt 1983:196-201).

All of the tokens from Hajji Firuz were found together with associated artifacts such as pottery sherds and debris, while 7 of the tokens were also found together with animal bones (Voigt 1983: 85-88)

Structure II₁

The most complete example and best identified house from Hajji Firuz is Structure II₁ which belongs to Phase A³. Excavations were not far from extracting the complete plan of the structure and the preservation of the interior features were excellent. The building is square-shaped with an entrance on the eastern side. Walls were constructed of yellow-brown mud brick, with exterior walls and beams to support the roof. Although architectural details varied throughout its occupation, little with the basic plan was altered. The latest part of its occupation witnessed a division of the building into two with a low ridge of packed mud as an interior partition. In the southern room (Room 1) floors were made of yellow clay and during excavations 4 layers of floor were unearthed. There was found little debris between the layer of floors, which shows that they were kept relatively clean. A particular difference in the level of “cleaning” may contribute to the analysis of what the different rooms functioned as. The northern room was partitioned into two areas, area 1 had dirty irregular floors and was repeatedly coated with mud plaster. Area 2 had four floors composed of yellow clay with irregularities and one dark red floor (Voigt 1983:37-41). Other unique

features include two contiguous bins of mudbrick were located opposite the entrance to the structure. These “bins” contained F10 Burial 1 and F11 Burial 3.

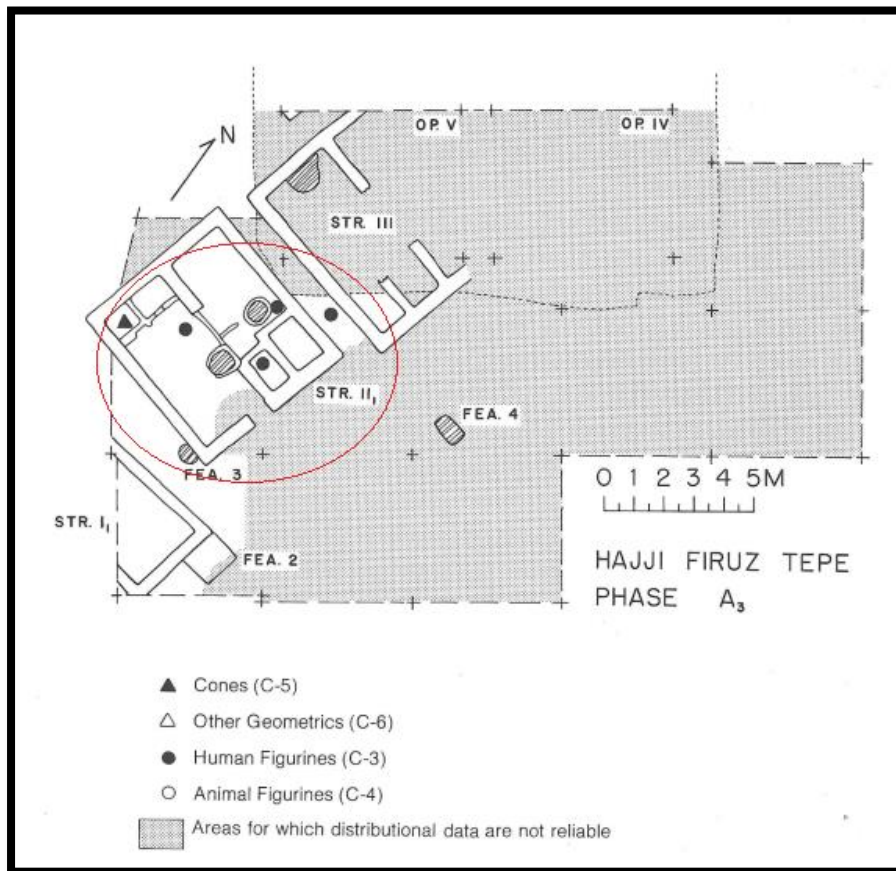


Figure 5. Hajji Firuz - Phase A³ demonstrating Structure II₁ and token locations (Voigt 1983:196).

F11 Burial 3

F11 Burial 3 is an ossuary grave belonging to Phase A³ which was located inside Bin 2 of Structure II₁. The bones of minimum 4 individuals were placed inside this shallow bin constructed of packed mud and/or irregular mud bricks. This was covered by a layer of clean clay. According to analysis the individuals buried were 2 adults and 2 children. The adults were laid out northeast-southwest with their skulls facing the interior of the house (northeast). Together with the bones, grave furniture in the forms of 11 spindle whorls, 1 token (cone), one stamp, a celt, a used core, a cup, a very small jar, a stone ball, a polishing pebble and a scapula scraper were found. In addition to these artifacts, 8 fragmentary animal bones were mixed with the human bones, these have been identified as pig mandible, scapula, vertebra and humerus, a sheep/goat metatarsal and a tibia from a wild *bos* (Voigt 1983: 83-84).

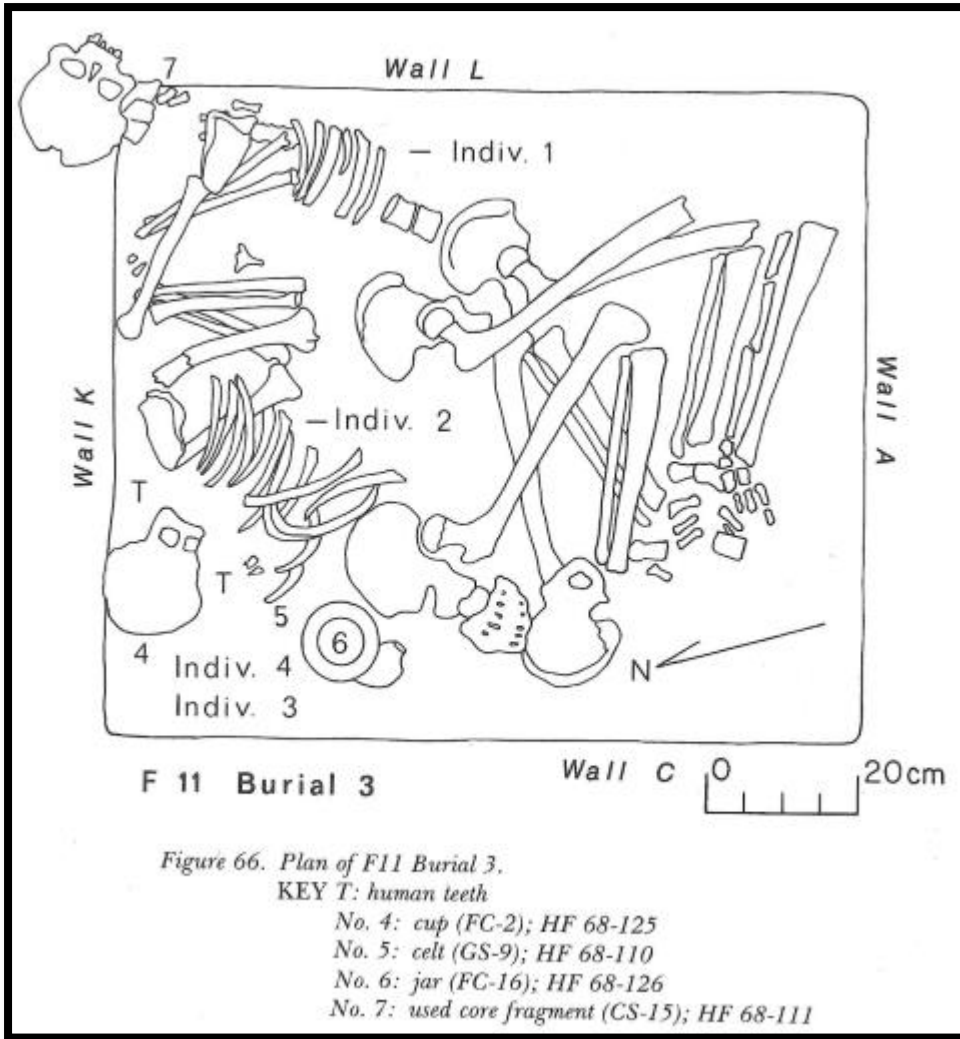


Figure 6. Hajji Firuz - F11 Burial 3 (Voigt 1983:84).

Structure VI

The best preserved structure from Hajji Firuz is Structure VI. From the complete artifact distribution at Hajji Firuz we can see that the largest concentration of tokens is found within “Structure VI” and its surroundings/ruins (Voigt 1983:304). Structure VI was constructed during Phase D in yellow bricks and with yellow clay mortar. The original floors from Phase D are referred to as Structure VI₂, and in Phase C the floor was re-laid and anything found in Phase C is referred to as belonging to Structure VI₁ (Voigt 1983:47).

Within the structure there was found a number of unusual elements, such as a mud plaster feature composed of a low platform set between two blocks with central depressions and an asymmetrical horseshoe shaped hearth. There are no significant finds of chipping debris found in or around the structure, but a decent amount of tokens was associated with the

building. Human and animal remains were found in the floor ossuary (H12 B3) from phase D (Structure VI₂).

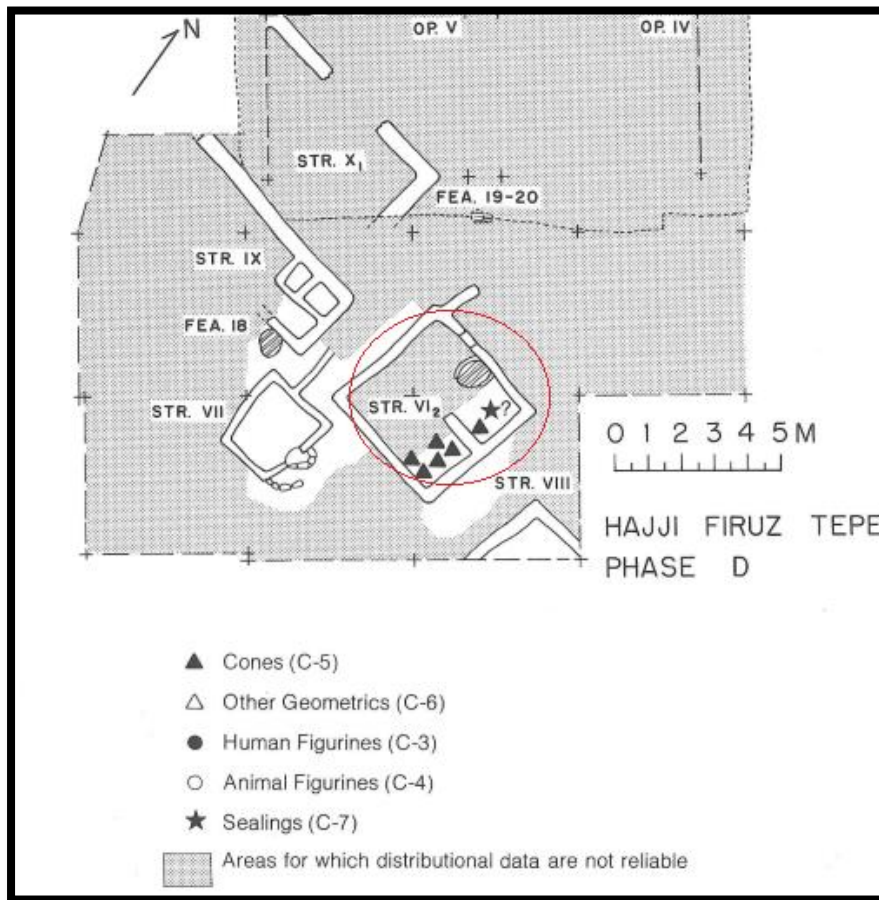


Figure 7. Hajji Firuz - Phase D demonstrating Structure VI₂ and location of tokens (Voigt 1983: 200).

H12 Burial 3

H12 Burial 3, a floor ossuary, belongs to Phase D and was located in Structure VI₂ along the south wall. Multiple individuals were here buried along with animal bones in a soft deposit where burnt clay and charcoal was also uncovered. The grave was sealed underneath Structure II when the second floor of the building was laid down. H12 Burial 3 contains only fragments of minimum 4 individuals, the burial seems to have been secondary and no skulls were recovered. The bones belong to individuals between the ages 2 to 21 years old. Of the animal bones, cranial fragments and horns identify red deer, goat and sheep, but there was also found pig teeth (Voigt 1983:86-87). Directly above the human and animal bones grave furniture in the form of 5 clay cones (tokens) were located on top of the deposit (Voigt 1983:315).

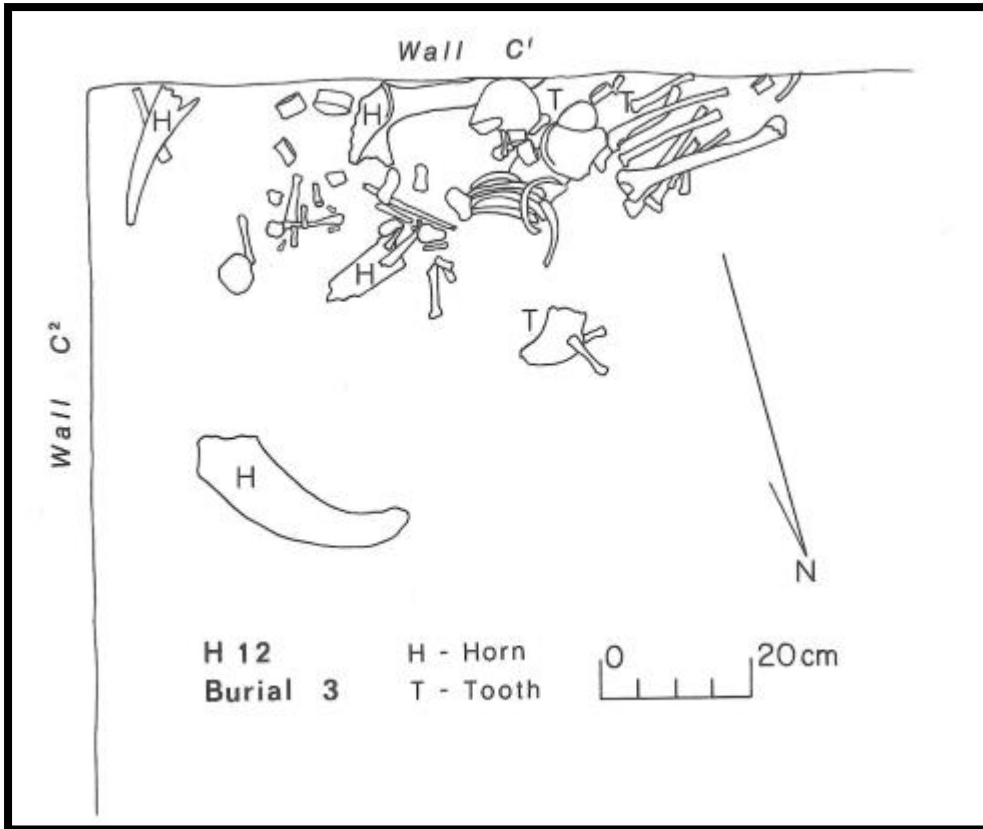


Figure 8. Hajji Firuz - H12 Burial 3 (Voigt 1983:87).

Macro context

Reconstructions of the subsistence economy of Hajji Firuz is built on the floral and faunal remains recovered from the site during the 1968 excavations. The subsistence economy was based upon the cultivation of cereals and pulses, the herding of sheep, goats and pigs, hunting and gathering, and perhaps fishing. A quick survey of the surroundings reveal access to permanent water sources, seasonally flooded land, and land with a high water table, all important resources for a sedentary people. Thanks to the dry environment the storage facilities were greatly preserved and today they stand as the only evidence of agrarian activity at Hajji Firuz. Agricultural implements are either none identifiable in the artifacts recovered from Hajji Firuz, or the tools they used were of natural deteriorate material (Voigt 1983:282).

There are a few technological activities which seem as if they always appear in vicinity to one another, these include the manufacture of chipped stone tools, the manufacture of wood, bone and shell artifacts, pottery, storage, and the cooking and serving of food. Information varies between phases, but a compilation between phases D through A³ at Hajji Firuz make it

possible to make a few general assumptions on which activities belonged to individual dwellings, but also within the village as an entity on its own (Voigt 1983:305-306).

Buildings from Hajji Firuz were freestanding units constructed in mud with wooden roofs. With a few exceptions the outer walls were in most cases constructed of mud bricks. They were rectangular or square in plan with the long axis of the rectangular buildings running east-west. Building size varied, but on the lengths that could be extracted, an average length of 6.4 to 7.3 m has been estimated. Width ranges from 5.3 to 6.7 m. Many structures were badly damaged and only 3 doorways have been located due to the poorly preserved walls. The few doorways which were located, were situated on the east wall, perhaps to shield from the worst winds from the west (if wind patterns have not changed too drastically). Buildings were identified as dwellings or “houses” through interior features and content which reliably can be defined as domestic (Voigt 1983: 31-32).

The houses from Hajji Firuz were divided into two main rooms. One, which was dubbed the “living room” had clean clay floors, and these were continually re-laid. In addition to a clean floor, the living room contained a hearth and the archaeological evidence implies that the space was used to cook and serve food, while also storing and dispensing liquids. Evidence of the production of chipped stone tools also occurs within the living room. The household ossuary was also located in the living room and the decoration was more elaborate than the other room of the house. Room number two, the “utility room” is divided by partition walls. The floor was uneven, and the surface was littered with trash. In some cases, subfloor burials were present in the utility room. Potsherds, vessels, cereals and pulses, milk, milk products and what is thought to be beer was found distributed within the utility room. These artifactual remains together with equipment used in textile manufacture lead the excavators to interpret the utility room as a space for storage or discarding (Voigt 1983:306)

Although each house is independent the space between the units are open and cooperative activities such as cooking and firing pottery is represented through the artifacts left behind. Cooperative activities which most likely did occur, but are hard to document, is the pooling of animals to form viable herds, the construction of houses and tough agricultural. Work with pottery is thought to have been performed by women. In contrast the manufacturing of flint and obsidian artifacts is thought to be performed by the men. One example of a space which could have exclusively been for the women, or exclusive for pottery making is the communal pottery kiln, where no evidence of flint or obsidian have been found, within or in the surrounding area (Voigt 1983:313-314).

5.3 TELL ABADA

Geography and history as an archaeological site

East of the Diyala River and 12 km southeast of Al Sadiyah, the 5th millennium village site of Tell Abada is located in an agricultural plain along the Zagros foothills of Iraq. The oval site covers 190x150 m and rises to 3.5 m above its surroundings. Rescue excavations were conducted here by the Iraqi State Antiquities Organization from the middle of December in 1977 until the end of July in 1978. Chosen for its excellent condition, a complete 80% of the total area of the tell - both horizontally and vertically was excavated (Jasim 1983:165).

Excavation method and stratigraphy

Tell Abada was divided into regular squares 10x10 m each, separated by 1 m wide baulks. Digging was centered around the squares which represented the middle of the mound and expanded from there. Archaeological work at the site revealed three distinct levels of settlement. These three levels were traced 6 m. in depth and the earliest level, level 3 - was settled on virgin soil. Excavations from level 3 were not as extensive as the two later levels, level 1 and 2, but over half of the area belonging to level 3 was dug (Jasim 1983:166-169).

Two buildings, building A & B are the only surviving architectural features from *level 3*. Within the buildings there were excavated large storage jars, red ochre, grinding stones, plano-convex disks and 2 large pottery kilns. Although it is interesting that no tokens were discovered in level 3, little attention will be paid to this level. Because 50 to 70 cm of fill separated level 3 from 2, the sites was most likely abandoned for a short period of time (Jasim 1985:18).

Level 2 of Tell Abada was entirely excavated, and from the basis of architectural and artifactual remains it was dated to Ca. 4800-4500 BCE. In contrast to level 3, there are ultimately 10 well preserved structures from level 2, and these 10 are surrounded on all sides by less preserved, but nonetheless visible building remains. Between the structures the original streets and squares can be made out. During the excavation of Tell Abada level 2, buildings were assigned letter labels, beginning at A and ending at the tenth building "J". Buildings in level 2 are in true Ubaid tradition constructed in a tripartite plan, with a central room flanked by smaller rooms on each side (Jasim 1985:19).

Level 1 is situated the closest to the surface of the mound, and is the youngest level at Tell Abada. This phase revealed 7 coherent structures and these represent a continuation of the earlier buildings from level 2. Although not all the structures survived from level 2 (B, G and I), the ones that were found in level 1 (A, C, D, E, F, H, J) were almost in the same place as earlier, and therefore kept their labels from the previous occupational level. New features from level 1 were the remains of a water-channel system and a new system for storing grains. Other than a few adjustments, there is a clear continuation pattern at Tell Abada (Jasim 1985:27).

Tell Abada is especially important because of the meticulous recording performed by its team of excavators. Here, the location of the majority of tokens is confounded to one single structure and the information both includes level of occupation, room numbers and careful descriptions of associated artifacts.

Token assemblage

There is a good collection of tokens from the 1977-78 excavations of Tell Abada. These geometric shaped objects were all handmade in clay with the exception of a few spheres which were fashioned in stone. Inventory from the excavations at Tell Abada include the most common four plain token types; spheres, cones, disks and rods, and their respective subtypes. Of the total 90 tokens discovered at Tell Abada there were 42 spheres, 32 cones, 8 disks, 4 rods and 4 “varia” (Jasim & Oates 1986:355).

Micro context and associated artifacts

The two tables and figures underneath reveal the micro-context of the tokens from Tell Abada, the types of tokens which were recovered, the rooms they were found in and the associated artifacts that the building housed (Jasim 1985:69-73).

Tokens	Context: Building A Level 1
8 spheres, 4 cones, 2 disks, 1 rod and 1 plain “tablet”	Unpainted, carinated bowl of Hajji Muhammed type, floor of room 2.
1 sphere, 3 cones, 3 tablets	A bowl, floor of room 7.
4 spheres, 3 cones	A small painted jar, floor of room 24.
3 spheres, 6 cones, 1 rod	A small shallow bowl, floor of room 27

Table 4. Distribution of token types in Building A level 1 (Jasim & Oates 1986:355).

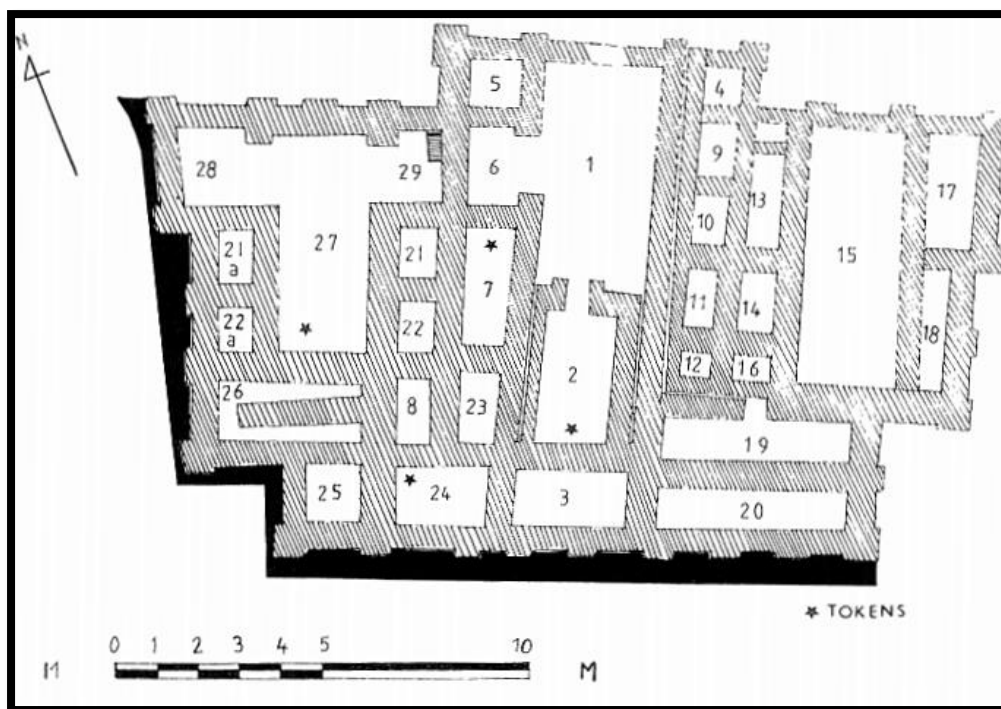


Figure 9. Tell Abada “Building A” level 1. (Jasim & Oates 1986:354).

(Picture explanation: The stars indicate where tokens were found, the numbers indicate rooms).

Tokens	Context: Building A Level 2
8 spheres, 4 cones, 1 disk, 1 rod	A large jar of Dalma impressed type, room 1.
3 spheres, 2 cones, 1 disk	Small unpainted jar, floor of room 7
1 sphere, 5 cones, 2 rods	Floor of room 7.
4 spheres, 1 cone	Small jar, floor of room 26.
4 spheres, 4 cones, 1 disk	Medium-sized jar, floor of room 27.
2 spheres, 2 disks	Floor of room 28
4 spheres of different sizes	Floor of room 29

Table 5. Distribution of token types in Building A level 2 (Jasim & Oates 1986:355).

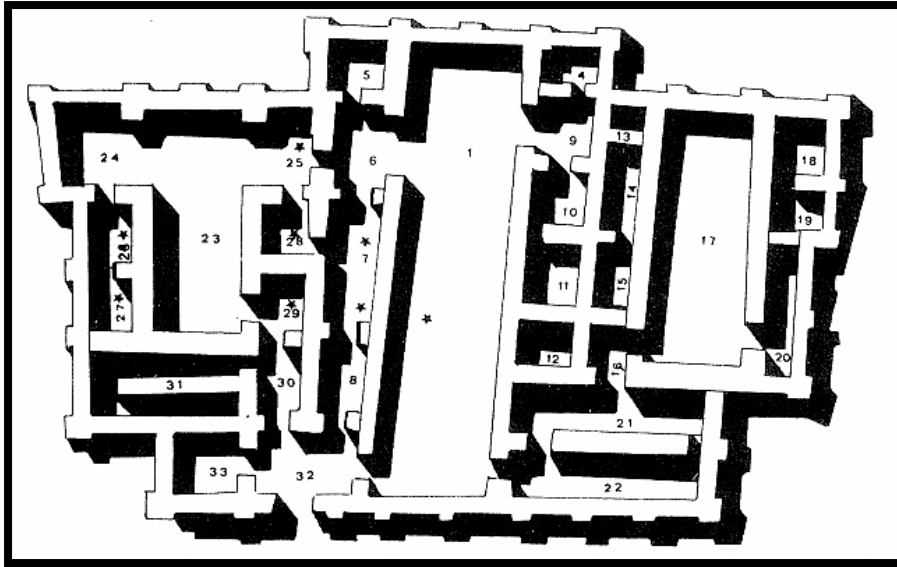


Figure 10. Tell Abada “Building A” *level 2*. (Jasim & Oates 1986:354).

Building A

At the center of the settlement during *level 2*, stood Building A, a structure which measured at 20 x 12.5 m. It had a tripartite plan, with a big hall (10.2x3m) in the middle sector which was flanked by smaller rooms. The main entrance to the building was 80 cm wide and was located on the southwest corner. Four benches were attached to the northern wall of the big hall, with one additional bench on both the eastern and western wall. The hall divided into two by a wall, but this was not part of the original plan, but an addition which occurred after the building was finished. The western side was attached to a t-shaped courtyard, while the east side contained courtyard “17”. Supporting the exterior walls were 29 buttresses. The wall which divides the main hall, proves that the building was not left untouched. In fact, it contains multiple traces of renovations. Three successive floors made of beaten clay are evident in every room of the building and the walls show wear by having been frequently coated by clay plaster and gypsum (Jasim 1985:19).

“Building A” from *level 1*, was situated directly on top of the prior building from level 2, and the original walls were kept as construction plans for level 1. Changes that occurred to the building include a new placement for the entrance. The new entrance was not located during excavations, but where the level 2 entrance had been, was in level 1 replaced by heavily plastered mudbrick. All the doors which existed in the unit during level 2 had been sealed off by mudbrick. Other changes include a few more rectangular rooms, and a few additional walls (Jasim 1985:27-28).

In tables 4 and 5 the micro-context of the tokens are mentioned together with a list of associated artifacts collected in the same rooms as the geometric figures. They include: jars, bowls, and burial urns.

Macro context

The presence of Ubaid villages in the Hamrin region is often attested to the Diyala River and its tributaries the Kurderreh and the Narin Chai. The presence of this large, wide, alluvial depression chand which turns into a torrential river in winter and spring, and provides pools of water during the summer, must have been a considerable factor for the people of Abada when they established their village. Archaeological evidence of the exploitation of the chand and the Kurderreh River were confirmed by the water pipes found in situ, pointing in the directions of the two water supplies. Close water resources and fertile soil implies that agriculture was not only a viable option for the people of Abada, but also a quite lucrative choice (Jasim 1985:186).

Paleo-botanical residue recovered from Abada provide evidence that the Hamrin region experienced winter agriculture. Abada excavations have attested the presence of emmer, einkorn, bread wheat, hulled and naked six-row barley and two-row barley (Jasim 1985:191). Bones from Abada provide information on husbandry in the 5th millennium site. Sheep and goats were domesticated, cattle were found in both wild and domesticated forms. The large amount of wild animal bones found, indicate that hunting still supplemented the diet of people in Abada, although they did practice a sedentary lifestyle. 37.78 % of the animal bones were gazelle, but there were also evidence of deer, onager, and wild boar (Jasim 1985:192). Tell Abadas placement in the central part of Iraq provides a link between the northern and southern Ubaid sites, and the presence of both northern and southern cultural traits were both welcome as the material record demonstrates (Jasim 1983: 184).

The near vicinity of the site to the Diyala river, together with the paleo-botanical and faunal remains make for convincing proof of a thriving agricultural economy in 5th millennium Tell Abada. Specialization toward the industrial is confirmed by a large number of domed ovens which must have been used to fire the great quality of pottery vessels found at the site (Jasim 1983:184).

The village plan and traditional architecture of Tell Abada is a testament to the Ubaid period and it is not without reason that these building techniques were further developed and made even larger and grander in the Eanna Precinct at Warka (Jasim 1983:184).

5.4 TEPE GAWRA

Geography and history as an archaeological site

In a district north-northeast of the ancient city of Nineveh in Iraq the landscape is filled by a number of pre-historic and historic mounds. The largest of these mounds is a 5th millennium site known as Tepe Gawra which translates to “The Great Mound”. The ancient site owes its existence to the body of water *Jebel Bashiqa* and as its location was both protected by a range of hills and was in the vicinity of an important pass towards the Tigris, there came as no surprise that the site suffered little abandonment. Shaped like a truncated cone the mound steadily rose to a height of 22 m and had a diameter of 120 m at the base (Speiser 1935:2-4).

The first to show interest in The Great Mound was Austen Henry Layard closer to 160 years ago. He opened up a few trenches in the sides of the mound which revealed a few fragments of pottery. As he expressed in *Discoveries in the Ruins of Nineveh and Babylon* in 1853 the site was worthy of more extensive study than that he could deliver in that moment of time (Speiser 1935:3). 21 Strata from Tepe Gawra were revealed through two campaigns at Gawra. First a campaign in 1931-1932 which covered the first strata 1 through VIII, and an additional 5 campaigns were performed at Tepe Gawra from 1932 to 1938 where strata IX-XX were uncovered and investigated (Tobler 1950).

Excavation method and stratigraphy

The uppermost levels of the mound are dated to the middle of the 2nd millennium BC and an examination of the lower two-thirds of the Gawra mound identified with the Chalcolithic period of Iraq, ca 5000 BC. Because of the narrowness of the mound and the few disturbances of the site, the physical conditions were ideal to create a clear stratification through the careful excavation of layer after layer (Speiser 1935:4-5).

Strata 1 through X were fully exposed in accordance to the original plan, which was to systematically investigate the whole mound layer for layer. However, when Stratum X-A was to be exposed, the mound which had grown wider by every level uncovered, was too big to fully excavate. From Strata X-A a restriction to uncover 1/3 of the layer was imposed on the excavation of the mound. Upon reaching level XII adjustments had to be made again, on how much area was worth uncovering. The clearing of Strata XI-A had exposed a section of a curved wall, and the decision to uncover it completely was made, hence clearing the removal

of X-A and XI layers which covered what they would discover to be the Round House (Tobler 1950:2).

Token assemblage

The token assemblage from Hajji Firuz includes both a wide variety of terra cotta pieces and stone tokens. Their distribution within the site is synonymous, but as the table below will show, the contexts do vary slightly. Amongst the repertoire there are spheres, disks, ovoids, hemispheres, hemispheres with knobs, pyramids and anthropomorphic shapes including what looks like an animal knuckle. Amongst the stone tokens there are alabaster and marble.

Micro context and associated artifacts

Stratum/Context	Stone tokens
XIII	
IX	
X Context: Tombs 102, 107, 110. Total # 35	Spheres of alabaster and marble.
X-A	
XI	12 spheres, 7 disks, 7 ovoids. Context: Debris.
XI-A Context: Child burial. Context: Unknown	4 spheres, 3 hemispheres, 2 hemispheres with knobs. + 3 disks, 2 marble spheres.
XII	2 marble spheres, 1 disk of white marble.
XII-A	
XIII	Disk of gray limestone.
XIV	
XV	“Animal knuckle” in white marble.

XVI	
XVII	Pyramidal shape.
XVIII	
XIX	
XX	

Table 6. The distribution of stone tokens in contexts from Tepe Gawra (Tobler1950:205).

Stratum/Context	Terra Cotta tokens
XIII	
IX	3 spheres and disks.
X	
X-A	
XI Context: Hoard	6 small spheres.
XI-A Context: Room K, Round House.	6 bottle shaped, 2 pyramidal, 2 hemispherical pieces crudely made.
XII	
XII-A	
XIII	2 anthropomorphic shapes, 1 conoidal object with knobbed top.
XIV	
XV	
XVI Context: Scattered throughout the stratum.	9 anthropomorphic shapes, 3 conical “gaming pieces”.

XVII	1 anthropomorphic shape.
XVIII Context: Adult grave.	34 pieces, resemble “nail-shaped mullers”.
XIX	9 small crudely shaped cones.
XX	

Table 7. The distribution of clay tokens in contexts from Tepe Gawra (Tobler 1950:170).



Figure 11. Tepe Gawra - The Round House of Level XI-A (Tobler 1950 Plate XXXIV).

Round House in stratum XI-A

In stratum XI-A, the occupational level was dominated by a large construction with a circular plan, a house dubbed the “Round House” which was located slightly northeast of the mounds center. Although the cultural remains of the strata did not differ from the prior levels, this structure alone separated XI-A in an architectural sense from the other strata (Tobler 1950:17). Excavations of the occupational level was confined to the northern and eastern sectors of the mound, with the exception of necessary extensions into the southwest, so as to fully reveal the entire scope of the structure. What excavations revealed was the largest structure yet to be discovered from Gawra. The outside diameter was measured to range from 18 to 19 meters of a nearly perfect round house with an opening at the west end. Mud bricks were the preferred building material and they were measured from 50-56 cm long, with a width of 26-28 cm and a 10 cm thickness (Tobler 1950:21). This was an extraordinary building with massive walls, a single ramp-protected entrance, of course the round ground

plan, but also a rich inventory. Within the Round House there were numerous celts, mace-heads, and hammer-stones, all which contribute to many interpretations of what function this structure employed. The Round House stood isolated from the rest of the buildings, with the exception of the thin walls of a few private houses that were constructed contiguous to the larger building (Tobler 1950:20). The interior layout of the structure was divided into 17 rooms, 11 rooms which shared the curved exterior wall of the building and 6 rectangular rooms in the middle of the building. Every corner in every room of the building aligns with the cardinal points of the compass, such as was norm for the temples discovered at Gawra. Only one room is furnished with definite clues as to explain what was its use, Room G produced carbonized kernels of grain in its walls, indicating its use as a granary (Tobler 1950:22).

Graves

Locus 7-58 Adult grave in stratum XVII-XVIII: Locus 7-58 is a simple inhumation from Stratum XVII. It is one of the few fractional burials from Gawra which has no natural explanation for decayed or missing bones. Grave furnishing found in Locus 7-58 includes a clam shell and 34 conical terra cotta objects with bent tips (tokens). They were placed on both sides of the skeleton, pelvis height, while one single specimen was placed by the ribs (Tobler 1950:110-116).

Tombs 102, 107, 110: Tombs 102, 107 and 110 are located in Squares 5-M and 6-M and all belong to Stratum X. The floor elevations of both 102 and 107 both occur within a range of 32 cm. The distance between the tombs is 1.5 m, - but they were oriented on the same north-northwest to southeast axis, a unique phenomenon which only occurs with these two tombs. The tomb walls of T 7 are parallel to the overlying building 1003 walls, an alignment unlikely to be coincidental (Tobler 1950:59-60). Tomb 102 lying outside the “shrine” building 1003 also contained stone spheres, for this coincidence furnishes another link in the relationship between Tombs 107 and 102. Tomb 110 is part of 4 tombs located in Squares 4 and 5, M and K. They were all constructed at the bottom of shafts just below Stratum XI floors. One can trace the shaft of tomb 110 back to its starting point in stratum X. Tombs 107, 102, and Tomb 110 all contain stone spheres (Tobler 1950:60).

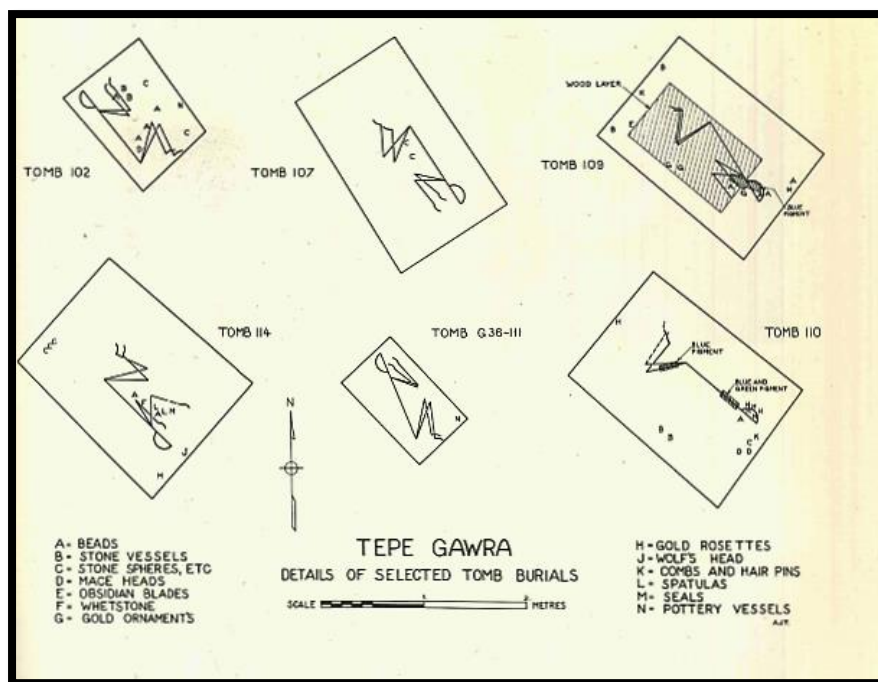


Figure 12. Tepe Gawra - Tomb 102, 107 and 110. (Schmandt-Besserat 1992:103).

Child Burial XI-A Locus 181: Locus 181 is a simple inhumation of a child associated with the Stratum XI temple, which is associated with another 29 graves. This particular grave was unearthed under the central chamber of the temple (room 4) and specifically it was located between the west corner of the podium and the wall, which consequently separated the chamber from room 5 (Tobler 1950:101). Not only was the placement of this burial quite remarkable and by some interpreted as a sacrificial burial, but also the grave furnishing was unique. The child buried in Locus 181 was accompanied by a gold rosette and a gold disk-shaped ornament – both were placed by the skull. While by the hands and knees piles of stone tokens (interpreted by Tobler as “gaming pieces”) were located. Beads of stone and gold, were also part of the furnishing and these were laid by the wrists of the child. This is the richest tomb found from Tepe Gawra (Tobler 1950:116).

Macro context

Tepe Gawra is located between the Tigris River and the first foothills of the Zagros Mountains, and a stone throw away from the first documented entrance pass onto the Iranian plateau. This ideal position will have made Gawra a transport link in trade for the goods which travelled from the Zagros highlands and from the Upper Tigris into Mesopotamia (Peasnell&Rothman 2003:35). Also ideal about its placement amongst the ecological zones by the steppes, the piedmont, and the hills is that they are perfect for rainfall agriculture,

hunting and pastoralism (Peasnell&Rothman 1999:105). On the basis of architecture, town plans, and activity areas, Gawra can be categorized as a “small center” in the piedmont, which accommodated farming villages and pastoral nomads. The site revealed agricultural tools and weaving instruments, in addition to caprid bones. If the villagers of Gawra wanted for anything they could enter into trade. Two elements are invaluable for interpreting Gawra as more than a village; first there is the two large buildings which appear to have been facilities for storing grain associated with broken sealings and what has been understood as the precursor to the beveled rim bowl, the wide flower pot. Secondly, there is a series of rooms with an area of binds behind them, which appear to be stations of craft goods and the disposal of manufacturing material. The wealth that these productions provided are shown in the care taken with the dead (Peasnell&Rothman 1999: 106). The dead were placed in tombs, simple pits, vessels or pits with walls at their back. Grave goods were placed intentionally and the richness varies from pots or necklaces, to exotic beads, obsidian cores, lapis lazuli, seals, tokens, and in rare cases collections of gold. In many ways what is known about the social differences from Gawra is depicted through the investment made in burials. Cemeteries can after all be viewed as communities for the dead and here both the divine are represented, and the less fortunate. Wealth, religion, and ethnicity are all revealed and preserved in the dead (Peasnell&Rothman 2003:37-38).

5.5 WARKA

Geography and history as an archaeological site

In the year of 1849 W.K Loftus discovered the ruins of Uruk, situated perfectly between the Tigris and the Euphrates in Mesopotamia. Today, the current name of the ancient city of Uruk (in Iraq) which prospered during the 4th millennium BC is called Warka. Warka is located 60 km west-north-west from Nasiryah and today considered a cornerstone of Mesopotamian archaeology.

Because the significant finds from the city also gave name to the culture associated with it, to avoid any confusion the ancient city is referred to as Warka, and the culture is called *Uruk*. The diffusion and spread of the characteristic Uruk material was so grand that the time period in Mesopotamia is also named after the ancient city and culture (Charvát 2002:98). The period is roughly divided into three; Early Uruk (4200-3900 BC), Middle Uruk (3900-3350 BC) and Late Uruk (3350-3100 BC) (Wright 2001:125-126). During the Late Uruk archaeological material at Warka is found distributed over 250 ha. In comparison, surface

surveys of over 100 settlements in Mesopotamia show that the average site ranged between less than 1 ha to 20 ha (Nissen 2002:7).

Excavation method and stratigraphy

N. Nöldeke and J.Jordan were amongst the first to witness the treasures of Uruk when they in the early 1920s' performed a sounding of Eanna for the German Oriental Society. 18 archaic occupational levels were here unfolded during the first excavations (I-XVIII) and C14-dates determine that they are Chalcolithic, ca. 5300-4574 cal. BC. The earliest layers are of Ubaid origin, a fact which is supported through the pottery assemblage (Charvát 2002:99).

While architecture, tablets and seals were given due attention during the excavation and were recorded down to miniscule detail, pottery was explicitly neglected. This neglect is today highly visible in terms of when the Uruk stratigraphy is linked to the "outside" world. In addition to the little care taken with pottery, the excessive focus on the tablets themselves led to a general inferior attitude towards other archaeological material, for example animal bones, which seemed redundant in value compared to the information which tablets could shed on the past (Nissen 2002:4-5).

There are hardly any examples of the characteristic Uruk ceramics from Warka compared to other Uruk sites. The sounding in Warka was begun underneath the floor of level V, and anything depicted for Level V and above are unreliable. The sounding is therefore not representative for the original site (Nissen 2002:4-5).

Excavations did however reveal that the site probably grew out of two settlements, or the two "cultic installations", the Anu ziggurat and the Eanna precinct. Digging was focused around the Eanna precinct at Warka and there is therefore most likely an uneven distribution of artifacts associated with "special" contexts in comparison to "ordinary" contexts (Schmandt-Besserat 1992:59).

Token assemblage

The token assemblage from Warka yielded 812 specimens, which were categorized into 16 types by Schmandt-Besserat. Most noticeable is the added "complex" types which only appear in sites from the 4th millennium. Included here are geometric and naturalistic shapes such as paraboloids, bent coils, rhomboids, miniature tools, and humans, that never occurred in prehistoric sites such as Jarmo or Tell Abada. The 16 main types were again divided into 241 subtypes with new patterns of linear, punched, pinched, notched, and applique markings.

These additional types did not replace plain tokens and the assemblage from Warka is divided into 344 plain, and 434 complex. Of the 812 tokens from Warka they are all made of clay, with the exception of 11 in stone and 4 of bitumen. A total of 119 tokens from Warka are perforated (Schmandt-Besserat 1992:50). Clay counters from Warka are mostly reddish-buff in color, but greenish and blackish examples were also uncovered. The clay which was used to produce tokens was fine and rarely included impurities (Schmandt-Besserat 1992:58).

Token type	Number
Cones	43
Spheres	206
Disks	132
Cylinders	68
Tetrahedrons	39
Ovoids	56
Quadrangles	18
Triangles	72
Biconoid	16
Paraboloids	42
Bent Coils	24
Ovals/Rhomboids	15
Vessels	18
Animals	14
Miscellaneous	4

Table 8. Token types and specific numbers from Warka (Schmandt-Besserat 1992:59).

Micro context and associated artifacts

Tokens were scattered all over the tell at Warka, but 719 examples or 88.5 % of the assemblage were excavated in the sacred precinct of Eanna, specifically on the grounds of the Stone Cone Temple and the Great Courtyard. Another 43 tokens were produced during the excavations of the Anu Ziggurat, and 50 originated from the city's private quarters (Schmandt-Besserat 1992:59).

Clay tokens exist from layer XVII and up, but disappear for a while in layers VIII/I-VII, becoming frequent in subsequent strata. Cylinder seals are likely to have been invented and introduced in Uruk VII and writing, seems to have flourished in Uruk VI (Charvát 2002:100).

The Stone Cone Temple

The stone cone mosaic temple was built in layer VI on an isolated site to the west of the main Eanna grouping. Its foundation is most likely a standard central-hall plan with a T-shape. Walls were cast in layers of coarse concrete which had been tempered with crushed bricks and tiles. Otherwise the material used for ornamentation was quite luxurious with red sandstone, alabaster, and grey/black limestone. The structure was surrounded by a curious, doubly-buttressed protective wall, whose inner face, like the facades of the building itself, had been decorated with a mosaic of colored stone cones (Lloyd 1978:51). Room floors of the temple were covered by a layer of Late Uruk pottery and tokens (Charvát 2002:101).



Figure 13. Stone Cone Temple from Eanna, Warka (Lenzen 1964:126).

The Great Courtyard

The Great Courtyard of Eanna is a giant pit whose sides are consumed by bitumen covered bricks. It belongs to Uruk IVa and although its function is yet unknown, some suggest it may have been used as a garden. There was located remains of one staircase, but there could of course have been more. During a rainy season the courtyard would inevitably become filled with water. Parts of the upper walls were decorated with cone mosaics. Debris from the levelling layers of the Great Courtyard held a quantity of inscribed tablets, tokens, and sealings (Charvát 2002:104).

Building H

Among other impressive architectural creations of Uruk level IC are the structures F, G and H. All were built in a standard T-shaped central hall plan, flanked by chambers on three sides and disposed with a courtyard. Room I in building H yielded a hoard of 25 clay tokens (Charvát 2002:103).

Trash deposits

Tokens have also been found in trash deposits from Warka, but there is a slight misunderstanding when it comes to artifacts associated with debris from the 4th millennium city. In much of the literature concerning “Uruk” rubbish layers which contained tablets and sealings have been associated with the building contexts beneath the artifacts. However, in Warka there is a pattern of buildings being carefully dismantled and cleaned. The wall stumps which were left behind by the previous buildings were then filled in with brick and other discarded items to create huge terraces which eventually could be used as platforms for the foundation of the next building. This practice was also used in spots where structures had been cleared and the ground needed to be levelled. Therefore, the tablets, sealings, pottery, bones and ashes from this debris are without context (Nissen 2002:5).

Macro context

The macro-context of Warka has already been shortly introduced in chapter 3.1 together with the cultural framework of the Near East. Warka as the archetype site of the Uruk period and culture, has had quite a considerable input in defining the 4th millennium BC. From Warka (Uruk) and its neighbors an understanding of the political, social and environmental landscape can be drawn. As already mentioned the 4th millennium sets the background for the emerging state. Faunal and floral remains indicate that Mesopotamia was experiencing optimum climate conditions during the Uruk period. The traditional range of wheat and barley which is well documented in the Ubaid, continues into the 4th millennium and is supplemented by lentils and linseed. There is also evidence that by the use of irrigation, the Uruk cities and smaller settlements managed to maintain a year round agricultural cycle (Charvát 2002:117). A central argument for the urbanization process of the Uruk is the increase in settlements and the cluster of smaller settlements surrounding large “centers”, such as Warka. This process is not only visible in the number of settlements, but the content of the sites.

Architecture characteristic of the Ubaid are kept, but expanded and enlarged. Temples become more prominent features of the sites, and some of the larger settlements, such as Warka are surrounded by a wall (Pollock 1999:5). Building material, such as raw stone, is well suited for establishing a contact network during the Uruk. Although the limestone used on many of the temples in the Eanna precinct can be traced to a local quarry, much of the imported stone in Uruk sites can be followed back to south-western Iran, the Khabur region, and eastern Anatolia. Perhaps this increase in traded goods and materials can be attributed to the building of city walls as a control and exercise of power? All these features represent an element of urbanization, but Charvát claims that not all of the settlements need have been occupied simultaneously. He rather floats the idea that perhaps the density of occupational sites in the Uruk is a byproduct of the exhaustion of arable soil. If there was year-round production of cereals, then the use and establishment of villages would be an easier way to maintain a high level of yields by relocation and exposing fresh ground to the plough six or seven times in the course of a few generations (Charvát 2002:118). This organization of rotational use does of course require a level of complexity which very well may be described by Christallers central place theory. More than 100 sites of all sizes are located in the countryside of Warka dated to the Late Uruk. Of these 100, Warka is without a doubt the largest at 2.5 square kilometers.

CHAPTER 6: INTERPRETATION AND DISCUSSION

The first research objective of this dissertation was “*To reconstruct the arenas tokens belonged to*”. Through the contextual analysis of tokens from Jarmo, Tepe Guran, Hajji Firuz, Tell Abada, Tepe Gawra and Warka, it became clear that tokens appear in three micro-context categories: *religious structures and/or administrative centers, burials, and trash deposits*. Spatial analysis is here crucial in interpreting what arenas the three micro-contexts belong to. In identifying the arena or arenas that the micro-context categories belong, one is essentially also reconstructing which arenas tokens belong to.

Schmandt-Besserat has firmly established that tokens belong to the economic sphere. According to Schmandt-Besserat, tokens are capable of operating on numerous levels in various fields. Her connection between tokens and the economic sphere is contextually reliant on their appearance in the Neolithic community and the development of more complex types in the Chalcolithic. “*Tokens evolved following the needs of the economy, at first keeping track of the products of farming and expanding in the urban age to keep track of products manufactured in workshops*” (Schmandt-Besserat 1992:6).

In all the different prehistoric cultures in the Near East, tokens seem to be omnipresent. The homogenous character of the early token assemblage suggests that Schmandt-Besserat is right in claiming that the plain token types were universally understood and executed the same function in the Hassuna, Halaf, Samarra, Ubaid and Uruk cultures.

It can however be argued that tokens had multiple forms of meaning and function independent of the economic sphere. Considering meaning is interpreted on the basis of contexts, tokens have several meanings. From the six prehistoric sites presented here, the meaning of tokens can be threefold, one for each micro-context category.

The contextual analysis supports the notion that tokens can be interpreted to have functioned in multiple arenas, and *questions* whether they exclusively belong in the economic sphere. Only one micro-contexts can be connected to the Chalcolithic economy, and no micro-contexts appear to belong to the Neolithic economic sphere.

6.1 MICRO CONTEXT CATEGORIES

The micro-context which can most clearly be associated with the economic sphere, is the “*religious structures and/or administrative centers*”. The three sites where tokens were found inside religious or administrative in centers is Tell Abada, Tepe Gawra and Warka. The token

assemblage from Building A, The Round House and the Eanna Precinct include both plain and complex types, although the majority of complex tokens come from Warka alone.

Micro-context I - Religious structures and/or administrative centers.

Tell Abada – Building A.

“Building A” is located in the center of the settlement and is the only known token micro-context from Tell Abada. There are several curious aspects about Building A, and not all are strictly economic in nature. The construction itself is large size with unique internal features. Compared to the other structures in the village the building could house several extended families. Although the building did not contain any altars, hearths or pedestals, Building A is thought to have played a religious role in the society. The building contains the largest number of burial urns from the whole site. 34 burial urns were found beneath the floor during level 2, with 26 additional urns from level 1. Of the 127 urns found at Tell Abada, 57 were located within the walls of Building A (Jasim and Oates 1986:35). The standardized funerary practice of the Ubaid is characterized as inhumations of adults, often with personal adornments. This funerary tradition throughout the Ubaid indicates a set of strongly shared beliefs (Stein 2010:30). Therefore, the find from Tell Abada is anything but ordinary, a fact which only encourages the interpretation of building A as a structure assigned significant functions (Jasim 1985:173-174).

The concentration of tokens from Building A supports the interpretation of the structure as an administrative center. Building A is truly the embodiment of a perfect micro-context for tokens. The distribution of the small geometric objects within the structure supports the theory that tokens belong within a single system. Not only are they located to specific rooms, but there seems to be purpose behind the combination of the token types found together in ceramic vessel. Jasim and Oates point out that there may be a connection between the presence of tokens in vessels from Building A, with the later invention of the bulla. If one is to follow Jasim & Oates train of thought, then the 4 spheres and 3 cones found in a small painted jar on the floor of room 24 is an example of a transaction. If every jar from Building A represents one transaction, then the building can be looked at as an archive of at least 8 transactions. The groups of tokens which were not found in vessels, but loose on the floor are thought to have been held in pouches or baskets of disintegrable material. Despite that the tokens from Abada are thought to belong to one system, Jasim & Oates are also skeptical to assume comparable functions for all small geometric objects (Jasim&Oates 1986:352).

Tepe Gawra - The Round House

The only “varied” group of tokens found together from Gawra were located in Room *K* of the Round House in level XI-A. Here 6 bottle shaped tokens, 2 pyramidal tokens, and 2 crudely made hemispherical pieces were found together on the floor of a room. These are the only clay tokens from Tepe Gawra found within a structure. Just as with Building A from Tell Abada, “*The Round House*” is located in the center of the settlement, with a slight radius from other structures. Every corner in the Round House aligns to the cardinal points of the compass. In addition to the Round House, the temples from Tepe Gawra share this featured tradition of aligning corners with cardinal points. Unlike Building A, the Round House does contain several artifacts of domestic purpose. Within the 17 rooms of the Round House there was located a number of celts, mace-heads, and hammer-stones. A close inspection of Room G revealed the presence of carbonized grain kernels. This is most likely the result of the rooms having functioned as a granary. Charvát interprets the Round House to appear of a rather ordinary function, in fact, although he assumes that stratigraphic phase XI-A bears’ witness to a revolutionary change of layout, the Round House itself does not contain enough material to convince him of any special significance. The ordinary settlement rubbish and the absence of graves from the structure intrigues Charvát, but does not convince him that the Round House is a communal building (Charvát 2002:109).

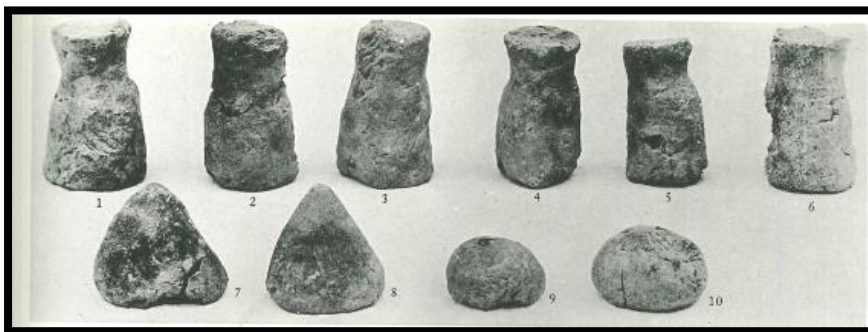


Figure 14. Terra cotta “gaming pieces” found in Room *K* of the Round House. Level XI-A. (Tobler 1950 Plate LXXXIV).

Warka – The Eanna Precinct

The information on the distribution of tokens within Warka suggests two important facts. The first is that there are more frequent finds of tokens in the official quarters of the city than in the secular quarters. A quick objection could be made that the disproportionate distribution of tokens is only a reflection of the excavations which were centered upon the Eanna precinct. The second observation is that the recurrence of tokens among refuse in vacant lots is important because it suggests that the counters were discarded after their intended function had been fulfilled, a practice which was also used on archaic tablets.

During the Late Uruk the Eanna precinct covered approximately 8-9 ha. It's location on the eastern part of the city was easily spotted. The precinct is also slightly elevated above the city. Within the precinct there are remains of older cultic structures, a square water basin, open spaces, small special structures and buildings utilized for craft production. No single structure seems to have been more important than other (Nissen 2002:7). Almost all of the tokens recovered from Warka belong either to the Stone Cone Temple or the Great Courtyard.

The Stone Cone Temple

Monumental architecture is characteristic for the Uruk period, and the Stone Cone Temple is an excellent example for lavish adornments. Economically, the temple is an extraordinary achievement, because of the colorful mosaics which gives it it's nickname. The resources which were acquired for its construction are unlike any used before. Not only did the building itself require lots of man power, but the stones had to be imported. This is known because there were no equivalent natural resources in the southern Mesopotamian alluvial plain (Schmandt-Besserat 1992:179).

The Great Courtyard

There is not much to say about the Great Courtyard from Eanna other than, that its function is yet not fully understood. However, both surface finds of tokens and tokens encased in clay bullae have been located amongst its rubble. A hoard of 24 clay bulla were found during an excavation in the 1960s' in between the Great Courtyard, the road leading out of Eanna and the Stone Cone Temple (Lenzen 1964:127). At the end of Uruk Iva the entire Eanna precinct was dismantled and rebuilt. It is not clear whether the tokens are connected with the Great Courtyard or if they are part of the fill used to level the area.

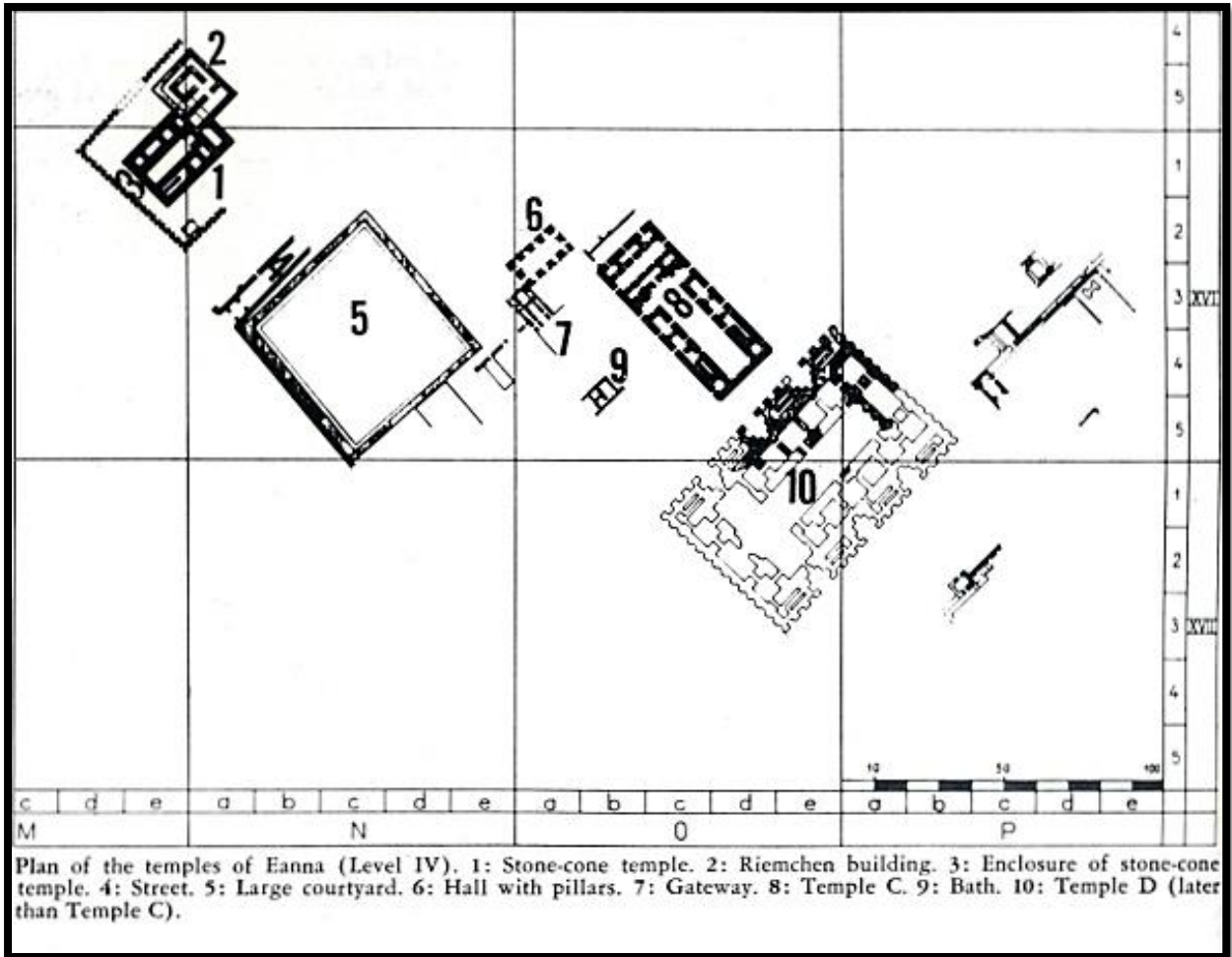


Figure 15. Outline of the Eanna Precinct from Warka (Lenzen 1964:124).

In addition to tokens, there are associated finds, which add to the interpretation of the Eanna precinct an economic center. First, there are kilns and pottery residue, which appear to be the remains of workshops. Secondly, there are thousands of sealed clay fasteners from the Eanna precinct that were used to control economic transactions (Nissen 2001:155).

Micro-context II – Burials

Artifacts associated with burials are often interpreted as having a symbolic a meaning, rather than a functional one. The act of burying belongings with the dead is considered both a sacrifice and a gift. Curiously enough tokens located in burials are found in Tepe Guran, Hajji Firuz and Tepe Gawra.

Tepe Guran – Tomb 9 & 11

There are only four tokens which can be located to tombs from Tepe Guran, but there are enough parallels to confirm the intentional burial of tokens. Of the four tokens from Tepe Guran, there is only substantial documentation of one tomb, *Tomb 9&11*. As mentioned in

chapter 5.2 these two tombs will be treated as one context. T 9 was found 1.3 m below the surface, here three stone slabs were covered in sherds of several pithoi pots. The pots seem to have been smashed onto the stones covering the grave. Buried underneath the slabs was an adult, most likely a male. His skull was badly damaged and several of the bones were found in the wrong position. A deposit of grave goods was located in the eastern end of the grave. A few of the artifacts found in the deposit includes several beakers, sherds of clay pithoi, vases, bowls, a silver bracelet, a bronze tanged dagger and a bronze ring. T 11 was found in the same level as T 9 and bears several of the same characteristics. This grave also belongs to a male, whose bones are in disarray. He was covered by heavy stone slabs and pottery sherds just as burial T 9. His deposit of grave goods is rich with artifacts, such as beakers, bowls, bronze plates, a silver bracelet, flasks, and a bronze dagger. South of his skull and dagger lay the ribs and the shoulder blade of a caprid (Thrane 2001:33-36). There is no way to know which of these tombs held the pair of tokens, fortunately they are very similar and are part of the same funerary practice.

Hajji Firuz – H11 B3, H12 B3 and Structure VI

Tokens from Hajji Firuz occur in clusters. For example, are the majority (6 of 10) of the cones from the site associated with human bones. There is one cone token associated with F11 Burial 3, and 5 cones associated with H12 Burial 3. Both burials are floor ossuaries and found underneath structures. F11 B3 belonged to Phase A³, and was located within Structure II₁. Here 4 individuals (2 adults and 2 children) were laid to rest together with 11 spindle whorls, 1 token (cone), a stamp, a celt, a used core, a cup, a very small jar, a stone ball, a polishing pebble and a scapula scraper, in addition to 8 fragmentary animal bones. H12 B3 is associated with Structure VI from Phase D and contained fragments of minimum 4 individuals. Because of the missing skulls and the lack of various bones it is most likely a secondary burial. The deceased varied from ages between 2 and 21. Similar with F11 B3, H12 B 3 also contained animal bones. The 5 clay cones were placed directly above the bones. A placement which is most likely done deliberately. Whether the tokens from H12 B3 are associated with the floor ossuary or the floor of Structure VI is unknown.

One of the less complicated interpretations of the structure is that it represents a small yet comfortable meeting house. Here a group could easily gather for social purposes. The strange asymmetrical horseshoe-shaped hearth could have been intended for preparing feasts for the meetings. The bright red color of the wall behind the hearth suggests that its temperatures

would have been unnecessarily high for the cooking of meals. Alternatively, there are those who think the building served as temporary residence for people who were “set apart” from the community. This proposal is based on the isolated placement of the building. There are several ethnographic examples where isolation huts were created for menstruating women, women in child birth, sick individuals or people undergoing initiation rites (Voigt 1983:315).

Tepe Gawra

There are several groups of tombs and graves from Tepe Gawra which contained tokens. A common pattern seems to be the placement of 6

Tombs 102, 107, 110

The largest concentration of tokens in any tomb from Tepe Gawra were the 23 spheres found in Tomb 102. These spheres come in two sizes and the larger spheres were located by the elbows of the skeleton in the tomb, while the smaller pieces were found by the feet. Together with these 23 spheres were also two conical pieces of alabaster, four sphere marble pebbles and one rough conical piece in aragonite. The largest spheres from Tomb 102 were the same size as the six spheres found in T110, while the small spheres corresponded to the six spheres in T107. In Tomb 110 the spheres were found by the skull and they are the only tokens from Tepe Gawra which are not white (Tobler 1950:85). Tomb 107 from Tepe Gawra is interpreted as the final resting place of one of the communities’ eminent members. This explanation is built upon the shrine which was erected directly above his remains.

Locus 7-58 is an adult grave found in stratum XVII-XVIII. It is a simple inhumation which contains very specific grave goods; 34 conical terra cotta tokens with bent tips, and one clam shell. There is no complete skeleton, and it seems that the individuals’ legs had been amputated. 33 of the tokens were placed about pelvis height, while 1 was placed by the ribs (Tobler 1950:110-116).

Locus 181 is an especially rich and unique child burial situated by the “temple” plateau of level XI-A, which is the same settlement phase as the Round House was uncovered in. The burial contained a rosette and repoussé-decorated disk of gold at the child’s head, stone and golden beads at its wrists and stone tokens (4 spheres, 3 hemispheres, 2 hemispheres with knobs) by the hands and knees of the remains (Tobler 1950:205).

What is peculiar in the cases from Tepe Gawra is the specific placement of the tokens by the body. In *Locus 7-58*, an adult burial, the tokens were around the pelvis and one by the ribs, while the child burial had the tokens situated by its head, hands and knees.

Micro-context III - Ashy deposits/trash

Several tokens from Jarmo, Hajji Firuz, Gawra and Warka were located in undefinable contexts. Perhaps these are examples of counters which have been discarded. The act of discarding artifacts is not unknown from the Near East and associated artifacts which have also been found in trash deposits are cuneiform tablets. There is not much to say about the individual trash deposits from Jarmo, Hajji Firuz, Tepe Gawra and Warka other than that the act of discarding tokens seems to occur in all cultural periods. The most reasonable explanation for the discardment of tokens is that the objects had fulfilled their function and were no longer necessary. There is little damage done to the tokens found in the ashy deposits and it seems odd that tokens should not be re-used. Considering Schmandt-Besserats notion that tokens stood for transactions then the discardment of the geometrics could signalize an ended transaction, or if tokens represent something other than commodities dispensing the objects could be a ritual act.

6.2 MERGING CONTEXTS, A CULTURAL FRAMEWORK

The second objective of this dissertation was “*To clarify what context can reveal about token function and significance*”. Essential in accomplishing this second objective was the collaboration of contextual archaeology and spatial archaeology. While contextual archaeology was necessary to study the meaning of tokens on a micro-level, spatial archaeology was crucial in understanding how these micro-contexts correlated with the macro-contexts. Spatial analysis is invested in understanding how prehistoric societies utilized space, and often if patterns of activities can be traced, then the function of the space can be understood.

Tokens are assumed to have developed in the Neolithic as a direct result of a new economy. An examination of the Neolithic economic sphere reveals that subsistence was reliant upon a broad-spectrum economy. Agricultural activities were supplemented with herding, fishing and hunting. Macro-contexts from Jarmo, Tepe Guran, and Hajji Firuz all reveal settlements which utilized their surrounding environment and natural resources. There does not appear to be any hierarchies within the social system, and the households contained enough remains of domestic utensils to be interpreted as self-sufficient. Public spaces in between structures seem

to have been used for public activities. Interpreting tokens as prehistoric counters, involves them being found within an economic arena. As households were autonomous in the Neolithic, and the society is interpreted as egalitarian, then it would not be unreasonable to assume that tokens should be found in the domestic sphere. If tokens are economic devices it would be preferable to see that tokens change context from the private to the public sphere, together with the evolving economy. Unfortunately, no results from the contextual analysis can provide a clear evolution of tokens moving from the domestic to the public sphere. With the exception of Hajji Firuz, none of the Neolithic sites included in this dissertation held tokens within domestic structures.

The only clear pattern of micro-contexts from the Neolithic localities are burials. Although burials are not the only contexts tokens were recovered from in these sites, they are the only concrete contexts which yield enough information to try and interpret the geometrics function. In chapter 4.4 tokens found in burial contexts are a big part of the critique towards Schmandt-Besserats theory. The prior interpretation of tokens as beads or gaming pieces are often revisited if the burial in question is of a child. Schmandt-Besserat stands by her initial proposal and argues that tokens in burials are status symbols. She also mentions a connection between tokens and the title “man of stones”. This title was found in the 4th millennium professions list. Macro contexts associated with tokens in burials shows us that the burials all occur in the Neolithic period. None of the examples can be associated with any “men of stones”.

When comparing micro-context categories with their macro-contexts there seems to be a separation between tokens in the Neolithic found in graves, and tokens in the Chalcolithic which are located in religious and/or administrative structures. This marked difference supports the view that the meaning of tokens is dependent upon context.

Based on the results from the contextual analysis of token assemblages from Jarmo, Tepe Guran, Hajji Firuz, Tell Abada, Tepe Gawra and Warka, this dissertation supports the idea that the token system should be separated into two. None of the micro-contexts from Jarmo, Tepe Guran, or Hajji Firuz display any micro-contexts which support that tokens were developed to satisfy a need for accounting.

Based on the observations done above, tokens appear to belong to at least two arenas. The earliest arena is the burials, and the later arena are the administrative centers. However, there are certain suspicions that tokens from Hajji Firuz burials have been used as counters. Damages on tokens found in burials from Hajji Firuz are equivalent with the amount of chipping which would have occurred if the clay cones were together within a pouch. Whether they acted as counters or not, the chipping is evidence of prior use (Voigt 1983:195). There can however, be other explanations for why tokens were kept together in pouches or open vessels. Clay amulets are bound to be chipped if used daily, also would gaming pieces which are often used. The variety in funerary practices which tokens appear in suggest that they all represent one identical, yet unknown meaning.

Then there is also the question of which arena the third micro-context category; ashy deposit/trash represents. This micro-context category is ambiguous because it transcends into both the Neolithic and Chalcolithic macro contexts. It does not seem favorable to try and establish any arena for the trash deposits. The act of discarding tokens does however point more in the favor of an economic function, than a ritual use for the clay objects.

Presented in this dissertation is the view that, although the macro contexts support Schmandt-Besserats view of the developing token system, a closer look at the micro-contexts reveals that there is more to be known about the token function.

CHAPTER 7: CONCLUSION

The Near East is the backdrop to a multitude of firsts. Among the revolutionary changes are the domestications of cultivates and animals, the establishment of sedentary villages and the first uses of clay. Of all the prehistoric activities and people that the Neolithic Near East has witnessed, tokens appear to have been omnipresent from the beginning to the end. The common misconception of the token assemblage is that it has throughout its existence functioned as an accounting device.

This dissertation has attempted to achieve the following research objectives.

1. To reconstruct the arenas tokens belonged to.
2. To clarify what context can reveal about token function and significance.

Through contextual archaeology and spatial analysis concrete archaeological evidence has been used to recreate the arenas tokens belong to. Architecture, manufacturing debris and associated artifacts were all integral in identifying which prehistoric activities the tokens were a part of. The relationship between micro and macro contexts has been essential in examining whether Schmandt-Besserats interpretation of tokens is still valid after a contextual analysis.

From the contextual analysis of tokens from Jarmo, Tepe Guran, Hajji Firuz, Tell Abada, Tepe Gawra and Warka there can be made a few remarks:

First, there are no concrete micro-contexts from the Neolithic which can positively be associated with the economic sphere as Schmandt-Besserats theory suggest that they should. Second, the contextual analysis points towards an understanding that the Neolithic tokens and the Chalcolithic tokens belong to two different arenas. Third, there was not enough documentation on the spatial distribution of artifacts to create more than three micro-context categories. Of these three, only two were viable in recreating prehistoric arenas. What the contextual analysis of these 6 prehistoric sites has ascertained, is that the economic function and meaning of tokens should not be accepted lightly.

What can be said about the arenas tokens belonged to is that their presence goes beyond the economic sphere. Their meaning as funerary offerings is still not clear, but there is certainly established a pattern between the Neolithic macro context and tokens in burials. The different nature of all the tombs and the variety in types of tokens seem to be local.

Due to the small nature of this research, further comparisons on the micro-contexts of tokens is urged. To procure a more complete representation of the relationship between the micro and macro contexts of tokens research must include several more localities. Expanding the number of localities where tokens have been found could help further establish several more categories of micro-context.

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