Early urbanism in Late Chalcolithic Northern Mesopotamia?

REASSESSING TELL BRAK, KHIRBET AL-FAKHAR AND TELL HAMOUKAR

BALLIF MAXENCE (S2150417)

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Acknowledgements

Thanking everyone who helped me in many different ways during this difficult last year would be too long so most of them will recognize themselves if I write down thank.

A special thanks to Pr. Bleda Düring who was always there even when I was not.

Also thank you to Pr. Matthieu Honegger whose course inspired the idea behind this thesis.

And a final global thank you to everyone who inspired me, helped me and was there for me.

1. Introduction

Traditionally the earliest cities have been reconstructed in the southern part of Mesopotamia. By contrast, the emergence of cities in Northern Mesopotamia has been explained by archaeologists as a secondary phenomenon (McMahon 2019, 3). It was generally understood as the result of a "colonizing surge" (McMahon 2019, 5) coming from southern Mesopotamia in the so-called Late Uruk period (3700-3100 BC; Algaze 1993; McMahon 2019, 4). According to this model, northern settlements became cities during the late 4th millennium BC under the influence of a southern cultural expansion and the establishment of southern colonies such as Habuba Kabira in northern Syria. But the discovery of the persistence of local material culture alongside imported assemblages and evidence for urban elements predating southern influence in the region has led archaeologists to reassess the narrative of the rise of urbanism in the region. Nowadays, Northern Mesopotamia between the end of the 5th to half of the 4th millennia BC is generally understood as an independent locus of urban development (McMahon 2019, 5).

1.1 Recent evidence of early complexity in North Mesopotamia

Sites such as Tell Brak or Tell Hamoukar and its southern extension, Khirbet al-Fakhar, have characteristics such as an unparalleled size and evidence for mass production, from at least the Late Chalcolithic 2 (LC2; 4200-3900 BC). Such characteristics are proxies commonly used by archaeologists to identify urban centres (Cowgill 2004, 526-527; McMahon 2019, 2). The layout and expansion model of these unique sites seem to consist of multiple mounds separated by spaces of low-density occupation. Tell Brak's urbanism is for instance described as beginning "in a spatially extensive form [having multiple pockets of settlement surrounded by areas of low density or no settlement], and its growth pattern was one of increasing density with simultaneous *inward* expansion" (Ur *et al*. 2007, 3). This multi-centric model brings diversity to the classical idea we have of urban processes in ancient Mesopotamia. Even if debated, Uruk is indeed often described as having expanded in a concentric way (McMahon and Crawford 2013, 10). This difference in spatial growth might be indicative of divergence in "underlying socio-political [and cultural] processes" (Ur *et al*. 2007, 1). Alternatively, it could also be the result of environmentally dependent necessities. It is also possible that the pictures we have for now might be erroneous.

One of the main distinctions between North and South Mesopotamia lies in the nature of their subsistence strategy. The inhabitants of the latter had to use irrigation for their agriculture whereas rainfed agriculture could be practiced in the former. Additionally, marshes and coastal resources seemed to have made of Lower Mesopotamia a rather stable environment. On the other hand, Tell Brak and Hamoukar were situated in the Upper Khabur region which sits next to the Jezira, the modern "breadbasket" of Syria. Furthermore, water availability was higher at the time these two sites started displaying evidence for complexity (McMahon 2019, 7)1. Some important wadis that are today seasonal were perennial at the time, making them available for water access, communication, and transportation. Finally, both sites were situated on important trading routes. Consequently, conditions were favourable to sustain the emergence of large urban settlements such as has been theorized by Guillermo Algaze (2005) for Southern Mesopotamia.

1.2 Various approaches to urbanism

Depending on what question the researcher tries to answer, the dataset available and the general paradigm used, the way urbanism is understood and defined will vary. In an article from 2004 titled "Origins and development of urbanism: archaeological perspectives", George L. Cowgill addressed theoretical issues surrounding ancient urbanism. He put forward the lack of clear definitions for terms such as "urban" or "city" and used freely by archaeologists. Although he acknowledged that definitions are necessary, he tried to move away from essentialization and to highlight the diversity of the phenomena (Cowgill 2004, 526). Instead of focusing on distinguishing urban sites from other ones by putting forward quantitative or qualitative parameters, he argues that "we have better conceptual tools if we think of multiple properties (i.e., variables or axes) along which rough measurements can be made." (Cowgill 2004, 527).

This was an influential paper and had the effect of moving "away from spatial and demographic aspects to focus more on issues of specialization and inequality" (McMahon and Crawford 2014, 49). This line of thought led to acknowledging that all settlements are complex and specialized in their own way, in the sense that complexity is more a spectrum (or rather a nebula) than a fixed threshold. Any site can therefore teach us something about ancient urbanism, even though only a fraction can be assessed as urban. The question then is to understand why only some of them reached a large size (*Ibid*), which is often used as a proxy to assess

complexity. Indeed, sites such as Tell Brak or Hamoukar and its southern extension show evidence of areas covered over more than 150 ha during LC2 and LC3 (McMahon 2019, 16-17), which is itself in sharp contrast to other sites considered as urban such as Tell al-Hawa extending over around 50 ha, which again strongly contrasted with the vast majority of settlements that must have rarely exceeded 1 ha (McMahon 2019, 18). Such clear gaps cannot be ignored and their origin and meaning should be determined in order to rightfully place them in the urban nebula.

The theoretical approach to urbanism chosen for this work is a middle-ground. It relies mainly on Michael E. Smith's paper titled "How can archaeologists identify early cities? Definitions, types, and attributes" (2016). Michael Smith used an attributes-based approach in order to unite different paradigms. Different attributes deemed indicative of an urban phenomenon were chosen and are evaluated for each site. The advantage of such an approach is that it does not essentialize urbanism like a strict definition does, but it still facilitates an analysis. This allows for an open assessment of the nature of these sites and opens way for future comparative works which will strengthen the scientific basis of these assessments. Since Gordon Childe's influential check-list to evaluate urban settlements, I believe that this approach might constitute a new unifying approach to urbanism

1.3 Research problem

The main argument then revolves around the determination of what these large spreads of material, as seen in Tell Brak or Khirbet al-Fakhar, actually mean in an urban perspective. Should their sheer large size suffice for calling them cities? Some authors (McMahon 2019, 16) have seen these major sites as the first Northern cities, representing a contrast to the classical southern urbanism. This might indeed be the case, but such interpretations must be done based on a systematic evaluation of the data in relation to a clear theoretical framework. As spoken of earlier, this is an even more complex work given that all sites, no matter their size, can bear elements that we understand as urban indicators. This is where the attributes approach will be used, as a theoretical basis to support arguments based on data.

Archaeologists implicated in research in the North might have been willing to give credit to northern trajectories without due consideration. Khirbet al-Fakhar, Tell Hamoukar, and even more Tell Brak, might indeed have been the first cities of their time as has been sometimes claimed. But a strict assessment of the data must be

made in order to classify northern settlements into the urban spectrum. A unifying approach to urbanism is lacking for ancient Mesopotamia, and for other regions of the world as well. Urban theory needs to be properly framed before being able to assess anything. The attributes used for the assessment of urban settlement must come from urban definitions and theories that are globally accepted. After that, the data must be rigorously tested through the prism of this theory.

1.4 Aim / Objective

The goal of this thesis will therefore be to reassess the data available for Tell Brak, Khirbet al-Fakhar and Tell Hamoukar, from a theoretical and epistemological conceptual basis of urbanism and its linked notions. This will be done in the first part of the thesis and building on Michael E. Smith's paper. In other words, I will first establish attributes that I think should be used to assess the first appearance of large cities in northern Mesopotamia in the Late Chalcolithic. These attributes will represent the different classical research orientations concerned with urbanism (demographic, economic, geographical and sociological) in order to be as exhaustive as possible. I will then present the data available for both sites and assess whether or not they can be understood as ancient cities in light of these attributes. In essence, this thesis will aim at understanding the meaning of Brak, Hamoukar and Khirbet al-Fakhar's large spreads of material. I believe this might broaden our vision of the study of urban processes in general and help us truly give credit to the area and period in question by getting rid as much as possible of preconceptions and biases.

1.5 Research questions

Formulated into research questions, this objective goes as follows:

- Are the large spreads of material observed in Tell Brak, Khirbet al-Fakhar and Tell Hamoukar really evidence for ancient cities?
  - ➔ How do we define cities in northern Mesopotamia or in the Near East? What criteria should we use?
  - ➔ According to these criteria, do Tell Brak, Khirbet al-Fakhar and Tell Hamoukar qualify as cities?

1.6 Methodology

The first part of the paper will be dedicated to the theoretical framework. I will start by presenting the spatio-temporal context of the two sites discussed here, Tell Brak and Tell Hamoukar/Khirbet al-Fakhar. Afterwards, I will tackle the issue of urbanism as a concept in archaeology. This will allow us to situate the sites in the archaeological debate that they are inevitably encompassed into. To do so, historiography is extremely important. Therefore, past studies and mains issues needs to be presented. Additionally, Michael E. Smith's work will be presented and the attributes he used to assess urban settlements will be discussed. Ultimately, based on the theoretical framework regarding urbanism, new categories of attributes will be used which follow the main paradigms that conceive ancient urbanism (demographic, economic, geographical and sociological). This will also aim at being more relevant to the region studied, Late Chalcolithic North Mesopotamia.

Secondly, this theoretical framework will be used as a basis in order to correctly assess the data available for Tell Brak and Tell Hamoukar/Khirbet al-Fakhar. Consequently, said data will be presented, with a focus on the periods and material that are the most relevant to the theme of this paper. Finally, the evidence put forward will be reassessed and, with the help of the theoretical framework, the elements pointing to the urban or non-urban nature of these three sites will be discussed. What this process aims at is to generate a strict and methodological reflection and analysis on the issue of a possible independent early urban phenomenon in North Mesopotamia. More generally, it also aims at separating urbanism from its ideological issues and preconceptions for further research.

2. Chalcolithic Mesopotamia and the emergence of urbanism

In order to understand the uniqueness of the sites that this paper is concerned with, it is essential to place them in their context. Tell Hamoukar, Khirbet al-Fakhar and Tell Brak are all situated in the Upper Khabur region, in modern north-eastern Syria. They occupy strategic locations "on one of the major routes from the Tigris Valley northwards to metal-rich Anatolia and westward to the Euphrates and the Mediterranean" (Oates *et al*. 2007, 586). Tell Brak is situated at the river crossing on the western end of the Jebel Sinjar mountains whereas Tell Hamoukar and Khirbet al-Fakhar sit on the eastern route (fig. 1-2) (Oates *et al*. 2007, 586). They benefited from their rich agricultural surroundings as well as "areas suitable for nomadic pastoralists" (Oates *et al*. 2007, 586). Consequently, they were important loci of interaction between different communities, sometimes distant ones. Additionally, the Late Chalcolithic (the period when first signs of possible urbanism appear at these sites) is marked by a regionalization of cultural traits. This is notably seen in the ceramic material. This chapter is dedicated to presenting the environmental and chronological factors in which the sites are inscribed.

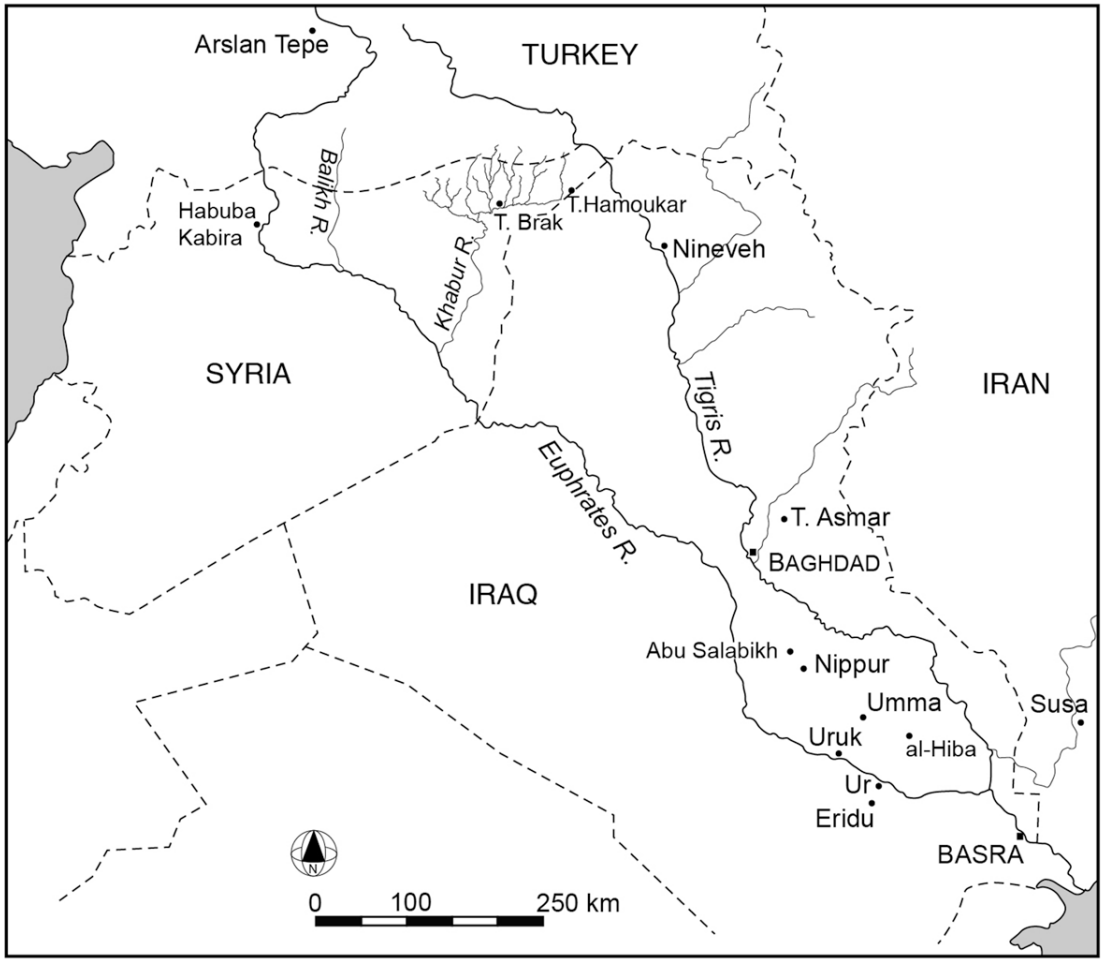


Figure 1 Map of Mesopotamia with key sites (McMahon 2019, 3, fig. 1)

2.1 North Mesopotamia, its landscape and neighbouring regions

Both sites (Tell Hamoukar and Khirbet al-Fakhar will sometimes be referred to as one locus because of their proximity) are situated in Northern (Upper) Mesopotamia. In a broader context and for the periods considered in this paper (5th to 4th millennia BC), Northern Mesopotamia is usually compared and associated with two neighbouring regions: eastern Anatolia and Southern (Lower) Mesopotamia (Stein 2012, 125). These three areas have been in contact and interacted with each other from at least the Early Holocene and all three hold evidence for regional development of social complexity (Stein 2012, 125). Due to the limitations of this thesis, Anatolia will not be detailed too much here. However, its role in the regional dynamic must be kept in mind.

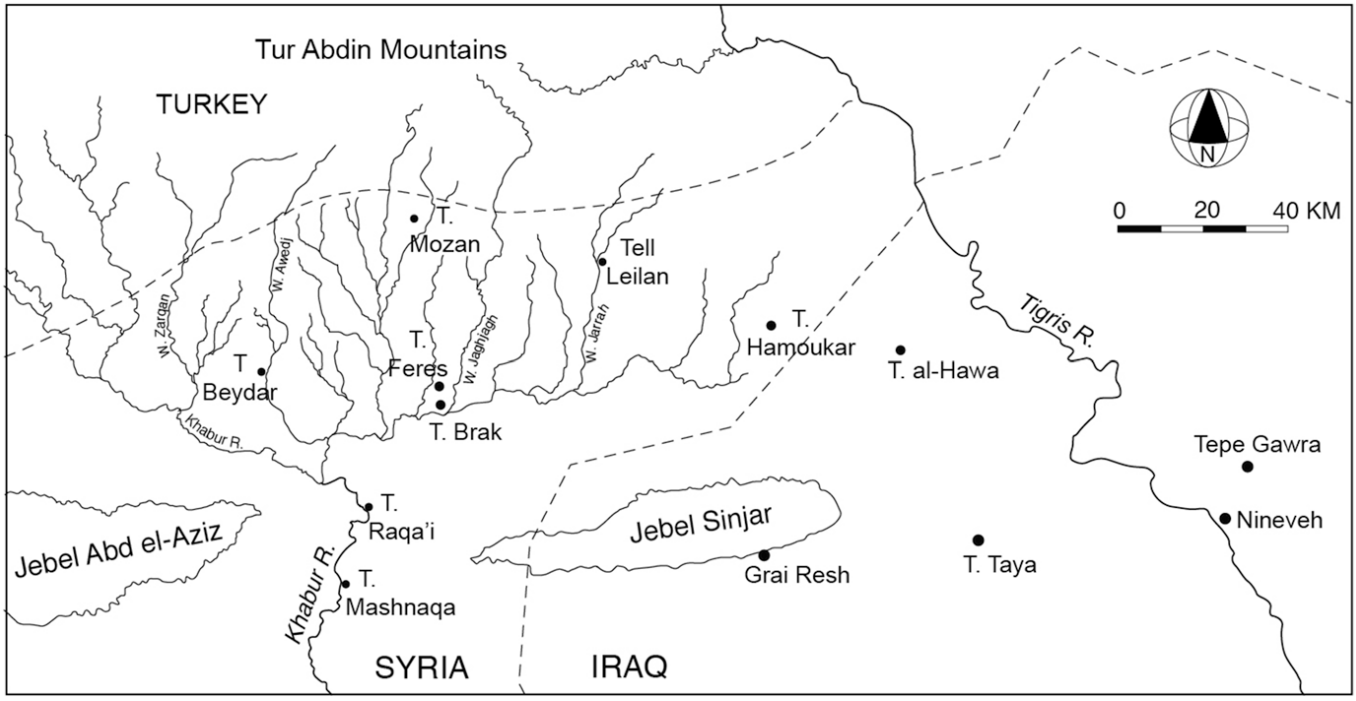


Figure 2 Map of Northern Mesopotamia with some key sites (McMahon 2019, 3, fig. 2)

Mesopotamia itself (fig. 1) "is roughly equivalent to the modern countries of Iraq, northeastern Syria, southeastern Turkey, and southwestern Iran" (McMahon 2019, 2). The term derives from the ancient Greek terms *μέσος* (*mesos*, 'middle') and *ποταμός* (*potamos*, 'river') which translates to "(land) between rivers". This refers to its location along and between the Tigris and Euphrates. Due to its vastness, the area in fact "encompasses a wide range of topography and environmental zones" (McMahon 2019, 2). However, it has traditionally been separated between north and south based on general physical and ecological conditions. The dividing line is situated roughly around modern Baghdad and is closely related to the limit for rainfed agriculture (fig. 1-3) and geologically where the "southern alluvial plain

meets the limestone plateau of the Jezira [i.e. northeastern Syria and northern Iraq]" (Hald 2008, 4).

These latter differences are central to the origin of the heuristic distinction between North and South in archaeology. Indeed, it is the region's diversity of environments which caused a "diversity in terms of natural resources, which has again created a cultural division of north and south" (Hald 2008, 4). For instance, the fact that southern societies had to use irrigation for farming has been traditionally used by researchers as an explanation to the different trajectories followed by each region. In 1960 in an influential paper, Thorkild Jacobsen argued that "irrigation was central to the processes that first gave rise to, and then maintained, early Sumerian civilization" (Pournelle and Algaze 2014, 7). This idea was supported by other authors at the time and contributed to anchor the idea that irrigation was an explanatory factor for the success of southern culture over northern ones. Nowadays, the argument that southern development was advantaged and supported by a favourable environment still holds true. Guillermo Algaze has for instance tried to pinpoint this specific dynamic with what he termed "The Sumerian takeoff" (2005). His model summarizes the almost consensual understanding of the region's split of trajectories during this period.

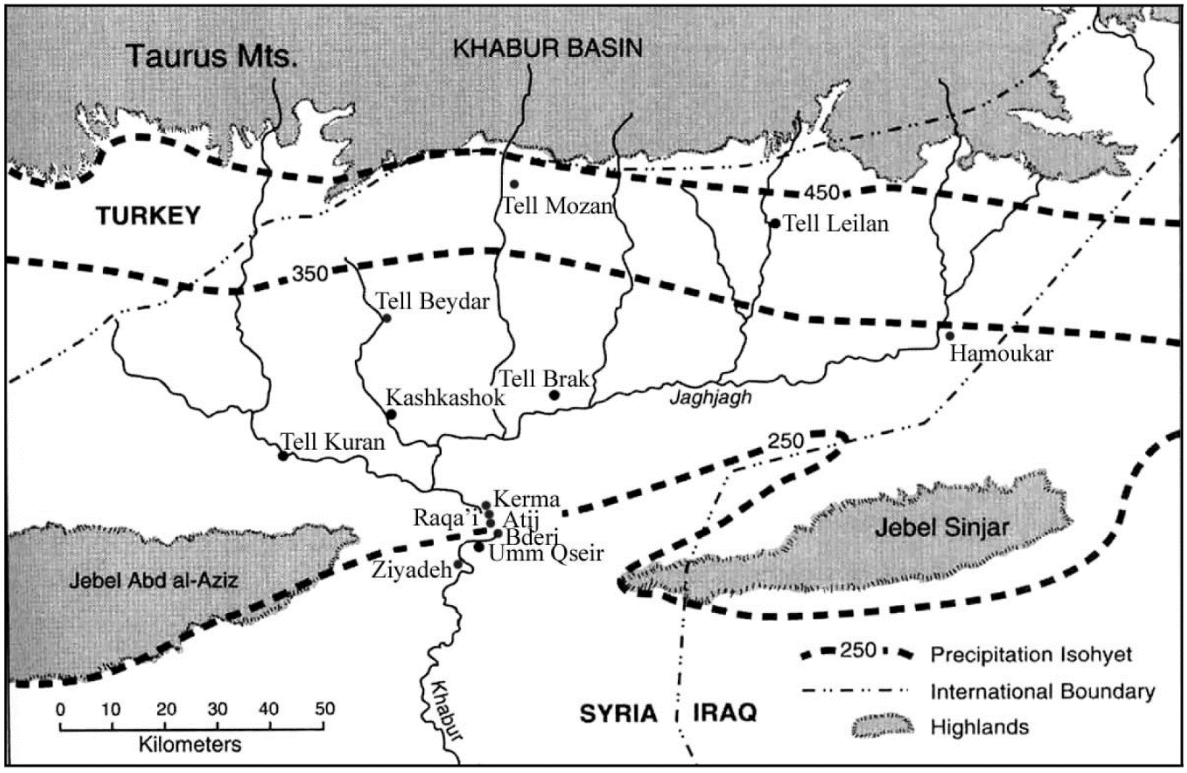


Figure 3 Map of the Upper Khabur basin with modern precipitation isohyet (Hald 2008, 7, fig. 2.2)

2.1.1. South Mesopotamia and its advantageous environment

In a paper from 2005, Guillermo Algaze tackled this issue of explaining why a decisive shift took place in favour of southern Mesopotamia in terms of "urbanization, socio-political complexity, and economic differentiation" (Algaze 2005, 3) around the onset of the fourth millennium, when an overall balance existed in the ancient Near East before that. The fourth millennium is indeed identified as the period during which the South stepped out of a preceding "parallel advancement" (Nissen and Heine 2009, 21). To develop his theory, Algaze mainly relied on economic models (Algaze 2005, 5). In particular, he focused on the impact of long-term trade patterns which he believed "differentially favoured the development of societies in the alluvial lowlands of Mesopotamia over polities in neighbouring regions" (Algaze 2005, 27). This rests notably on Jane Jacob's theory, who highlighted the role played by trade in the origin and growth of cities through the concept of economic differentiation (Algaze, 2005, 7-8). This postulates that cities "emerge as a response to regional imbalances in productive advantages" (Algaze 2005, 7) and that they consequently form at strategic points in relation of natural transportation and trade routes. Additionally, following Jane Jacob, Algaze conceptualized cities as the materialisation of growing population densification and social complexification. This is supported by the role of cities in economic processes and by the positive impact of the latter on population density and social complexity (Algaze 2005, 7). This explains Algaze's focus on urbanism, using it as a proxy to measure and assess complexification.

To explain the process in which economic differentiation took place in the region, he introduces William Cronon's concepts of "natural landscape" and "created landscape". The natural landscape designates the geographical and environmental context of an area. It is the basal level, devoid of any human intervention. The created landscape represents the transformations undertaken by human societies within the same area. These transformations can be environmental/physical (e.g. the creation of irrigation canals that further improved transportation and communication in the alluvium), but also social. Both fall in the realm of innovations which, according to Algaze, were exponentially developing "as the web of interpersonal communications became increasingly dense in southern cities" (Algaze 2005, 22). Cities represented the main loci of innovation emergence because of population densification and better communication. In summary, these innovations were initially boosted thanks to the natural landscape which gave the region advantages compared to its neighbouring regions. With

time, the innovations were becoming exponentially self-reinforcing (Algaze 2005, 1), and an advantageous created landscape built itself upon the natural one. These processes were pushed by the need from polities to access resources that were not present in their landscape (i.e. economic differentiation).

South Mesopotamia's natural landscape during the late fifth and fourth millennium BC seems to have been what gave it the initial burst that "set trade (and its multiplying ramifications) into motion" (Algaze 2005, 9). Environmental and geographic advantages of the South were bidimensional. On the one hand, the use of water transport allowed the Uruk elites to easily mobilize resources from the hinterlands and further regions. Indeed, water transportation would have allowed the hinterlands to be substantially larger and make long-distance trade and communication more cost efficient. On the other hand, the environment and climate of the region at that time were apparently more favourable than nowadays (McMahon 2019, 7). Moving away from focusing solely on irrigation, researchers now tend to put emphasis notably on the role played by marshes and littoral ecotones (see Pournelle 2007).

This shift had already been foreseen by Joan Oates in 1960 (Pournelle and Algaze 2014, 1). A better understanding of the ecoclimate of the 4th millennium BC indicates that the inhabitants could benefit from the deltas and their biomass-rich marshes that were denser and wider than they are today due to higher sea-levels and increased rainfall (Algaze 2005, 11). Overall, the use of irrigation, denser network of natural channels at the time, more favourable climate and higher variety of resources gave the South advantages in "productivity and resilience" (Algaze 2005, 11) compared to neighbouring regions. Jennifer Pournelle and Guillermo Algaze conceptualized this specificity and named it "deltaic resilience" (see Pournelle and Algaze 2014). Notably, they argue that deltaic resilience was "inextricably intertwined with urban resilience" (Pournelle and Algaze 2014, 27). These two dimensions (use of water transport and deltaic resilience) made southern polities advantaged in long-term trade patterns and, consequently, in sustaining urban polities.

What is also of interest with Algaze's paper for the present thesis is that, by describing how the environment and geography of the South allowed its polities to develop, he also explains why the same process failed in the North. It is an important challenge to his model because, as he himself notes, northern Mesopotamia also saw "an initial burst of settlement growth" (Algaze 2005, 18). The largest individual sites in the two regions by the end of the fifth and start of the

fourth millennia were of comparable size, with even a slight advantage for northern ones (e.g. Tell Brak and Tell Hamoukar). According to Algaze (also see Ur 2009) and based on surveys available at the time, the main difference was one of density and complexity of the settlement grid in the areas as a whole. The North notably lacked settlements of various sizes surrounding its larger sites as could be seen for the South (Algaze 2005, 19). Algaze argues that one of the main factors that explain why the North did not develop more complex settlement grids and why its "proto-urban experiment" (Algaze 2005, 20) was aborted is that its large sites were situated in different drainages and separated by large distances (Algaze 2005, 19; Ur 2009, 44). On the other hand, in the South "multiple competing settlements connected by waterways existed within short distance" (Algaze 2005, 19). The North would therefore have lacked the stimulation and competition generated by the proximity of important settlements.

2.1.2. Northern Mesopotamian landscape

Northern Mesopotamia is roughly equivalent to "the southeastern-most part of Turkey, northeast Syria and northern Iraq" (Hald 2008, 4). Most of the region is composed of flat steppe "broken by low mountain ranges" (Hald 2008, 4). It is delimited to the west by the Euphrates, to the east by the Tigris and to the north by the Taurus mountain ranges. The modern Syrian and Iraqi parts of the region are referred to as the Jezira. It is sometimes described as the "granary" or "breadbasket" of Syria as it provides 25% of the country's cereal harvest (Hald 2008, 4). The Upper Khabur region in which Tell Brak and Khirbet al-Fakhar are situated is an alluvial plain in the central upper part of Northern Mesopotamia composed of the Khabur (a tributary of the Euphrates) and many important wadis which join it along its way. These wadis and the Khabur congregate in a relative bottleneck between the Jebel Abd el-Aziz and Jebel Sinjar mountains. The area south of these mountains can be referred to as the Lower Khabur.

Just like most of northern Mesopotamia, the region is composed mostly of flat steppe. Additionally, similarly to the way waterways must have been used for transport and communication in the alluvial plain of southern Mesopotamia, "the Khabur and its tributaries are likely to have acted as routes of communication and exchange through the region, and towards southern Mesopotamia" (Hald 2008, 4). Water availability in the northern plains was higher during the Late Chalcolithic than it is today (Hald 2008, 6), when most rivers are dry for most of the year. Augusta McMahon gives for instance the example of Wadi Jaghjagh which is "central to the

Upper Khabur drainage and close to which Tell Brak sits, [and which] flowed year-round during the fourth millennium BC and supported beds of reeds and stands of poplar, willow, tamarisk and ash trees." (McMahon 2019, 7). The density of perennial or seasonal waterways in the Upper Khabur region was therefore higher and their role as routes for transportation and communication and as water providers must not be underestimated.

Apart from the Euphrates and Tigris, wadis are also an essential part of the north's topographic setting. They meander but provide a relatively stable environment in comparison to the more chaotic water flow of the south (McMahon 2019, 7). But even though the North's climate seemed favourable at first glance, it also had limits. Indeed, although "the Upper Khabur and Iraqi Jezira lie above the 250-mm annual rainfall isohyet which is the minimum for rainfed farming" (McMahon 2019, 7), the southern part of the region was at high risk. This risk would have been even more present for large settlements such as the ones this paper is concerned with. Still, the wide plains available in the area and the proximity with the modern "breadbasket of Syria" make it probable that the "total amount of crops produced were potentially as great as, or even greater than, what could be achieved in southern Mesopotamia" (Hald 2008, 4). Additionally, as mentioned earlier the Upper Khabur's higher density of waterways made it easy to transport resources along the alluvium. But the fact remains that a precise reconstruction of northern Mesopotamia past climate across the fourth millennium BC is still lacking. Both a moister climate and a gradual aridification have been proposed (McMahon 2019, 7). Therefore, the real impact of the climate on North Mesopotamia's trajectory, and in a broader context across neighboring regions, still needs to be more precisely assessed.

2.1.3. Research bias

Apart from differences in geographical features and obvious evidence for varying trajectories between the two regions, other factors have influenced the way their development has been narrated. For instance, southern Mesopotamia's archaeological tradition started earlier than the North. This meant that, for a long time, the archaeology of the South was the best known of the two (McMahon 2019, 2). However, this trend is now reversing. Furthermore, southern Mesopotamia's early expressions of urbanism were accompanied by closely related textual evidence. This inevitably gave another dimension to its study. These factors had a strong influence on the way the archaeology of the region was understood, giving

more importance to the southern trajectory. For these reasons, South Mesopotamia has traditionally been seen as the cradle of civilization in opposition to the North which would then have been colonized, as mentioned earlier in the introduction of this paper. As Algaze's model shows, there is of course data to support this view, but the heuristic distinction between North and South also stems partly from the historiography of the archaeological research.

2.2 Phases of inter-regional interactions and the Late Ubaid

According to Gil Stein (2012), there were two peaks of interaction between the three regions previously mentioned that are of interest for this study: the Ubaid period (5300-4500 BC) and Middle/Late Uruk Phase/Late Chalcolithic 4-5 (3700-3100) (Stein 2012, 125-126). The first phase was "an interaction sphere" (Stein 2012, 126) characterized by shared cultural components. The second phase is what has been called the "Uruk expansion" and differs from the first phase by its colonial nature, involving movement of material culture as well as people outward from the southern Mesopotamian plains (McMahon 2019, 4). This latter phase was the one which had been identified as the moment when markers of complexity first appeared in North Mesopotamia. As explained earlier, this model has been challenged by the multiple discoveries of earlier signs of complex societies and the persistence of local traits despite southern expansion (McMahon 2019, 5). Given the focus of this thesis – that is the possible independent development of urban settlements in North Mesopotamia – the focus will be on the period in-between these two phases of interaction (LC 1-early LC4; 4400-3500 BC).

The term Ubaid was originally used to designate a style of pottery from southern Iraq, taking its name from the site of Tell al-Ubaid which was first explored in 1919. The Ubaidian pottery style designated a "regionally diversified style of black-painted buff pottery found throughout Mesopotamia and in southeastern Turkey, northern Syria, western Iran, and along the Persian Gulf littoral" (Carter and Philip 2010, 2). Later around 1960, Joan Oates used the stratigraphic sequence from Eridu to define an Ubaidian chronology comprising four phases, from Ubaid 1 to Ubaid 4. The ceramic found at the eponymous site of Tell al-Ubaid corresponds to the Ubaid 3 phase. By extension, other cultural elements were associated to the chronology (such as tripartite architecture) and were sometimes perceived as representative of a homogenous archaeological culture, an "Ubaid identity". Robert Carter and Graham Philip see this as problematic and argue that terms such as

"interaction sphere" or "horizon style", as promoted by Gil Stein, better suit what the Ubaid really is.

The later Ubaid 3-4 phases (5300-4500 BC; Stein 2012 Tab. 1, 129) are notably characterized by shared cultural aspects between northern and southern Mesopotamia and eastern Anatolia (Stein 2012, 128). Some traits that are found in southern Mesopotamian in earlier Ubaid phases seem to have spread northwards. In northern regions, this period is therefore called the "Northern Ubaid". It has been radiocarbon dated in a time range of ca. 5300-4500 BC (Stein 2012, 128). The spread of southern Ubaidian markers was slow and seemingly peaceful. In North Mesopotamia, they partly replaced pre-existing ones that were part of the Halaf identity, a north Mesopotamia Neolithic culture. But "local Halaf-derived cultural identities co-existed with an overarching Ubaid pan-regional identity" (Stein 2012, 128). This admixture, instead of total replacement, explain the use of the term "Northern Ubaid" to distinguish the northern trajectory. The importance of the Ubaid in the present thesis resides in its inter-regional interactive nature and fact that it precedes a more regionalized Late Chalcolithic. It is also important because evidence indicates that some complexity markers that we assess for the Late Chalcolithic actually had their origin in the Ubaid (Stein 2012, 130-132; Frangipane 2012, 47).

Regarding ceramics, the emergence of the horizontal turntable made production simpler and faster. This, among other things, opened the way for mass-production and the valorisation of pottery-making as a profession. Changes in the architecture (i.e tripartite plan and large halls) also points to changes in social organisation at least at the household level (Nissen and Heine 2009, 18). Additionally, large buildings with specific functions are found in some sites (Stein 2012,

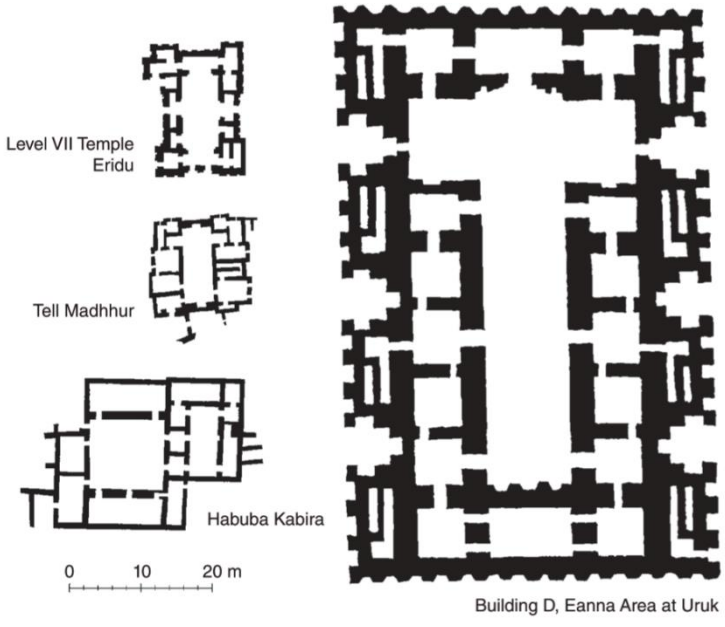


Figure 4 Uruk period tripartite buildings from Habuba Kabira and Uruk, with earlier Ubaid tripartite buildings from Eridu and Tell Madhhur (Ur 2012, 539, fig.28.3)

130; Frangipane 2015, 3-5). Some of these buildings followed the same tripartite plan as normal houses. Some large sites existed at the time such at Tell Zeidan and Tell al-Hawa (Lawrence and Wilkinson 2015, 330), but most settlements in the North were small villages occupied for long periods of time and fissioning whenever they grew too large (Ur 2020, 43). The landscape was "dotted with thousands of such small prehistoric mounds." (Ur 2020, 43). Although small, these sites could display signs of emerging complexity such as at Tell Abada and Tepe Gawra. The use of administrative technology developed, and we have evidence for its centralisation (i.e. seals and sealings being found mostly in certain buildings) and its use as a mean to control resources (Frangipane 2015, 3-5). All in all, this evidence also points to the emergence of social differentiation based on household hierarchies (Stein 2012, 130; Frangipane 2015, 5)

2.3 The North Mesopotamia Late Chalcolithic/post-Ubaid

Traditionally, the periods succeeding the Ubaid which saw the emergence of more independent trajectories have been designated as "post-Ubaid". Carter and Philip argue that "it is likely that what has traditionally been seen as the dissolution of the Ubaid reflects varying local responses to a range of new possibilities" (Carter and Philip 2010, 15). Indeed, trajectories taken by post-Ubaid societies were diverse, demonstrating the high variability between groups using shared ceramic types (Carter and Philip 2010, 15). The end of the Northern Ubaid period is traditionally identified by the disappearance of typical Ubaidian ceramics and its replacement by mass-produced ones (Al Quntar and Abu Jayyab 2014, 89). This seemingly indicates increased specialization, which went along "unprecedented settlement growth and the development of settlement hierarchy (Adams 1981; Ur *et al*. 2007; Wilkinson & Tucker 1995), emergence of large public buildings […] and evidence for organized labor and administrative systems (Oates *et al.* 2007)" (Al Quntar and Abu Jayyab 2014, 89). This also marks a split between the north and the south, and them taking more independent trajectories from each other.

As seen for the Ubaid, labels used in research to categorize North Mesopotamia's chronology had been traditionally borrowed from the neighbouring regions. This has had the tendency of creating confusion between periods of strong inter-regional contacts, and periods where clearly distinct trajectories were observed. In this regard, this following period used to be named "Northern Uruk" (or Gawran) in reference to a supposed southern influence on the region. After a conference in Santa Fe in 1998 and the increasing evidence of the North independence in the

post-Ubaid period, the use of Late Chalcolithic and its five phases (LC1-LC5) (tab. 1), similar to Anatolia and the Levant, was decided (McMahon 2019, 5). The use of this terminology is important for the scientific discussion because it allows to "avoid projecting a south Mesopotamian chronology and modes of organization onto northern regions that developed social complexity through processes that were largely, if not completely indigenous" (Stein 2012, 126). As Stein adds, Chalcolithic Upper Mesopotamia needs to be viewed "as a series of distinct localized regions that shared broad similarities in basic elements of material culture, religion, and political economy" (Stein 2012, 126).

In regard to the radiocarbon dating of the Late Chalcolithic in North Mesopotamia, no site provides a full dates sequence for the whole period. Therefore, "hinge dates, for phase transitions, remain flexible" (McMahon 2019, 5). This also explains the importance of pottery typologies to reconstruct the chronology of the regions concerned (Upper Euphrates, Upper Khabur, Iraqi Jezira and Transcaucasia). Consequently, the chronology is far from precise and the "state of knowledge across the Late Chalcolithic is uneven" (McMahon 2019, 6). Notably, the understanding of the spread of southern material culture between LC3 and LC4 remains evasive. This is made particularly difficult by the persistence of local material culture traditions from LC3 to LC4 despite this spread.

2.3.1. Late Chalcolithic 1

As mentioned earlier, the Late Chalcolithic 1 (LC1; 4400-4200 BC; Ur *et al.* 2011) is characterized by a loosening of the links between North and South Mesopotamia. This is visible in a "gradual disappearance of Ubaid pottery styles across Upper Mesopotamia in the Ubaid-LC1 transition" (Stein 2012, 132). These are partly replaced by simplistic and mass-produced bowls part of the broader Coba bowl tradition (Frangipane 2012, 43) (fig. 5: 1-4). At Tell Zeidan for instance, these bowls form more than 50% of the LC1 ceramics. Catherine Marro uses the term "Standardized Ware" horizon to designate the period and region in reference to the standardization of both the ceramic and lithic productions (Marro 2012, 29). This shift would be a sign of changing "social and economic values" (Marro 2012, 27).

We have little evidence for other aspects related to social complexity. Stein argues that "the LC1 period is the largest lacuna in our understanding of the developmental sequence of social complexity in Upper Mesopotamia" (Stein 2012, 132). This is accentuated by the fact that the period itself serves as a sort of a transitional period

between the interaction of the Late Ubaid and the more regionally differentiated Late Chalcolithic. LC1's limits are then hard to grasp, making its identification more difficult in the process. However, it seems that trends toward economic differentiation and elite development were continuing and started becoming more prominent during the LC1 (Stein 2012, 132). For instance, Marro argues that the development of infant burials and the rise of inequalities in funeral practices is a sign for the growing importance of family dynasties (Marro 2012, 29). Additionally, 8km to the North of Tell Brak in Tell Feres al-Sharqi a monumental building (fig. 6) was in use during the LC 1. It seemed to have served as a meeting hall and a home (Vallet 2018, 159)

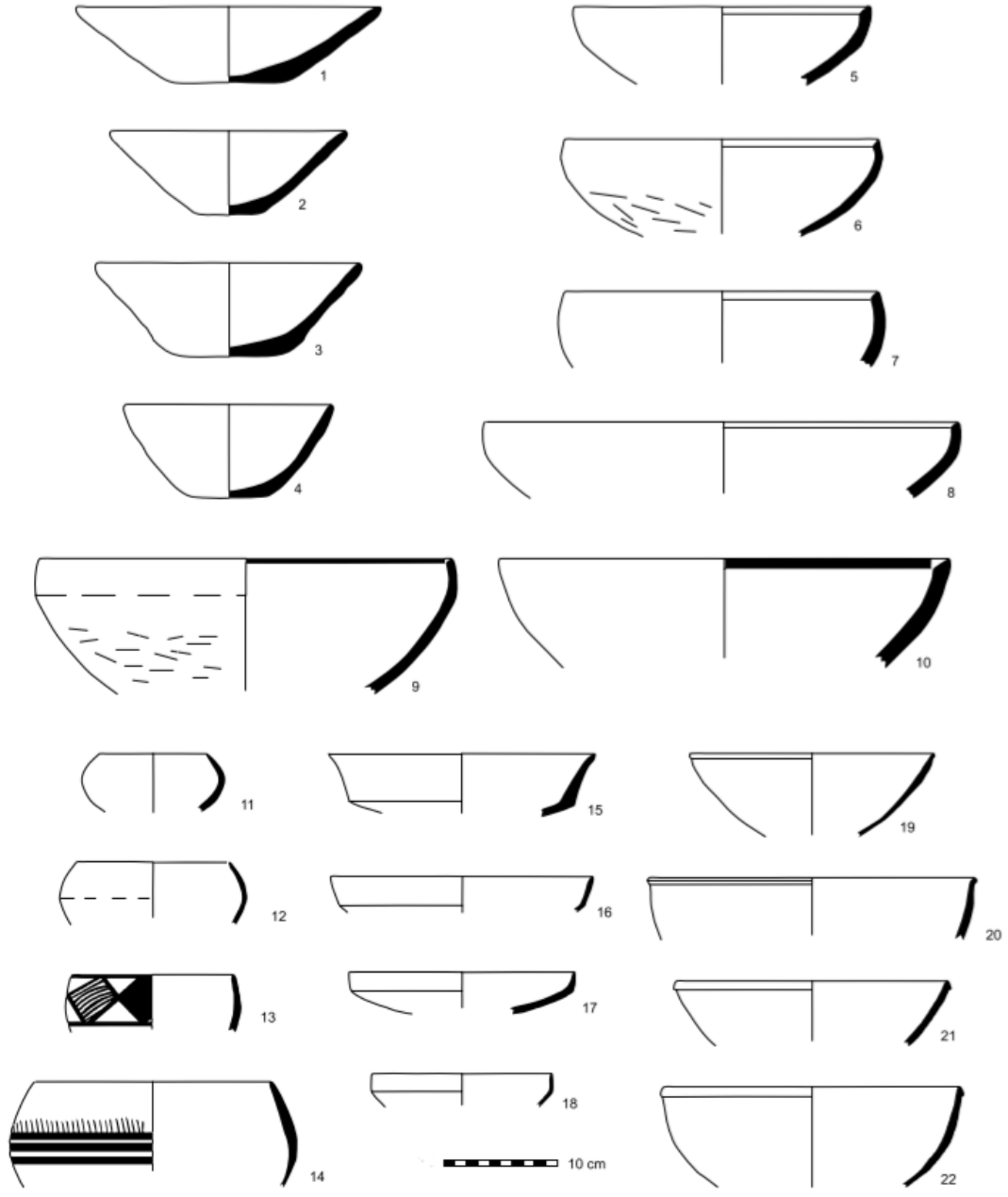


Figure 5 Bowls from Khirbet al-Fakhar/Hamoukar (Al Quntar, Khalidi and Ur 2011, 158, fig. 6)

2.3.2. Late Chalcolithic 2

The Late Chalcolithic 2 (LC2; 4200-3900; Ur *et al.* 2011 is contemporary with the southern Mesopotamia Early Uruk, but "there is no material evidence for southern cultural influences on the north in the late 5th-early 4th millennia BC" (Stein 2012, 135). The LC2 is characterized by further concrete architectural evidence supporting an emerging formalized leadership. Stein gives the examples of the "round house" in Tepe Gawra, a massive stone enclosure in Hacinebi and the monumental basal threshold building in Tell Brak which will be discussed later (Stein 2012, 135). In Tell Feres, the layout of its LC2 levels (fig. 7) hints to a form of planned settlement growth followed by a new large public building (Vallet 2018, 163-165). This points to the presence of a horizontal or vertical power. Some mortuary evidence in Gawra and Hacinebi also supports the idea of a wealthy elite with a hereditary component (see Stein 2012, 135).

The LC2 also demonstrates evidence of increasing "extensive exchange network and high volumes of trade in raw materials used for both prestige goods and everyday commodities" (Stein 2012, 135). Hacinebi bears evidence of long-distance exchange networks which aimed at acquiring exotic materials such as cowrie shells, chlorite and copper. This is observable in other sites across the region (McMahonn 2019, 25), and it is especially relevant given the importance that trade seems to have played for Tell Brak and Tell Hamoukar/Khirbet al-Fakhar. Obsidian is also a good example of long-distance travelling material, with a large quantity of Anatolian obsidian found in Khirbet-al Fakhar for this period. Additionally, the period sees the emergence of unprecedently large sites, of whom the ones this paper is concerned with are a part of. All in all, the LC2 presents strong evidence in North Mesopotamia for multi-layered social organization with formalized political leaders, hereditary elites with possible distinct markers across the region (seen through glyptic evidence) and very large sites which might hint at a possible urban nature (Stein 2012, 139).

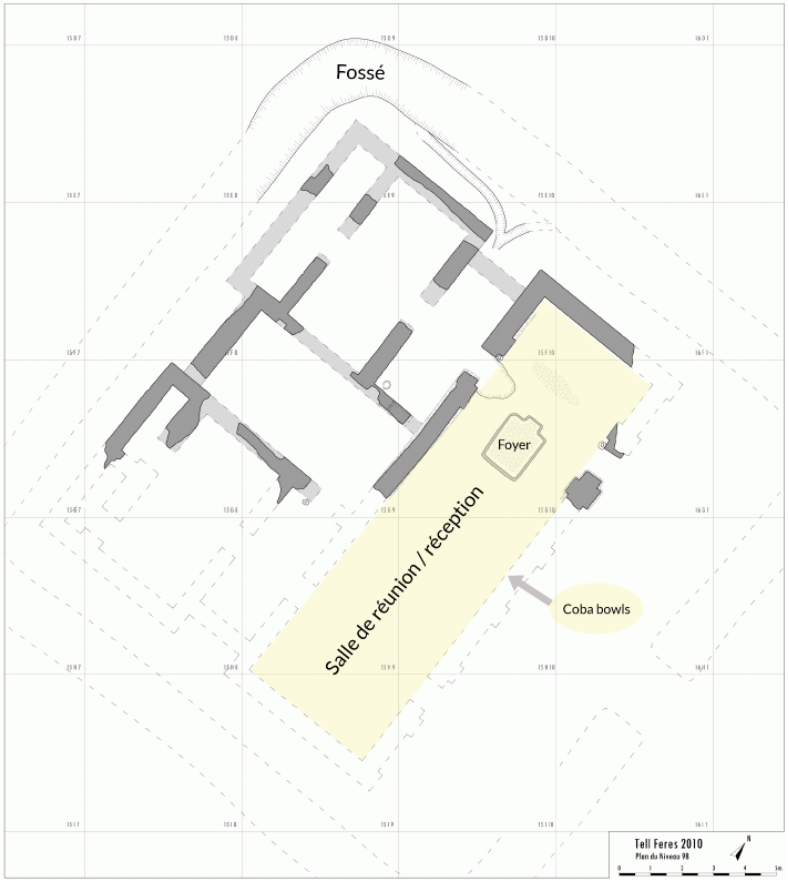


Figure 6 Public area of the monumental building in Tell Feres during the LC1 (image by the Franco-Syrian Mission in Tell Feres)

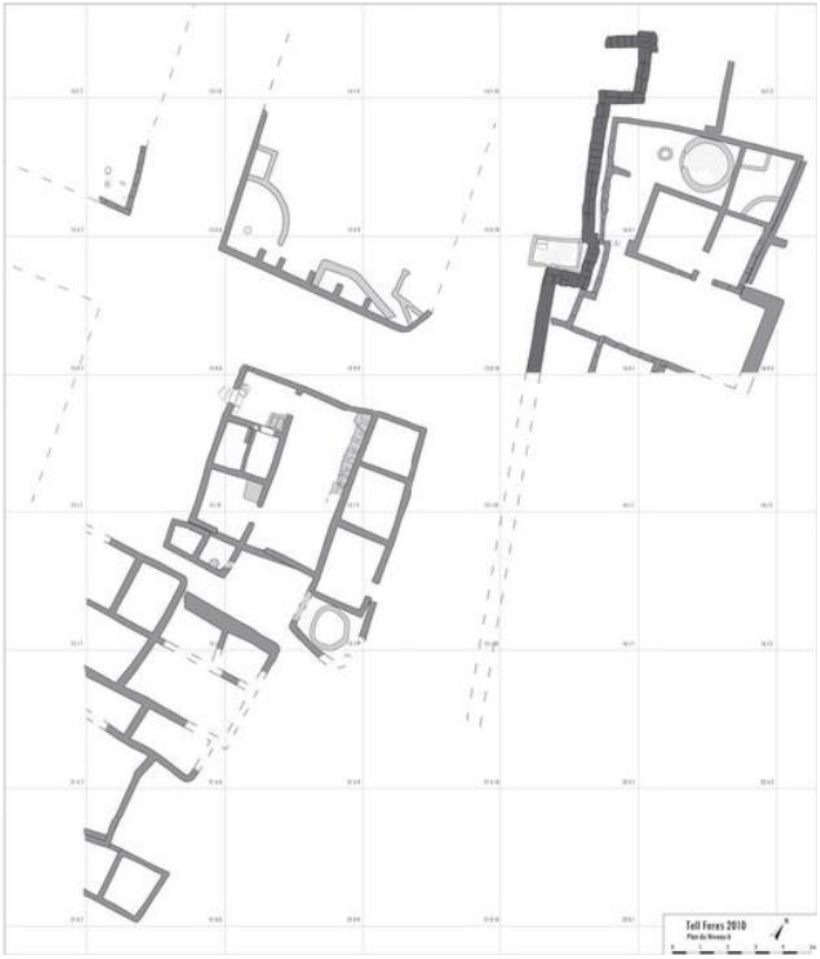


Figure 7 Plan of Tell Feres at the beginning of the LC2 (image by the Franco-Syrian Mission in Tell Feres)

2.3.3. Late Chalcolithic 3

The Late Chalcolithic 3 (LC3; 3900-3600 BC; Ur *et al.* 2011) is approximately contemporaneous with south Mesopotamia early Middle Uruk, but there are no signs of significant interaction or cultural influences in the north (Stein 2012, 140). The LC3 demonstrates a certain continuity with the preceding LC2 (Stein 2012, 139-140). But developments are unevenly distributed across the region, "suggesting a fragmented political landscape in Upper Mesopotamia" (Stein 2012, 140). The Balikh valley was for instance largely abandoned in the late LC2, whereas the Khabur valley continues its trajectory of settlement complexification (Stein 2012, 140).

However, the ceramic assemblage stays quite homogenous in the whole region (Stein 2012, 140). Additionally, there is a widespread distribution of so-called eye idols/spectacle idols/hut symbols (fig. 8-10) between the main sites of the region (Hacinebi, Hamoukar, Brak, Gawra) which suggests a "shared set of religious beliefs" (Stein 2012, 140). This is supported by the development of temples in Brak and Gawra. Furthermore, the emerging elite and political leadership phenomena intensify and seem linked to the operation of a centralized administrative bureaucracy serving a political leader (Stein 2012, 140-141).

The latter dimension is notably visible in Tell Brak and Tell Hamoukar, the biggest sites of the time in North Mesopotamia. The monumental building found in Tell Brak TW18 and the numerous seal impressions and stamp seals found in the burnt building of Hamoukar and in Brak/Tell Majnouna suggest such an organization. This form of administrative organisation is seen almost everywhere in the region (Ur 2009, 14-15). The emergence of a public building complex in Tepe Gawra which held numerous container sealings also "testifies to the progressive development of centralised institutions that were able to exercise some forms of political and socio-economic control" (Peyronel and Vacca 2020, 102). Additionally, the LC3 imagery on stamp-seals tend to represent scenes and figures (notably lions) that are associated with power in later periods (McMahon 2019, 27).

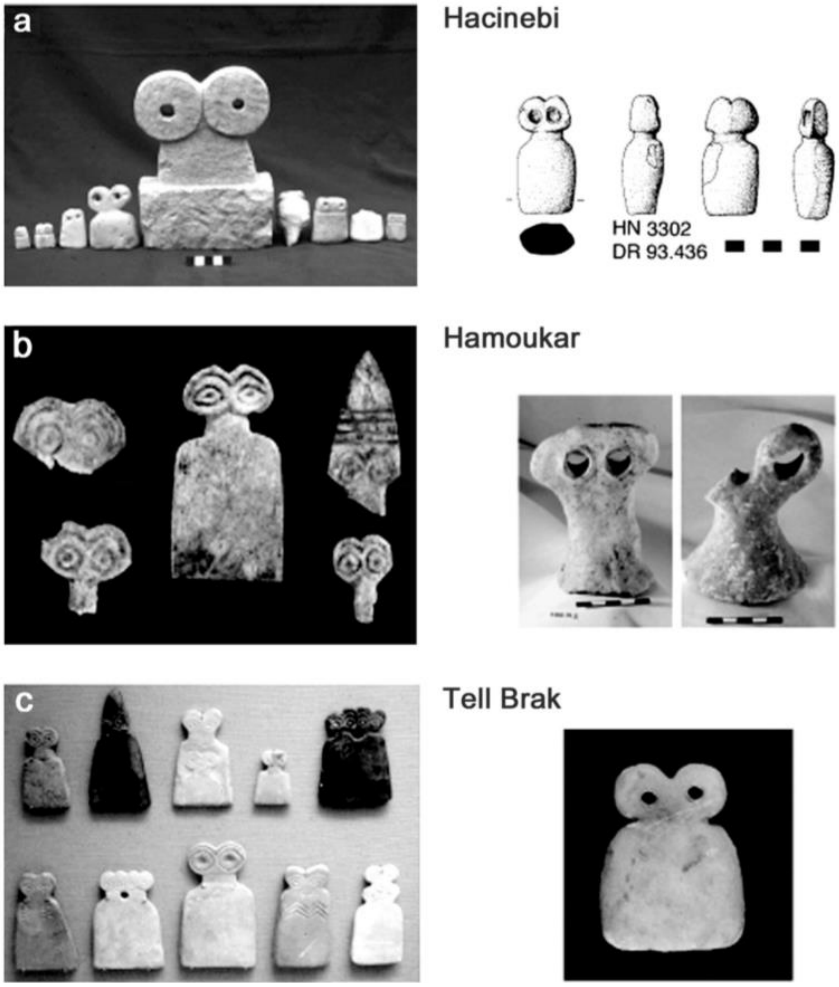


Figure 8 LC3 'eye idols' from Hacinebi (a), Hamoukar (b) and Tell Brak (c) (Stein 2012, 138, fig. 8)

Figure 9 LC1-2 'spectacle idol' (H. 21.4 cm) from Tell Brak's Area TW (McMahon and Oates 2007, 154, fig. 8)

Figure 10 Clay 'hut symbols' (H. 12 cm) from LC1-2 trenches in Khirbet al Fakhar (Al Quntar, Khalidi and Ur 2011, 155, fig. 3)

2.3.4. Late Chalcolithic 4 and Late Chalcolithic 5

The Late Chalcolithic 4 and Late Chalcolithic 5 (LC4 and LC5; 3600-3400 and 3400-3100 BC; Ur *et al.* 2011) mark "renewed intensive contacts between southern Mesopotamia, Upper Mesopotamia and Eastern Anatolia" (Stein 2012, 141). It is contemporaneous with the late Middle Uruk and show the first signs of the so-called "Uruk expansion" (see Algaze 1993). Consequently, they are discussed together here because they mark a shift in the political, social and economic context of North Mesopotamia. These intensive contacts are the most visible with the southern enclaves such as Habuba Kabira and Jebel Aruda in the Middle Euphrates (Akkermans and Schwartz 2003, 190-197; Wilkinson *et al.* 2014, 79). These colonies imply movement of people and not only of objects or ideas.

In other regions like in the Upper Khabur, large colonies were not necessarily implanted, but local material culture was strongly mixed with southern one in local settlements (Akkermans and Schwartz 2003, 200). Small scale Uruk trading enclaves were also created, such as Hacinebi in the Upper Euphrates (Stein 2012, 142). Southern influence took many forms, certainly adapting to local socio-political contexts. It was not as one-sided as previously thought (Akkermans and Schwartz 2003, 204). This period marks the beginning of a less independent trajectory for North Mesopotamia and is therefore less relevant for this thesis. The end of the LC5 marks the end of an initial phase of expansion in the northern Fertile Crescent with some local large centres either contracting or disappearing (see Akkermans and Schwartz 2003, 209-210; Lawrence and Wilkinson 2015)

	Time bracket	Major northern sites	Main dimensions
LC1	4400-4200 BC	Hammam at-Turkman, Helawa, **Khirbet al-Fakhar**, Nineveh, Surezha, **Tell Brak**, Tell Feres al-Sharqi, Tell Leilan, Tell Mashnaqa, Tell Zeidan and Tepe Gawra	• Loosening of the links between regions of Greater Mesopotamia • Gradual disappearance of Ubaid pottery styles replaced by simplistic and mass-produced bowls • Lacuna in current research • Growing importance of family dynasties
LC2	4200-3900 BC	Grai Resh, Hammam at-Turkman, Helawa, **Khirbet al-Fakhar**, Qalinj Agha, Nineveh, Surezha, Tell Baqrta, **Tell Brak**, Tell Feres al-Sharqi, **Tell Hamoukar**, Tell Leilan, Tell Mashnaqa, Tell Nader, Tell Zeidan and Tepe Gawra,	• No material evidence for southern cultural influences on the North • Strong architectural evidence supporting an emerging formalized leadership • Increasing extensive exchange network • Emergence of unprecedently large sites emptying areas around them • Development of a common glyptic style for stamp-seals in the North • Growing socio-economic complexity
LC3	3900-3600 BC	Grai Resh, Helawa, Nineveh, Surezha, Tell al-Hawa, **Tell Brak**, **Tell Hamoukar**, Tell Leilan, Tell Nader, Tell Mashnaqa and Tepe Gawra	• No signs of significant interaction or southern cultural influences in the North • Further development of complex processes that began during the LC2 • Religious institutions • Large scale feasting
LC4	3600-3400 BC	Hacinebi, Nineveh, Sheikh Hassan, **Tell Brak**, Tell Feres al-Sharqi, **Tell Hamoukar** and Tell Leilan	• First southern colonies in North Mesopotamia • Substantial cultural and economic interactions between North and South
LC5	3400-3100 BC	Habuba Kabira, Hacinebi, Jebel Aruda, Sheikh Hassan, Nineveh, **Tell Brak**, Tell Feres al-Sharqi, **Tell Hamoukar** and Tell Leilan	• Development of southern colonies • Strong influence of southern cultural traits over northern ones • Economic interactions • Beginning of a decline for large centres

Table 1. Non-exhaustive list of major northern sites, and main dimensions related to complexity for each phase of the Late Chalcolithic (based on Stein 2012; Akkermans and Schwartz 2003; Ur 2009; Ur et al. 2011; Peyronel and Vacca 2020; Lawrence and Wilkinson 2015; Wilkinson et al. 2014)

3. Urbanism studies in archaeology

Thousands of years earlier than first cities, hunting and gathering was replaced by agropastoralism, becoming the norm for most humans, and imposing itself in only a couple millennia (Jordan and Cummings 2014, 1). Similarly, urbanism is a young process on the scale of human history – the first cities having emerged in the last six to seven millennia – but is on the way to becoming the norm worldwide (Marcus and Sabloff 2008, 3). Additionally, given the fact that most of the world's population now lives in urban environments – which are the products of centuries or millennia of urban tradition (see Smith and Hein 2017) – the topic is very much intertwined with modern preconceptions and concerns (Marcus and Sabloff 2008, 3; Jennings and Earle 2016, 486). Consequently, understanding the genesis of such a young but global phenomenon generates a lot of interest. However, the topic must first be disentangled from its ideological stakes in order to be properly studied. In the last decades, comparative studies, supported by an ever-wider range of periods and regions excavated demonstrating the diversity of urbanism, have allowed us to do such a reassessment.

Following a chronological principle, I will start the chapter by presenting two approaches to urbanism that are constitutive of the research field. Louis Wirth (1938) and Gordon Childe's (1950) theories, although criticized and reworked, still bear an influence on the way cities are conceptualized today. Presenting the main points of their respective models therefore remains relevant. The impact of these two authors is notably felt in the biases they, and the paradigm in which they were inscribed, left. In this regard, I will then present what the study of ancient urbanism implies on an ideological level by aiming to expose biases that exist in the field. One of the main issues in the study of urbanism in archaeology is the epistemological entanglement between different concepts involved, notably "the state" and the "the city" (Smith 2003, 12; Jennings and Earle 2016, 475). As I will detail later, even though these entanglements do rely on concrete evidence and remain relevant, they also are the result of research traditions and ethnocentric worldviews. As I believe that most theoretical issues regarding ancient urbanism are related to or are encompassed into these latter biases, I will here focus on those.

Once the different biases have been highlighted, it is easier to then present the different paradigms that exist in the study of urbanism in archaeology. In the last century, urbanism has been studied in many different ways. It is especially true given the fact that the subject is not limited to archaeology but was first theorized

by disciplines such as geography, sociology, demography, and other social sciences (Marcus and Sabloff 2008, 4). The main characteristics and stakes of these theories will therefore be presented. Depending on the researcher's focus and data used, each will have different answers to the main questions regarding ancient urbanism. Why did cities emerge? How did they develop and were able to last? When and where did the first ones emerge? My goal here will be to find the ideal middle ground between all these different takes. Ultimately, I will strongly rely on Michael Smith's (2016) method of analysis of the urban nature of archaeological sites to assess Tell Brak, Khirbet al-Fakhar and Tell Hamoukar. Before that final part, I will also discuss the way ancient urbanism has been theorised in Mesopotamia.

3.1 Louis Wirth's influential paper on the definition of a city

In 1938, Louis Wirth wrote a paper in the American Journal of Sociology titled "Urbanism as a way of life" which ended up having a strong impact on the way cities were defined. Wirth focused on three dimensions which he believed were at the core of what a city is. He defined a city "as a relatively large, dense, and permanent settlement of socially heterogenous individuals" (Wirth 1938, 8). Interestingly, Wirth acknowledged the distinction there had to be made between defining a city and defining the urbanism phenomenon in itself. He perceived the city as a "form of human association" (Wirth 1938, 4) whereas 'urbanism' is a set of traits "which makes up the characteristic mode of life in city" (Wirth 1938, 7) but is not limited to cities. It is more of a societal phenomenon that includes the influence of a city on its hinterland (Wirth 1938, 7). In this regard, 'urbanization' defines the spread of these traits.

These same terminological issues are also discussed by Monica Smith (2003), with very similar results. She uses the term 'urban' as a reference to the specific traits of a city in its context, often in opposition to a non-urban hinterland. Similarly to Wirth, 'urbanism' in her paper refers to the global phenomenon of cities in all their aspects as unique forms of social organization. 'Urbanization' defines "a whole territorial expanse becoming linked with an center-dominated ethos" (M.L. Smith 2003, 13). The most common territorial expanse we would think of would be a state, but any territorial expanse "marked by the presence and effects of urban locales" (M.L. Smith 2003, 13) are encompassed.

Going back to Wirth's definition of a city, he details why a large, dense and heterogenous population is characteristic of modern cities. A large population

implies that inhabitants automatically know a smaller proportion of the people they mix with everyday than in a rural settlement. Consequently, social ties change and interactions are generally more impersonal (Wirth 1938, 12). Regarding density, Wirth argues that it fosters “a spirit of competition, aggrandizement, and mutual exploitation” (Wirth 1938, 15) in cities, given that interactions involve individuals with lesser emotional ties. Finally, the heterogeneity of the inhabitants is the result of the genesis of a city as perceived by Wirth, as he believed that “the city is the product of growth rather than of instantaneous creation” (Wirth 1938, 3). Wirth argues that the population of a city grows mainly from a rural movement to cities rather than from within. Consequently, people from different backgrounds interact inside the city. This creates a phenomenon of general depersonalization, what Wirth calls a “leveling tendency” (Wirth 1938, 17), caused by the necessity for inhabitants to “subordinate some of [their] individuality to the demands of the larger community” (Wirth 1938, 18). These different definitional elements have had a strong influence on following research as will be discussed later.

3.2 Gordon Childe’s influential check-list approach to ancient urbanism

In 1950, a paper written by Gordon Childe and titled “The urban revolution” marked a keystone in the issue of urbanism theory in archaeology. The paper aimed at presenting the city as the “resultant and symbol of a ‘revolution’ that initiated a new economic stage in the evolution of society” (Childe 1950, 3). From the beginning Childe, openly falls within the scope of evolutionary theories classifying human societies between ‘savagery’, ‘barbarism’ and ‘civilization’ (Childe 1950, 3). The idea of a ‘revolution’ symbolized by the emergence of cities and deeply modifying human societies also stems from the same line of thought. Additionally, in the continuity of Louis Wirth’s focus on population statistics, Childe notes that this said revolution is observable in demography solely (Childe 1950, 4). The influence of Wirth’s definition of a city is explicit when Childe says that “a certain size of settlement and density of population, is an essential feature of civilization” (Childe 1950, 4). Childe marks a direct link between the notions of ‘city’ and ‘civilization’.

Childe’s urban revolution follows on from his theory of a preceding ‘Neolithic revolution’ that “allowed an expansion of population and enormously increased the carrying capacity of suitable land” (Childe 1950, 4) and took place during the Neolithic. But during this revolution “the growth of population was not reflected so much in the enlargement of the settlement unit as in a multiplication of settlements” (Childe 1950, 5). The new economy that emerged during the Neolithic Revolution

also allowed for the regular production of a surplus of resources. This phenomenon of accumulation was even greater in regions where irrigation cultivation combined with stock-breeding and fishing were developed (i.e. valleys of the Nile, Mesopotamia and the Indus valley). Greater food stability in specific areas led to population aggregation which, according to Childe, is what led to the rise of the first cities in these three regions. Additionally, three millennia later, cities emerged in Mesoamerica as well, making it an independent urban trajectory with clear differences in social, technological, and environmental context. This represented a challenge for Childe (Childe 1950, 9), but he nevertheless tried to pinpoint "the minimum definition of a city" (Childe 1950, 9) through a comparative mindset.

To do so, he put out ten criteria that aimed at distinguishing "even the earliest cities from any older or contemporary villages" (Childe 1950, 9). This rather radical and global comparative approach to urbanism is one of the main reasons explaining Childe's theory's resilience in the research field. He presented his criteria as follows:

1. Contextually large size (equating large population)
2. Presence of specialists who did not produce their own food
3. Centralized accumulation of surpluses through taxation in the name of a deity or divine king
4. Presence of monumental public buildings
5. Presence of a social hierarchy and classes
6. Use of writing and the presence of scripts
7. Development of sciences
8. Emergence of realistic art
9. Development of long-distance trade
10. Primacy of the importance of the locus of residence over kinship, characterizing the basis of a State (i.e. emergence of a state identity)

Since then, the Childean check-list has certainly come under a lot of criticism. His model was mostly based on data from Mesopotamia. The criteria he used were therefore too specific and were hard to apply to other regions. Mogens Herman Hansen (2008) summarized the main critics that Childe's list endured. Concerning writing, Hansen points out that some of the oldest cities emerged in contexts without writing. Additionally, some societies developed writing before cities such as the Scandinavian runes in Denmark (Hansen 2008, 68-69). With this argument concerning writing, Childe's criteria about sciences collapses as well because the two of them were linked in his theory. Thirdly, concerning the presence of

monumental public buildings, we now have multiple examples of societies that raised forms of monumentality without having cities (Hansen 2008, 69). Furthermore, the issue of monumentality in archaeology has evolved a lot since Childe's paper, and its boundaries are now quite evasive. Making it an exclusive component of cities is then problematic. Finally, Hansen tackles the issue of the link between urbanism and statehood, which Childe perceived as constitutive of each other. This is debated in archaeology and represents one of the main issues of ancient urbanism because it encompasses many preconceptions stemming from evolutionary theories. This will be detailed in the next part.

3.3 What does studying urbanism implies? The relation between urbanism and statehood

Until recently and even still today for certain researcher, the study of "the city" in archaeology has been truly more about studying "the state" (Smith 2003, 12; Jennings and Earle 2016, 475). The link between these two concepts is partly due to the intellectual legacy left by Gordon Childe's paper (Smith 2003, 12; Hansen 2008; Jennings and Earle 2016, 486). As noted by Colin Renfrew, Childe's criteria mostly refer "to urban functions rather than to urban structural features" (Renfrew 2008, 47). By doing so, Childe was actually more focusing on defining "a state society" (Renfrew 2008, 47), as he used the term 'civilization' "to denote a condition in which states were marked by cities (Smith 2003, 12). According to Morgens Herman Hansen, Childe "took it for granted that politically urbanized civilizations were organized as states" (Hansen 2008, 69; Smith 2003, 12). Childe's approach is comprised in Justin Jennings and Timothy Earle's (2016) critic when they say that ""the enduring influence of "civilization" as an object of study has led us to think […] of cities and states arriving simultaneously and fully formed" (Jennings and Earle 2016, 476)". These terminological and heuristic intermingling are what caused a lot of the issues mentioned earlier.

These biases could be traced back more generally to the legacy left by evolutionary theories which conceptualized human socio-economic-political organization as several stages through which every human society go through. As Jennings and Earle mentions, this idea of evolutionary stages was codified in the late nineteenth-century with the development of ethnography and historical interests (Jennings and Earle 2016, 475). Childe's use of the term 'civilization' mentioned earlier is a direct heritage of these lines of thoughts. Indeed, human societies were categorized between savagery, barbarism, and civilization stages. Cities and states were used

as indicators of civilization. These so-called universal stages were abandoned at the beginning of the twentieth century, but the practice of identifying types of societies as a heuristic tool kept on going (Jennings and Earle 2016, 475). Notably, it pushed researchers into trying to pinpoint major shifts in cultural evolution and putting emphasis on transformation rather than continuity (Jennings and Earle 2016, 475). In this regard, Childe is a good example of this trend, two of his major models being termed “Urban revolution” and “Neolithic revolution”. All these elements led to think of the development of states and cities as closely related phenomenon, and evidence for major shifts.

Nowadays, the focus tends to be more on highlighting continuity, as demonstrated in Jennings and Earle’s paper for instance. Phenomena such as the development of urbanism are seen as long-term indicators of slow and global changes. Identifying shifting points or symbols of sudden change is being replaced by the analysis of long-term patterns. Furthermore, we now seemingly have evidence that both civilizations organized as states but without cities, and urbanized civilizations without statehood have existed (Hansen 2008, 69; Renfrew 2008, 34-35; see Jennings and Earle 2016). Consequently, it seems relevant to see the city and the state as not-necessarily-concurrent phenomena. This is not to say that no link exists between them. But we need to be aware of the legacy left by evolutionary theories on the way this issue has been tackled. I believe it is more constructive to perceive cities and statehood as independent manifestations of a more global process of social complexification.

Renfrew rightly points that out by saying that “when discussing and comparing ancient cities as places and as centers, we should not confuse the discussion with one about archaic states as social organizations” (Renfrew 2008, 36). Doing so should also allow to better understand the relationship between these two phenomena. I personally side by Monica Smith when she says that “cities in the premodern world did not require a state level of political organization, only an initial impetus for settlement, some level of highly visible labor investment, and a sustainable social network afterward” (M.L. Smith 2003, 15). For the sake of the present study and in regard to evidence for urban processes taking place in non-state-like organized societies, it will be postulated here that cities do not necessitate a state-like organization to emerge and function during a certain time at least. Admittedly, as will be detailed later, Tell Brak, Tell Hamoukar and Khirbet al-Fakhar did not emerge in a statehood context.

3.4 Different approaches to ancient urbanism

Childe started his essay by stating that “The concept of ‘city’ is notoriously hard to define.” (Childe 1950, 3). Obviously, this is still the case and might even have become harder given the wider range of urban manifestations considered today (Gayadarska *et al.* 2020, 97). This basic fact explains the diversity of approaches taken by experts in recent decades. One way of classifying approaches to urbanism is by emphasizing the type of data that the researcher chooses to focus on. The functional observation that a city’s main defining feature is that it hosts specific functions or phenomena not found in other types of settlements has been pretty much acknowledged by now. What differentiates the various approaches is to be found in the nature given by the scientist to these unique functions. Depending on the researcher’s focus, five main approaches can be categorized: demographic, economic, geographical, sociological, and political/legal. These approaches are not mutually exclusive and are more often than not combined in models.

3.4.1 Demographic approach and the issue of scale

The demographic approach relates to the focus on purely quantitative evidence in order to categorize a settlement as a city or not. Michael Smith explains (2016) that this stems from Louis Wirth’s classical definition of the city “as a relatively large, dense, and permanent settlement of socially heterogenous individuals” (Wirth 1938, 8). Smith believes it is the most influential because it fits contemporary cities whose status is accorded on the basis of raw numbers. But from an archaeological standpoint, it tends to exclude most ancient cities because these variables vary strongly depending on the region and period (Smith 2016, 154). Additionally, several other issues are related to this approach.

On the one hand, the importance given to settlement size stems from its use as a proxy to estimate the population. When studying ancient settlements, a large site will usually be assessed as having a large population based on population estimates. These are derived from various coefficients, usually depending on the data available (see Birch-Chapman *et al.* 2017). The most common method is the measurement of the number of people living within a hectare. It relies on the premise that “there is a direct correlation between settlement size, population size and population density” (Birch-Chapman *et al.* 2017, 6). But using size to infer population is only useful if the site’s size represents simultaneous occupation. Correctly estimating the correlation between size and population is important, and

assessing contemporaneity is therefore a central issue (Birch-Chapman *et al*. 2017, 9). In a paper tackling the relevancy of size, Frank Hole pinpointed several reasons why a site may archaeologically appear as large without correlating with a large population (Hole 2000, 194). Three are of interest for this thesis.

First, a simple sequential use of the space by a small settlement could have caused a large horizontal spread. By taking the example of Tell Sabi Abyad, a northern Syria Neolithic site, Peter Akkermans highlights such a process. When analysing the architecture with a 'human perspective' in mind, that is thinking in terms of the past inhabitants' perception of a lifetime (i.e. 25-35 years), the pattern uncovered is very different from a century-based perspective. Houses in Sabi Abyad were quite short-lived. People built new ones next to old ones and abandoned buildings were filled little by little until new houses were built on top hundreds of years later (Akkermans 2013, 69-70). Additionally, the site did not consist of one big mound but of multiple simultaneous occupations separated by short distances (Akkermans 2013, 69). This sort of joins Hole's second reason, arguing that pockets of dwellings could have been spread widely with activities taking place in-between. As a consequence, this would leave artefacts over a large area, which is what is believed to have happened in Tell Sabi-Abyad. Finally, a site might be the accumulation of seasonal occupations. This is important because the simple dichotomy between mobile and sedentary communities does not accurately assess the reality of how people lived and interacted during the Late Chalcolithic.

On the other hand, the importance given to a large population stems from its use as a proxy by archaeologists to infer social complexity or specialization (Hole 2000, 206). A growing population is generally understood as a cause for increasing internal conflict, needing in return more institutionalized authority in order to maintain cohesion (Hole 2000, 192; Al Quntar *et al*. 2011, 166). These theories usually rely on ethnographic studies observing the relation between community size and complexity which is generated by the need to resolve growing internal conflict. A famous example is the so-called 'Dunbar's number' which, among other things, predicts the maximum number of people in a social group (ca. 120-150) based on the physiological limitations of the human brain (see Gamble *et al*. 2011). This sort of premise has also been applied in archaeology, with the idea that we could track the development of complexity because it tends to grow when scales expand (see Johnson 1982). In this sense, Gregory Johnson used the term 'scalar stress' (1982) to name this interplay. Nowadays, some researchers have a more nuanced and less quantitative approach to this correlation (i.e. between complexity

and scale). For instance, Gary Feinman (2013) adds an agency-based dimension to the equation by determining the role of cooperation between individuals. In this view, complexity is one variable within a tripartite dynamic that also encompasses scale and 'integration' (i.e. nature and degree of interplay between social units) (Feinman 2013, 35-36).

Even so, the notion of scale is still commonly used in issues such as ancient urbanism. For instance, an often-cited reference is Gideon Sjöberg's threshold of 5000-10000 people in order to qualify a settlement as a city (Marcus and Sabloff 2008, 12; Hansen 2008, 75). But instead of a clear threshold, researchers have also tended to focus rather on the more abstract concept of density. It is indeed more relevant as a proxy to assess what archaeologist are after, which is the social stress generated by a high number of people living in the same place. Finally, assessing density also means being conscious of the issue of contemporaneity detailed earlier. The demographic approach therefore encompasses all these models focusing on 'scale'.

3.4.2 Economic approach

The economic approach would encompass models focusing on complex trade patterns, craft specialization and administrative systems. Of course, all these elements are intertwined. Cities in these theories are perceived mainly as places producing goods or services that are not found anywhere else. This crafting capacity is due to the presence of highly skilled craftspeople and their self-reinforcing power through their interaction over time (Algaze 2005, 8). This would have to do with the concept of 'created landscape' used by Algaze.

To manage these goods and the raw materials involved in production, a certain level of at least secular if not religious administration is needed. As seen in Algaze's model of the Sumerian takeoff, Mesopotamia's first cities would have been important trading centres in long-term trading systems with resources coming from far away. Through this lens, we can explain the "why?" (economic differentiation), "where?" (in strategic location regarding trade and access to resources) and the "how?" (long-term process through self-reinforcing natural and created landscape) cities emerge. Consequently, this type of approach is important for this thesis because the elements involved in economic approaches seem to be characteristic of Mesopotamia's urbanism. Khirbet al-Fakhar was for instance an important hub for obsidian trading and production, as will be detailed later. For the economic

approach, one can look for evidence of trading, administrative organisation, specialisation, etc.

3.4.3 Geographical approach

The use of geographical theories in archaeology originates from works from classical German geographers such as Walter Christaller and his Central Place Theory (CPT), and others like Alfred H. Thiessen and his use of the Voronoi polygons. The aim of the CPT is to theorise and predict the distribution and size of human settlements within an urban system. To do so, it follows a premise that is similar in nature to that of the functional paradigm (i.e. that cities operate specific functions). The CPT uses the retailing of goods and services as the main urban function (Gregory *et al*. 2009, 76). In Christaller's model, there was a strong focus on the notion of distance between consumers, retailers, and products/services. His theory takes the form of a rational calculation of the optimal distances between economic actors. In broad terms, "retailers locate establishments to be as near their customers as possible and customers visit the nearest available centre." (Gregory *et al*. 2009, 76).

In a theoretical uniform environment, this model produced "a hexagonal network of central places housing the establishments, organized in a hierarchy" (Gregory *et al*. 2009, 76). The parameters of this hierarchy (i.e. number of levels) are dependent on the distance consumers are ready to travel to access a product and the minimum number of sales that's necessary for a settlement to be viable in a location. Each of those central places have a hinterland whose size and composition depend on the central place's position within the global hierarchy. The further from a city, the more its dominance fades "so there is an essential relationship between the size of a city and the size of the territory it controls" (Hansen 2008, 71). Christaller's rational model had a strong impact on the study of size and spacing of settlements and was translated, understandably given its strong potential for prediction, into the archaeological discipline.

Applied to archaeology, these tend to ground the study of urbanism in statistical correlations within urban systems. Its premise necessitates the existence of a hierarchy between settlements. In order to identify a city, one can use regional surveys in order to pinpoint settlements that are at the highest level of this hierarchy. Although very schematic, the basal assumption of these theories regarding the need for a hinterland to provide resources for cities and the central position of cities in a settlement system remains relevant. These premises are

indeed still perceivable in modern models. John Bintliff for instance states that "behind the enormous variety of habitats settled by human communities […], it has been proved possible to isolate a limited set of factors and processes which have had an extraordinary influence on the size, spacing, and socio-economic organization of rural communities" (Bintliff 1999, 541). He nonetheless calls for banishing determinism, towards a science able to render complexity (Bintliff 1999, 541-542)

Geographical features play a big role in the traditional model of Mesopotamian urbanism, as exemplified by the theory regarding southern urbanism detailed in chapter 2.1.1. Combined with economic models, the picture emerging is one of cities developing in optimal loci for trade, advantageous environments, and good resources access. The specificity of geographical approaches is the focus on the spatial relation between a city and its hinterland. The study of a settlement's environment, related settlements and global settlement hierarchy is what is implied here. Consequently, excavations usually encompass a survey of a settlement's surroundings. An urban site with a large population would necessitate to be integrated into a larger settlement system in order to sustain itself. Understanding this system is therefore central when tackling a possibly urban site. However, these theories mostly elucidate "the interplay between centripetal and centrifugal economic forces" (Algaze 2005, 7) rather than give a clear identification of cities within a system. These approaches are therefore ill-prepared to tackle the reasons why cities emerge in the first place. Additionally, the definition remains broad because not only cities "fulfil the requirement of performing numerous functions in relation to a broader hinterland" (Hansen 2008, 71).

3.4.4 Political/legal approach

The political/legal approach comprises methods that are hardly appliable in prehistory. It encompasses models focusing on how ancient societies conceptualized their settlement's statuses. Generally, this implies the study of the people's own terminology they use to designate their agglomerations. Marcus and Sabloff mention different examples of how we could use the ancients' terms and definitions instead of our owns in order to tackle urbanism. The Classic Maya for instance recorded "the names of both the capital cities and the polities administered by their rulers" (Marcus and Sabloff 2018, 22). In a historical context, it is essential to go through the study of the information these societies gave us regarding the way they themselves administered their settlements and the status

they gave them. For prehistory, assessments need to be made on the basis of the earliest textual data for a given society. If we can make parallels between a settlement for which we know the status and others dating from prehistory, one can assume that they might have been perceived quite similarly. In Mesopotamia, the importance of religion and the god as a city's patron, for instance, was quite persistent across time. This would hint that its roots can be found in prehistorical times.

3.4.5 Sociological approach

The sociological approach to urbanism would encompass studies that focus on the unique types of social organization and interaction taking place y in an urban context. This is for instance what Monica Smith defends in the introduction of her book "The social construction of ancient cities" (2003). She states that "a city represents a new social order, in which numerous different groups must coexist. The resultant social networks, economic activities, and political opportunities are concentrated in a locus of relatively dense population, where the process of daily life takes place as part of the physical landscape that forms and is formed by the negotiated consensus between groups" (Smith M.L. 2003, 1). Following her view, a city would be entirely shaped by the social interactions taking place within it. In her quote, we also get back to the role played by density.

Additionally, she uses the concept of 'social identity' stating that, by the creation of a new form of social organisation (i.e. the city), a new identity emerges as well (i.e. living or interacting with a city) to which we access, as archaeologists, through material culture (Smith M.L. 2003, 8). Her reflection leads her to assess that the city distinguishes itself from other types of settlement by transformations of three dimensions: leadership, spatial organisation and economic interactions (Smith M.L. 2003, 16). All three transform under the influence of new forms of social relations and mediations caused by a higher density of population.

This sociological dimension joins what Feinman designates with the term 'integration'. According to him, there are two integrative modes: "one based on dominance, hierarchy, and individualized ties (through kin, marriage, pairwise or reciprocal relations, etc.), and the other more reliant on consensus building, shared power, group cohesion, and broadly held values" (Feinman 2013, 47). Relating to urbanism and in regard to Feinman's tripartite model (i.e. complexity, scale and integration), a city would not necessarily only host unique social phenomena. Its distinction would be on the way these phenomena of integration are exacerbated

by high levels of complexity and scale and how, in return, modes of integration would reinforce these two variables in a self-reinforcing process. From an archaeological point of view, one can therefore focus on evidence for both modes of integration. Arguably, the one based on dominance, hierarchy and individualised ties is the most studied because it is the easiest one to detect (i.e. signs of social differentiation). Focusing on this mode is not necessarily an issue if the existence of the other one is not omitted.

3.5 Ancient urbanism in Mesopotamia

Guillermo Algaze's model of the Sumerian takeoff presented in the previous chapter is a holistic explanation as to why cities first emerged and, especially, endured in southern Mesopotamia. In this part, I will highlight theories more specifically on how Mesopotamian urbanism has been conceptualised in terms of organisation. This part is more concerned with southern Mesopotamia, which has been the initial focus of researchers when it comes down to studying urbanism. Given the cultural links between Upper and Lower Mesopotamia, I believe that urbanism models developed for southern Mesopotamia can be extended and tested for northern settlements as well.

3.5.1 Urban spaces, the role of the household as a basal unit, and the kinship-based society in Mesopotamia

The 'basal unit' is a structural concept that aims at defining the smallest analytical unit of organisation within a system (social, political, or economic) (see Ur 2014, 254). The basal unit is dynamic in that it can fluctuate depending for instance on scale (see Johnson 1982). Several authors have underlined the importance of the household as a basal social and conceptual unit for the formation of Mesopotamian social organization. In "The Mesopotamian urban experience" (2007), Elizabeth C. Stone focuses on southern Mesopotamia cities from the third to second millennia BC. In her paper, Stone studies Mesopotamian settlements from the point of view of houses and households. She suggests that "Mesopotamian households, and the neighborhoods or villages that they form, were the real building blocks of society" (Stone 2007, 231). Additionally, she argues that Mesopotamian residential districts, house ranges and plans varied very little across periods and regions (Stone 2007, 217). Plans of large, medium, and smaller houses were for instance very similar in Tell Asmar, Ur and Larsa across time and between the sites. Such

consistency through time and space would be the sign of "significant stability in Mesopotamian social relations" (Stone 2007, 218).

Textual data from second-millennium Sippar, Tell Sifr, Ur and Nippur regarding genealogies, economic fortunes and social relations of families allow to further our understanding of domestic districts (Stone 2007, 219). Mainly, these texts demonstrate that "urban residents […] were both independent and connected to the public sector" (Stone 2007, 219). Each domestic district seemed to have had their own dynamics, as one whole unit. Indeed, differences in terms of the nature of residents (clergy, entrepreneurial, small farmers, etc.) between residential sectors of a same settlements can be documented. According to Stone, instead of being studied as homogenous entities, these cities should then be seen as composed of "numerous small, face-to-face communities" (Stone 2007, 221). Additionally, combination of textual and archaeological evidence suggests "long, unbroken traditions of domestic life" (Stone 2007, 221) in Mesopotamia's urban centres. These traditions were of "strong neighborhoods development, high levels of social mobility, and the domestic context of officeholders, small farmers, and the like" (Stone 2007, 221). Sectors other than domestic also existed such as the religious sector or the residency of the rulers. Data from Mashkan-Sapir and Ur suggest that these various sectors were not solely symbolical. They were also materialized within settlements. Indeed, internal canals and walls seemed to have served as separations between sectors (Stone 2007, 225-226).

With the primacy of face-to-face relations, the household would have constituted the basal organisational unit in ancient Mesopotamia. Domestic districts were composed of multiple households which would be at the basis of villages, towns, or cities formation. Data also suggest that people were not afraid to move (Stone 2007, 228). The importance of the household could then, among other things, reside in the fact that the whole household would move in quest of the most suitable settlements. This would strengthen the cohesion within the unit while at the same time needing to stay in a detached position from overarching units if moving again was necessary. Monica Smith also mentions that households, neighbourhoods, and their significance in cities might reside in the fact that they are remnants of "preexisting village links" (M.L. Smith 2003, 21). With this in mind, the specificity of urban centres resided in their ability "to provide both a larger political arena and an efficient resource base that led to their popularity" (Stone 2007, 231) and attract smaller constitutive units (households, neighbourhoods, villages).

In a chapter dedicated to Southern Mesopotamia (2012), Jason Ur detailed "urban places on the alluvial plains of southern Mesopotamia at the time of their first appearance at the end of the 4th millennium BC" (Ur 2012, 533) up until the late 2nd millennium BC. Using the archaeological and written record, and landscape studies, Jason Ur aimed at characterizing southern Mesopotamia's urban centres across time. Similarly to what Stone observed, what comes out of Ur's analysis was the continuity of some core aspects of Mesopotamian settlements across time and space. Referring to J. David Schloen, he notably says that "the building blocks of cities at all times was the household, which was conceptually identical at the level of the family, the lineage, the city, or the kingdom" (Ur 2012, 552). Based on the terminology retrieved from textual evidence, Ur believes that the household and kinship ties were not simply building units of southern Mesopotamia's social organization. Their importance was also reflected in the way social ties were conceptualized at all levels (from household to global institutions). Notions used to define these ties were indeed "that of kinship, including father, son, brother, and especially master and servant" (Ur 2012, 552).

In this sense, the concept of the household and its components would have been the basis of ancient Mesopotamia's population's cosmology. Dimensions such as the complex administration seen developing in Mesopotamia or the emergence of an elite "can be better explained as large-scale patrimonialism and the metaphorical extension of kinship" (Ur 2012, 553). In this regard, the divisions in Mesopotamian cities seemed to have been more vertical than previously thought "corresponding to lineages and their affiliated households […], rather than a class-based horizontal structure" (Ur 2012, 553). Additionally, this model makes the emergence of inequality "as natural as the hierarchical relationship between a father and his sons" (Ur 2014, 262). Social practices would have been scalable.

3.6 Attributes approach to urbanism

In this section, I will present the list of attributes advocated by Michael Smith (2016), which constitutes a good synthesis of several approaches to urbanism. His method presents itself as a middle ground between post-processual guardrails regarding the complex nature of urbanism and the dangers of its essentialization, and processual approaches which tend to focus on lists of functions or characteristics in order to assess the urban nature of a site. He puts forward the two main approaches representative of these paradigms: city definitions and urban typologies (Smith 2016, 153). He advocates for an approach that combines the

two. Concerning definitions, Smith presents what he terms the demographic/sociological and functional approaches. Because he focuses on Aztec sites and European Iron Age sites, applying his method to Late Chalcolithic North Mesopotamia constitutes a novelty.

As mentioned earlier in 3.4.1, the demographic/sociological approach stems from Louis Wirth's classical definition of the city. Smith believes it is the most influential because it fits contemporary cities. But from an archaeological standpoint, it tends to exclude most ancient cities (Smith 2016, 154). That is why archaeologists such as Bruce Trigger have adopted a wider functional definition that encompasses the premises of the sociological one (Smith 2016, 155). The functional definition emphasizes the unique functions performed by a city within a hinterland, in opposition to non-city settlements. The advantage of this definition is that it stays very general and can therefore be used as a basis for different focuses. Smith notably mentions economic, political, or religious impacts and functions of cities (Smith 2016, 154). But the issue with definitions is that they are limiting in essence. Theis use must consider these limits.

On the other hand, archaeologists have also used typologies to approach urbanism. Once again, Smith distinguishes two kinds of typologies: comprehensive and targeted ones. Both can be "unidimensional (a list of nominal categories) and two-dimensional (types are the cells in a two-dimensional cross-classification table)" (Smith 2016, 157). Comprehensive typologies are wide ranging so that any city can be encompassed into it. Targeted ones aim at highlighting a specific theme. Charles Tilly focused for instance on the "relationship between political coercion and capital accumulation" (Smith 2016, 158) in European cities after 1000 AD (fig. 11). Therefore, as Smith states, typologies can be used to highlight specific

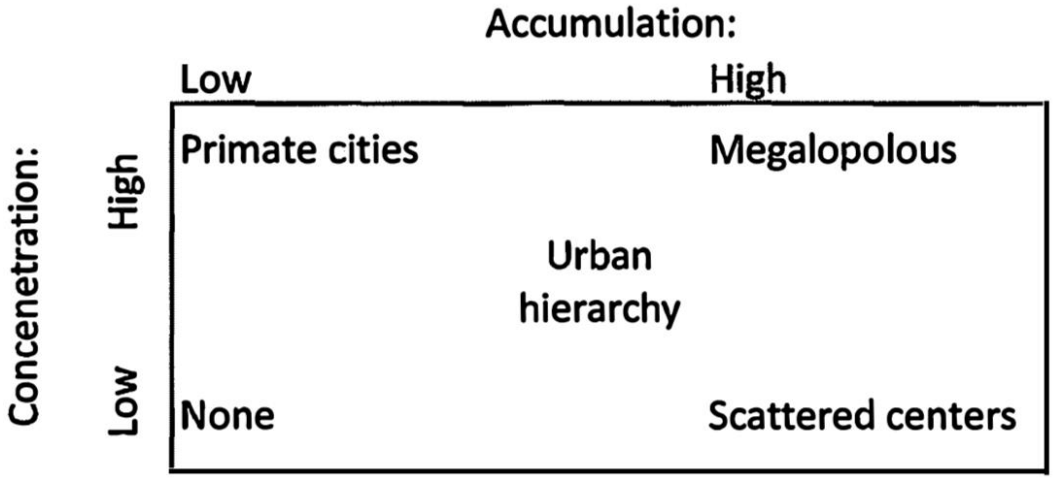


Figure 11 Example of Charles Tilly's targeted typology (Smith M.E. 2016, 157, fig. 10.3)

issues by classifying the data available. They are heuristic tools for analysis by narrowing the "scope of empirical investigations" (Smith 2016, 153), but do not aim at identifying or precisely describing cities in the past (Smith 2016, 158).

To compensate issues of both approaches, Michael Smith advocates for a third, attributes-based one. In opposition to the monothetic nature of definitions and typologies, this one is polythetic in that "settlements are evaluated on a series of attributes, but 'urban' settlements can have varying combinations of those attributes" (Smith 2016, 158). There is no direct equation between the urban attributes and the status of 'urban' or 'city' (Smith 2016, 159). None of the traits presented are 'necessary' in essence in that they must not be "present in every case of urbanism" (Smith 2016, 159). Additionally, "there is no absolute quantitative criterion for urbanism (e.g. any site with twelve of the traits can be called a city)" (Smith 2016, 159). Admittedly, this approach does not allow to establish a clear definition of urbanism. But in a comparative framework it allows to analyse "the nature and scale of urbanism" (Smith 2016, 166). Additionally, the attributes chosen by Smith originates from various studies on urbanism which used different definitions. Defining elements are therefore still a part of his approach.

In the list Michael Smith established, he listed four sub-categories: settlement size, social impact, built environment and social and economic features. I chose to modify this categorization and to create sub-groups that I believe are more coherent. The sub-categories I designed are based on the different approaches detailed earlier in this chapter (i.e. demographic, economic, geographical and sociological). The political/legal approach is not relevant in a prehistoric context therefore it will not be assessed here. The attributes and sub-groups chosen will aim at putting emphasis on what is believed to have been essential in the development of Mesopotamian cities in particular. In the following sections, I will present the different sub-categories and the attributes composing them. At the end of the chapter, a table summarises all the attributes and categories presented (tab. 2).

3.6.1 Demographic attributes, and the archaeological issue of 'megasites'

This category of attributes stems from the classical sociological definition, as called as such by Michael Smith. As it has been demonstrated with functional approaches, focusing on sheer size leads us to missing other variables which are sometimes more relevant in the study of urbanism. Even with the issues related to such a definition already expressed, the population, size and density of a site are

of course still relevant. The arguments against essentializing a settlement's urban nature based solely on the quantification of its dimensions do not exclude the pertinence of these parameters. Rather than the irrelevance of size, what needs to be assessed is actually what more it can tell us if asked the right questions and combined with other factors.

Following on the discussion regarding the importance of size in archaeology from chapter 3.4.1, the notion of 'megasites' symbolises quite accurately this issue. The concept can also act as a useful heuristic tool to tackle this complicated phenomenon. In many parts of the world and for different periods, anomalously large sites comparatively to their spatio-temporal context often occur. As a premise and on the sole basis of their size, these can be referred to in archaeology as 'megasites'. The term allows to avoid using more controversial ones such as 'cities' or 'proto-urban' when beginning to tackle a site because it only encompasses the fact that they are "anomalously large" (Hole 2004, 194). For Near Eastern Neolithic, Alan Simmons for example categorizes a site as being a megasite if it exceeds 20ha (Simmons 2007, 175). Such sites usually represent challenges for archaeologists' assumptions. Their exceptional size is generally understood as resulting from them being regional centers (political, economic, or religious) or being located in advantageous conditions (Hole 2004, 194). Megasites' life span is also usually brief (a couple hundred years) (Ur 2020, 46).

Frank Hole's work on Near Eastern Late PPNB megasites (2000) demonstrated that preconceptions surrounding settlements categorisation based solely on size can be challenged. Hole used counter-examples to show that using size to categorise sites on a scale of complexity is not necessarily representative of the data. He demonstrated that both smaller settlements (e.g. Bouqras, Cayönü, Nevali Cori or Beidha) and larger ones (e.g. Abu Hureyra or 'Ain Ghazal) actually display a whole range of different architectures (Hole 2000, 206). Some small sites possess special structures, such as the wide variety of architectures demonstrated in Cayönü (Hole 2000, 199). On the other hand, there are larger sites like Abu Hureyra and its 11.5 ha whose architecture show no evidence of other-than-domestic functions. Such a phenomenon can partly be explained by the challenges to establishing contemporaneity detailed earlier.

With that in mind, it is still relevant to put forward quantitative elements concerning the sites studied. Here, Smith's attributes will be used almost unchanged. They are as follow: population estimates, size (ha) and built-up area (ha). The distinction between the whole size of the site and the built-up area allows to better estimate

the density of the settlement. It is also useful in order to better assess the way the site was organized and distinguish between types of contemporary occupations. This distinction has proven important as demonstrated by Peter Akkermans in his understanding of Tell Sabi Abyad's occupation. They are the only attributes of the whole that are purely quantitative. However, they can be used as proxies to infer certain elements of a qualitative nature. They also allow to visualize the scale in which social dynamics took place in the sites.

3.6.2 Economic attributes

In his attributes, Michael Smith puts forward several elements relating to an economic approach to urbanism. These are notably the scale measurement of craft production, markets or shops, and imports (Smith 2016, 160-161). In my list, these will be the attributes I will be using to assess the economic nature of the sites. More precisely, on the premise that cities are places where one can access goods and services not found anywhere else (to a certain extent), the scale of production and of specialization of craft will first be determined. Secondly, based on economic theories regarding urbanism within Mesopotamia (symbolized by Algaze's model), the scale of long distance trade will also be assessed. Finally, in the context of near eastern urbanism, determining the amount of administrative organization within the site is also important in order to measure the importance of economic activities. This is why the presence of administrative and storage facilities and the centralisation of seals and sealings will be assessed.

3.6.3 Geographical attributes

Geographical elements represented the main dimension that was missing in Michael Smith's model. This was even more lacking in the context of the present paper given that the geographical approach has a long tradition in near eastern archaeology. Indeed, regional surveys have been one of the main tools used in the area (Ur 2010, 1). Both Tell Brak and Tell Hamoukar's surrounding region have been surveyed. Additionally, the Upper Khabur in general has been covered quite well. Therefore, there is data available in order to assess the evolution through time of the settlement system within the sites' hinterland. This will allow to perceive the regional dynamics of both sites. With the help of geographical models such as the Central Place Theory, we can hypothesize on the existence of a possible settlement hierarchy and the place occupied by Brak, Khirbet al-Fakhar and

Hamoukar within these. The presence of a multi-tiered settlement system would be a good indicator of the urban nature of our sites.

3.6.4 Sociological attributes

The sociological attributes will concern data that would point to the existence of social relations and interactions not found in other types of settlements. Given that the sites we study were large in scale at first glance, the logic would be that they had to develop complex integrative modes in order to maintain cohesion. Because of the limitation of this thesis, I will here focus on the modes of integration focused on dominance, hierarchy, and individualized ties (Feinman 2013, 47). These are the easiest ones to observe archaeologically because they are usually accessible in material culture, architecture, and burials. Additionally, given the way urbanism has been conceptualised by researchers in Mesopotamia, it seems that these modes are prevalent in near eastern urban contexts.

Consequently, traces of social differentiation will be looked for in burials, domestic architecture and artefacts (e.g. luxury goods). Additionally, the presence of monumental architecture of any nature (i.e. political, religious, economic or domestic) will be assessed. Finally, city walls are often encompassed in models tackling urbanism. Their presence is subject to a high variability depending on the region studied (Smith M.E. 2016, 160). But for northern Mesopotamian urbanism, fortifications are quite relevant (Ur 2020, 52). Additionally, city walls often represent large scale work that which implies a certain level of social organisation to oversee.

ATTRIBUTE	TYPE OF VARIABLE
Demographic	
population estimates	M
size (ha)	M
built up area (ha)	M
Economic	
craft specialization	P/A
long distance trade	P/A
administrative organization	P/A
Geographical	
place within a differentiated settlement system	P/A
Sociological	
differentiation in burials	P/A
differentiation in houses (ditto)	P/A
differentiation in artefacts	P/A
presence of palatial or temple structures and/or monumental secular architecture	P/A
city wall	P/A

Table 2 Archaeological urban attributes based on Michael Smith (2016). Type of variable: M=quantitative measurement and P/A=presence/absence

4. Presentation of the data

This part is dedicated to presenting the data from each site that is relevant to the topic of urbanism based on the attributes exposed earlier. As mentioned by Jason Ur in his report of 1999-2001 excavations at Tell Hamoukar, "near eastern archaeology has embraced two spatial/geographic realities: no ancient settlement can be understood in isolation from its hinterland, and no site can be fully understood from a few excavation trenches" (Ur 2010, 1). That is why the available data for near eastern sites is often a mix of regional surveys and on-site excavations. A cross-site chronology is present in this chapter (tab. 3).

4.1 Tell Brak

Tell Brak was first excavated by archaeologists in 1937-1938 under the supervision of Max Mallowan. Precedingly, he had surveyed the Khabur region in 1934 (McMahon 2013, 67). After some time, the site was once again researched from 1976 by David and Joan Oates. Since then, the site has been regularly excavated and has known different Field Directors. Since 2006, Augusta McMahon is the current Field Director (McMahon 2013, 68). Her directorship has been focusing on

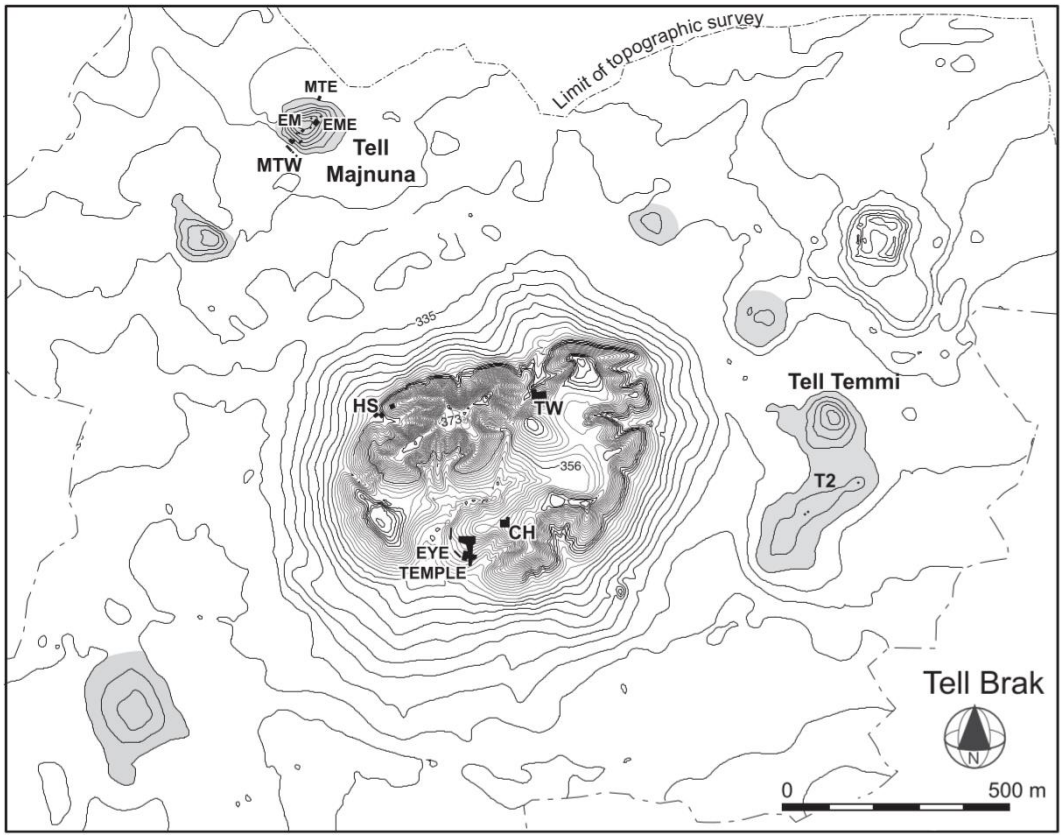


Figure 12 Topographic map of Tell Brak with sub-mounds (shaded) and LC excavations (McMahon 2016, 170, fig. 1)

<table>
<tr><th>Absolute dates (approximate Cal years BC)</th><th>Tell Brak</th><th colspan="2">Tell Hamoukar Survey</th><th>Southern alluvium</th><th>Northern Mesopotamia</th><th>LC & EJ chronology</th></tr>
<tr><td>6500-5900</td><td>A</td><td colspan="2">Period 1</td><td></td><td>Proto-Hassuna/Pre-Halaf (Samarra-related)</td><td></td></tr>
<tr><td>5900-5200</td><td>B</td><td colspan="2">Period 2</td><td>Early Ubaid</td><td>Halaf</td><td></td></tr>
<tr><td>5200-4400</td><td>C</td><td colspan="2">Period 3</td><td>Late Ubaid</td><td>Northern Ubaid</td><td></td></tr>
<tr><td>4400-4200</td><td>D</td><td colspan="2" rowspan="2">Period 4</td><td>Terminal Ubaid</td><td>Terminal Ubaid</td><td>LC1</td></tr>
<tr><td>4200-3900</td><td>E</td><td>Early Uruk</td><td>Northern Early Uruk</td><td>LC2</td></tr>
<tr><td>3900-3600</td><td rowspan="2">F</td><td rowspan="3">Period 5b</td><td></td><td rowspan="2">Middle Uruk</td><td>Northern Middle Uruk</td><td>LC3</td></tr>
<tr><td>3600-3200</td><td rowspan="2">Period 5a</td><td></td><td>LC4</td></tr>
<tr><td>3200-3000</td><td>G</td><td>Late Uruk</td><td>Late Uruk</td><td>LC5</td></tr>
<tr><td>3000-2900</td><td>H</td><td colspan="2" rowspan="3">Period 6</td><td>Jemdet Nasr, ED I through early III</td><td>Post-Uruk</td><td>EJ 0</td></tr>
<tr><td>2900-2600</td><td>J</td><td rowspan="2">Ninevite 5</td><td>EJ I</td></tr>
<tr><td>2600-2400</td><td>K</td><td>Early Dynastic IIIa</td><td>EJ II</td></tr>
</table>

Table 3 Periodization in Tell Brak and Tell Hamoukar in relation to other chronological schemes (abbreviated chronology from Ur et al. 2011, tab. 1, 5). LC=Late Chalcolithic and EJ=Early Jazira

leading research regarding socio-economic and environmental changes in the fifth through second millennia BC. Notably, the site's early evidence for urbanism in the fifth and fourth millennia BC, first assessed by Geoff Emberling in 1998, has been one of the main focus (McMahon 2013, 67-68).

4.1.1 Site's layout

Tell Brak's main mound is one of the largest (50 ha) and tallest (40 m and 15-20 m during 4th millennium BC) in northern Mesopotamia (McMahon 2019, 16). It occupies a central position and it is the biggest mound of the site. Around the main mound, an unmounded area of settlement surrounded by a corona of sub-mounds (250-400m from the centre) are also included in what McMahon calls the "urban landscape" (McMahon 2013, 70) of Tell Brak. The sub-mounds and the less dense area together form the "outer town" (McMahon 2019, 16). Occupation in the outer town began during the LC2. These early occupations correspond to the sub-mounds. The site's size at that time is estimated to 55 ha "of discontinuous settlement, including the central mound and these outer-town scatters" (McMahon 2019, 17). By the LC3, the outer town got denser from north to southeast and new substantial occupations formed on the south and southwest. At that time, the central mound reached 55ha, several sub-mounds reached 1-4ha and the area of low-density between the central area and the ring of sub-mounds got bigger. These three components reached a total of ca. 130ha (McMahon 2019, 17). This corresponds to the maximal extent of the site (Wright *et al.* 2007, 10). The site started contracting during the LC4, notably with the abandonment of the outer town.

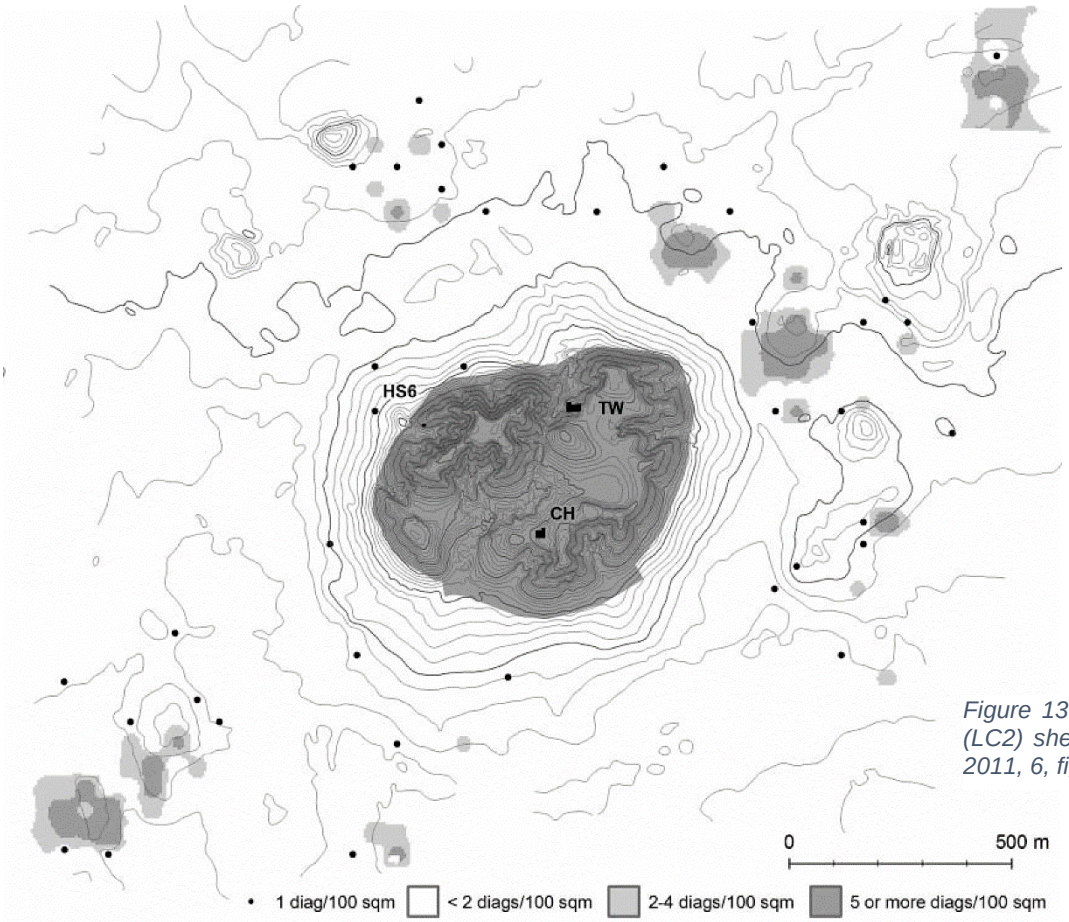


Figure 13 Tell Brak's Phase E (LC2) sherd scatters (Ur et al. 2011, 6, fig. 2)

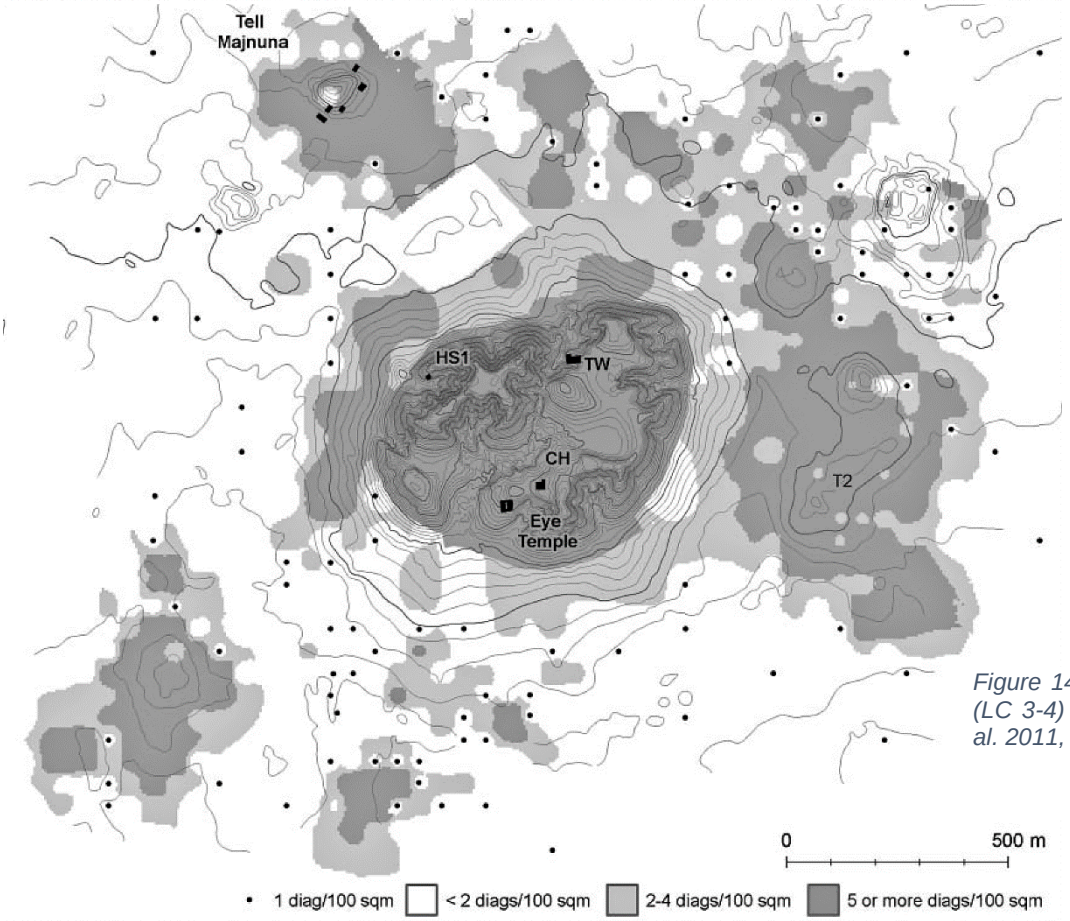


Figure 14 Tell Brak's Phase F (LC 3-4) sherd scatters (Ur et al. 2011, 7, fig. 3)

4.1.2 Urban elements

In Tell Brak, researchers believe that there are at least Ubaid levels (5th to 6th millennia) in the High Mound but they haven't been excavated yet (Ur 2014, 52). However, they recognized that its initial expansion corresponded to the LC2 (4200-3900 BC; Northern Early Uruk), which is termed Phase E (fig. 13) at the site (Ur *et al.* 2011, 4-5; McMahon and Crawford 2014, 52). At that time, the entire main mound was in use and the satellite mounds already existed. This amounted to a total of circa 55 ha occupied. The second expansion which began in the LC3 and covers the beginning of the LC4 is called Phase F (fig. 14) (ca. 3900-3400 BC; Northern Middle Uruk; Ur *et al.* 2011, 6-8). The site reached its maximal extent at that time. The following period when contraction begins and the first evidence for southern material culture appear corresponds to the late Phase F and Phase G (Ur *et al.* 2011, 8-9). This phase extends over the end of the LC4 to the end of the LC5 (ca. 3400- 3000 BC; Late Uruk; Southern Uruk)

Area TW, close to the northern entrance of the ancient city, bears some of the most relevant evidence regarding early urbanism for LC2-LC3 periods in Tell Brak. The location next to a city gate already gives it a public orientation (McMahon *et al.* 2007, 148). The area was first discovered in 1997 and was further excavated in 2004, 2006-2008 and 2011 (Al Quntar and Abu Jayyab 2014, 89). The earliest level found there is Level 21 which corresponds to the early LC2. It is composed of a workshop area with large ovens, small rooms and bins that point out to a large scale food production. Additionally, lithic tools, beads and ornaments were also produced here. Finally, a pottery kiln with an associated structure (a chamber and plastered surface) indicate that the area was already substantially occupied at the time (Al Quntar and Abu Jayyab 2014, 90).

In Level 20 (late LC2), a substantial public building was erected. Usually termed the Basal Threshold Building (BTB), it was raised on a platform of cobbles and clay and had thick 1,85 m wide walls. It takes its name from its main doorway which is composed of a massive basalt threshold. Basalt is not a stone that is native to the steppes in which Tell Brak is located (Oates *et al.* 2007, 588). Importing and placing such a large object would have necessitated a high level of organization and coordination. In front of this entrance was timber under-flooring covered with plaster opening a paved courtyard. The entrance to this building was therefore built with care. The building went through at least three sub-phases in Level 20 during which it was maintained and aggrandized (Al Quntar and Abu Jayyab 2014, 90). Unfortunately, no objects were found there, all rooms were empty.

Figure 15 Plan of Tell Brak's Area TW Level 20 and 19 (McMahon and Oates 2007, 150, fig.4-5)

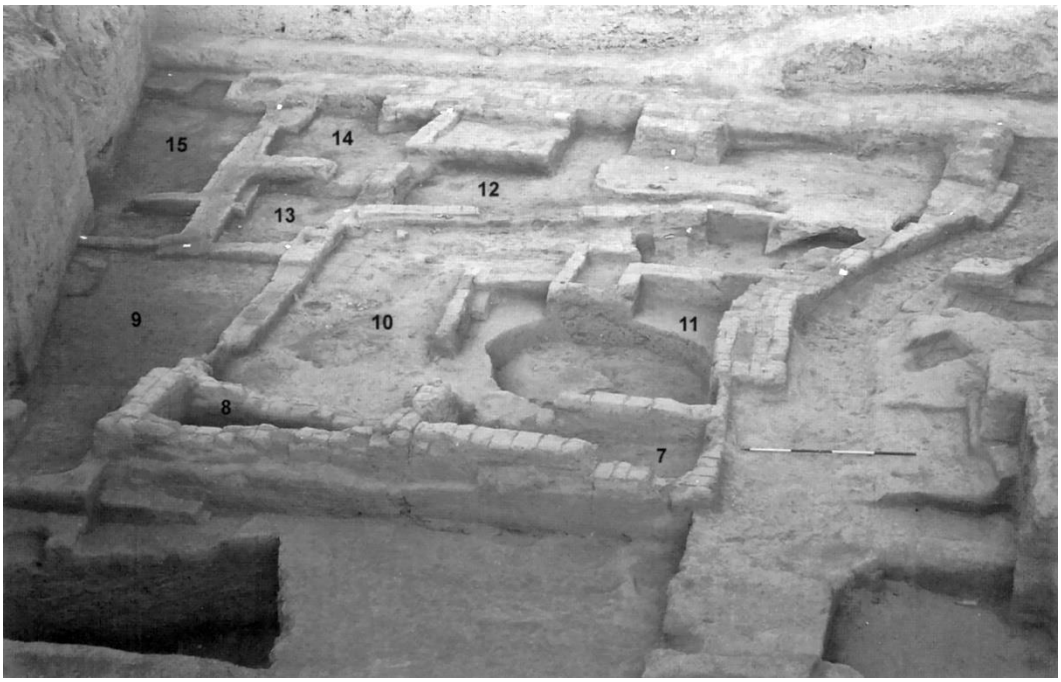


Figure 16 Area TW Level 20 (McMahon and Oates 2007, 152, fig. 7)

To the west of the BTB there was an industrial complex encompassing a multi-room structure named the “Green Building” (GB) and an outdoor area. This zone also went through sub-phases as it was modified and adapted. There, people were producing beads, inlay, lithic tools and pottery (Al Quntar and Abu Jayyab 2014, 90). Raw materials found there indicate that luxury goods were manufactured as part of the production. This points out to the existence of an elite who would have generated the demand for such goods. Finally, between the BTB and GB was a pottery production zone with a kiln. BTB and GB’s sub-phases seem to correlate and Al Quntar and Abu Jayyab postulate that the BTB might have played an administrative role in relation to the industrial area (Al Quntar and Abu Jayyab 2014, 91).

The main feature of Level 19 (LC2-3; Al Quntar and Abu Jayyab 2014, 89) was a structure named the “Red Building” (RB; fig. 17) situated at the same location as the GB. Four rooms have been found but the entrance is still missing. Its walls were massive and were made of red mud bricks, giving its name to the building. It had four large rooms containing various ovens (some over 2m wide), seal impressions and raw materials such as stones and shells (McMahon and Oates 2007, 151). Most of the materials came from considerable distances. Additionally, their nature and treatment seem to indicate their use for the production of luxury goods. A unique chalice made of marble and an obsidian core was also found in this building. Evidence for textile production also points to the importance of wool for the local economy (McMahon and Oates 2007, 151). Finally, over fifty so-called

'sling bullets' were found in the corner of Room 1 which certainly served as raw material to make sealings. All in all, the building seems to have been mainly a production centre for various economies. The BTB also kept being in use for a part of Level 19.

Figure 17 Tell Brak's Area TW, the Red Building in Level 19 (Al Quntar and Abu Jayyab 2014, 92, fig. 6.5)

In Level 18a (early LC3; ca. 3900-3600 BC) was a unique building with a tripartite architecture. North of it, a courtyard contained numerous ovens. The area also contained many mass-produced ceramic forms, some associated with feasting practices. It has been interpreted either as a 'feasting hall', as a guesthouse, or at least as a service building linked to a nearby institution (Oates *et al.* 2007, 596). Going back to Level 21 several rich infant burials were also found there. These will be detailed in chapter 5.4.1.

Other LC evidence are found in Area CH and in trench HS6. Area CH (300m south from TW) also contained evidence for monumental architecture dating as early as the LC1 (4400-4200 BC). A monumental wall was found which had a long history of use (Oates *et al.* 2007, 596). It was in this area that the 'Eye Temple' was found. In an early-fourth-millennium version of this structure were thousands of small 'eye idols', stone stamp amulets and sculptures (Oates *et al.* 2007, 596). Finally, trench HS6 also bore traces of a monumental wall (fig. 18) (Matthews 2003, 29-31).

Figure 18 Large 'boundary wall' from trench HS6 (Matthews 2003, 30, fig. 3.9)

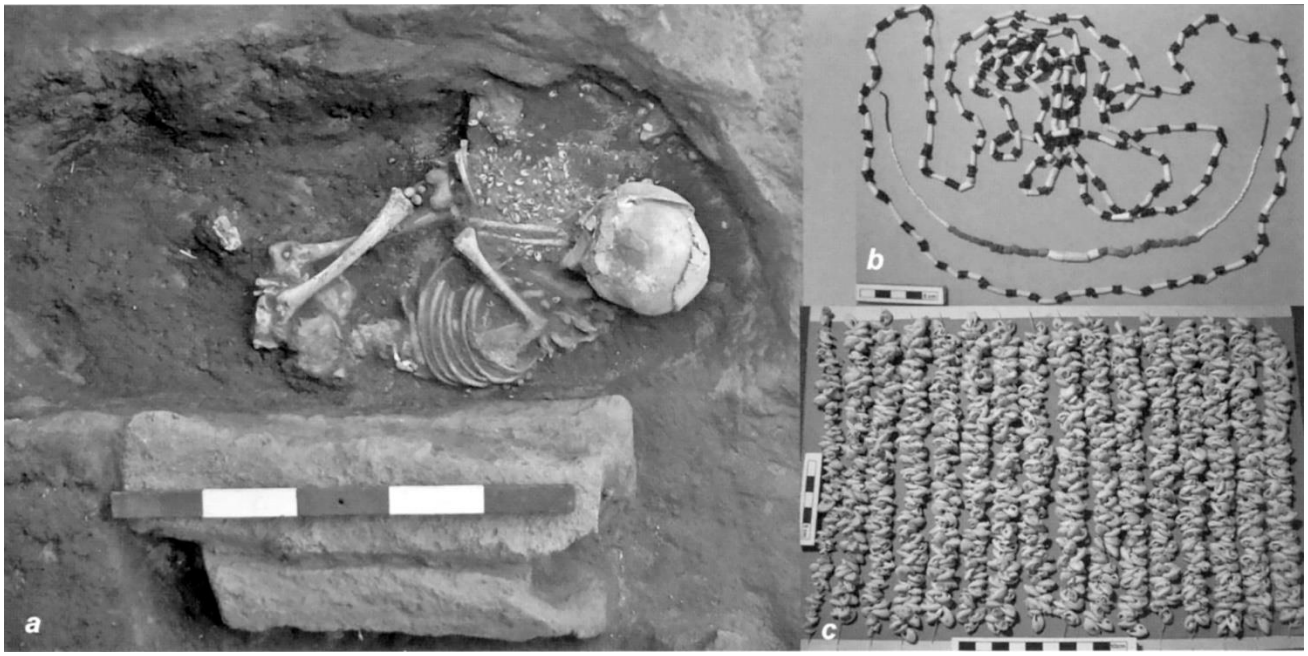


Figure 19 Rich infant burials from Area TW Level 21. a) burial in situ b) reconstructed shell and obsidian bead necklaces c) reconstructed shell bead strings (McMahon and Oates 2007, 155, fig. 9)

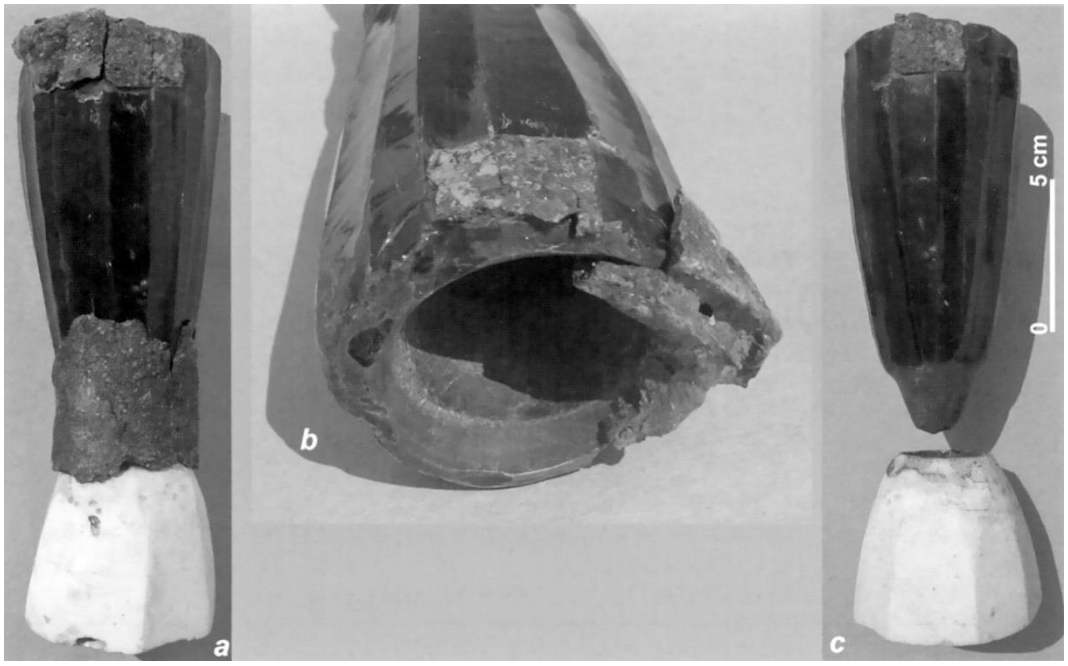


Figure 20 Unique obsidian and marble chalice from Tell Brak's Area TW Level 19. a) partially restored b) close-up of rim and interior c) cup and base before restoration (McMahon and Oates 2007, 152, fig. 6)

4.1.3 The Tell Brak Sustaining Area Survey

During seasons 2002 and 2003, a survey directed by Henry Wright with a radius of 7km to the south and east and 15 to the north and west was carried out. This amounts to ca. 500km2. The definitive results of further seasons and analysis are still in press but a preliminary report was published in 2007. As indicated in its name, the focus of the survey was on the sustaining area of Tell Brak (Wright *et al.* 2007, 8-9). It aimed at identifying both multi-component and small single-period sites but also relevant landscape features. The end goal was mainly to have a diachronic understanding of the settlements patterns in Tell Brak's sustaining area in order to better understand the relation between the site and its hinterland. In order to be able to compare results with other Khabur surveys, its methodology followed similar principles. The relevant results for Late Chalcolithic periods are presented in the analysis of this thesis.

4.2 Tell Hamoukar/Khirbet al-Fakhar

Tell Hamoukar has been visited by archaeologists since the 1930's and has been most noted for its large spread of Uruk sherds. After the discovery of Uruk colonies in northern Mesopotamia, such as Habuba Kabira and Jebel Aruda, the curiosity for Tell Hamoukar grew. Since 1998, the site has been excavated by the Oriental Institute of Chicago in a Syrian-American Joint Expedition (Ur 2010, XXI). It is

currently under the co-direction of Dr. Clemens Reichel and Dr. Salam al-Quntar. A volume detailing the regional and on-site survey carried out between 1999 and 2001 came out in 2010 and was edited by Jason A. Ur. Details of following expeditions are accessible through various papers or in the annual reports written by McGuire Gibson and Clemens Reichel. Due to Syria's difficult political current situation, the site has not been excavated since 2010. In addition to general difficulties in the whole country, Tell Hamoukar's archaeological site is especially at risk since a modern village has been developing on the main mound for decades. Given the weakened state control in the region, illegal works have also been taking place on the site, irremediably damaging parts of it.

The first three seasons, between 1991 and 2001, focused on estimating Hamoukar's extent to assess its demography, understand the site's position within the Uruk Expansion in the 4th millennium through the analysis of its ceramic assemblage, and study issues of landscape and subsistence in the context of early northern urbanism (Ur 2010, 2). That latter issue was assessed mainly through the study of hollow ways and density of field scatters to determine agriculture areas. Excavations were then halted for a while because of the Iraq war and resumed in 2005 until 2008. The excavations between 2005 and 2008 were centered around the questions of demography, permanence of occupation and means of economic subsistence by focusing on Khirbet al-Fakhar, the southern extension of Tell Hamoukar's main mound which was identified during the preceding season through survey and excavation (Al Quntar *et al.* 2011, 153). These excavations focused on the central mound of the extension and four trenches were dug. There then was a hiatus in 2009 but new excavations took place in 2010. This was the last year the site could be researched because of reasons mentioned earlier.

The data available for Hamoukar is composed of various complementary methodological approaches which reflect the way near eastern archaeology has been practiced in recent decades. The first dimension was one of the main focus of the 1999-2001 excavation with the creation of the Tell Hamoukar Survey (THS). The regional survey aimed at presenting a good understanding of Hamoukar's hinterland in which the excavations themselves and a "systematic surface collection of the site" (Ur 2010, 1) could be integrated into. These three dimensions (regional survey, surface collection of the site, and excavations) give a good comprehensive approach to Hamoukar and the settlement patterns surrounding it.

4.2.1 Site's layout

Hamoukar's highest mound is 15ha and peaks at 18m above the plain (Ur 2010, 20). It follows the same common patterns of mound erosion as others in northern Mesopotamia, such as Tell Brak. The northern slopes face the prevailing wind. The southern slopes get oblique wind and rain, increasing decline and redepositing material at the base. Some characteristics differ from other mounds though. It has a peak rather than being flat. This is the result of its settlement history after the 4th millennium as only this part was occupied. The high mound is completed by a lower town. Together they measure 105ha (fig. 21). One peculiar feature is the fact that Hamoukar's mound has a peak at its northeastern corner. Ur believes it is a result of its occupation history after the fourth millennium BC because only this part of the site was occupied (Ur 2010, 20).

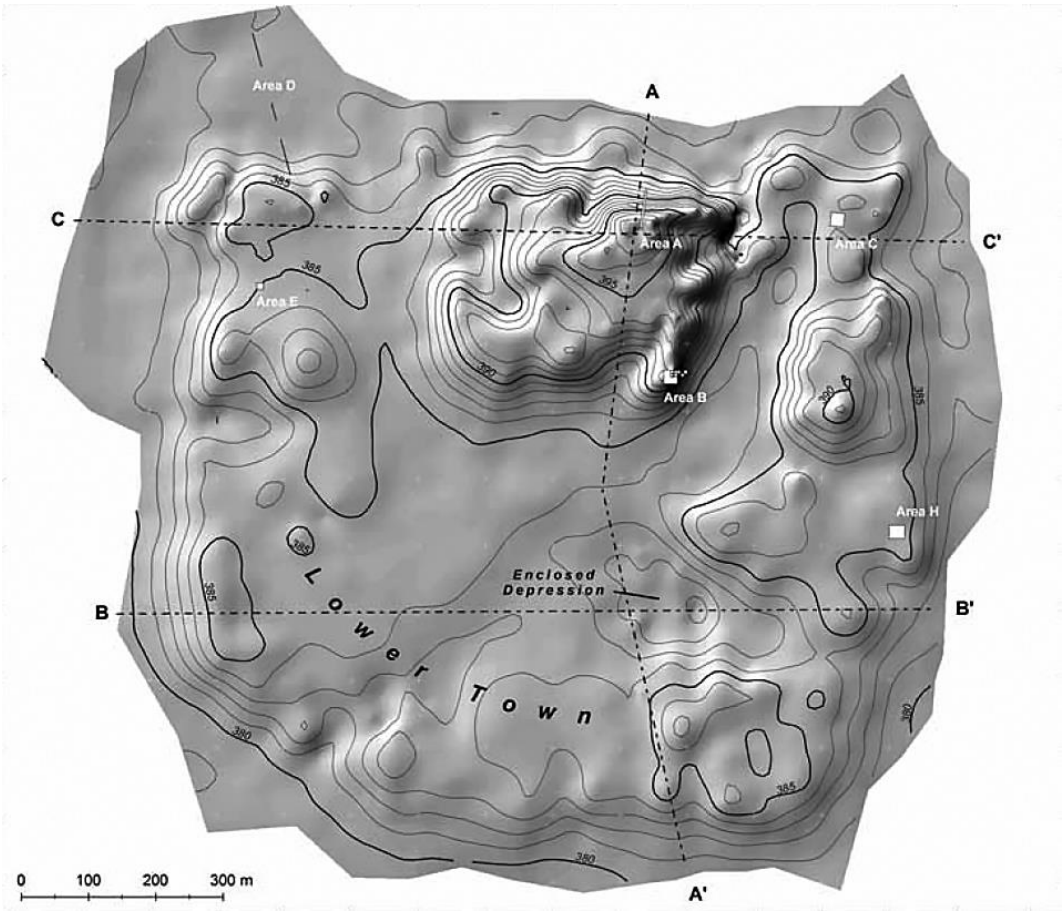


Figure 21 Map of Hamoukar's main mound and its Early Bronze Age Outer Town (Ur 2010, 22, fig. 3.3)

The fact that the main mound is so tall makes it so that many different periods are superimposed. Consequently, basal levels have been hardly reached and the oldest period explored in detail on the main mound is the LC3. To explore older

periods, attention has to be shifted to Hamoukar's southern extension, Khirbet al-Fakhar (fig. 22). The latter has been excavated mainly during the 2005-2008 seasons but was identified earlier with the THS given the high density of sherds found in the area. Khirbet al-Fakhar has a central area with several mounds extending over 31.3 ha. This central area is surrounded by a non-mounded area. The non-mounded area has been heavily cultivated, which seems "to have obliterated any internal topography that may have existed" (Ur 2010, 53). The whole site (both mounded and non-mounded zones) is dated mainly to the early Late Chalcolithic (LC 1-2) (Wilkinson 2002, 101; Ur 2010, 53) and together extend over 300 ha (Al Quntar *et al*. 2011, 166). Due to the very large size of this sherds scatter (ca. 300 ha), more excavations would need to be done to draw some solid conclusions on its nature.

Figure 22 Map of Khirbet al-Fakhar with central mounded area sketched, soundings and excavated areas (Al Quntar, Khalidi and Ur 2011, 154, fig. 2)

When tackling Khirbet al-Fakhar's data, it is important to remind oneself that not the entirety of the 300 ha of the site were homogenously occupied. Al Quntar *et al.* indeed note that "it would be misleading […] to compare the entirety of Khirbet al-Fakhar directly with densely settled towns like Tepe Gawra" (Al Quntar *et al.* 2011, 168). Regarding this issue, the study of declassified CORONA (the United States' first spy satellite program) photographs from the 60's helped researchers determine the true form of the site's layout before it was deeply modified by modern ploughing. These showed for instance that the density in the now-non-mounded area was variable. Indeed, some areas appeared light, alternating with darker ones (fig. 23). We know from other sites that these light areas must have corresponded to low or unmounded archaeological remains. This means that "the outer area originally contained low density or intermittent occupation" (Al Quntar *et al.* 2011, 167) such as seen on figure 23. According to Ur, the central area of ca. 30 ha might have been composed of closely space mudbrick structures. The greyish areas in the outer zone must have held similar structures and were separated by possibly unsettled (or only seasonally) areas (Ur 2010, 147-148). Still, the area covered by the central mounded area and the areas of

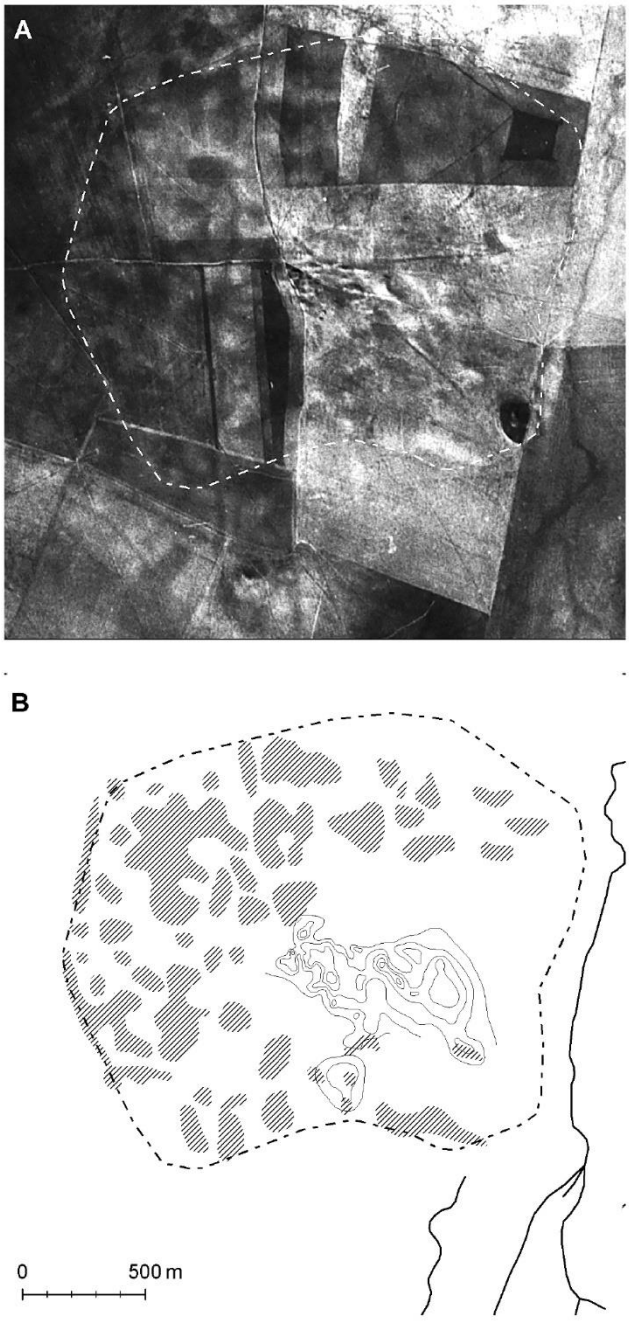


Figure 23 Outer settlement at Khirbet al-Fakhar. A) CORONA satellite photograph with mottled outer town B) Interpretation of CORONA image with mottled areas indicated by hatching, and sketch contours for central mounded area (Al Quntar, Khalidi and Ur 2011, 168, fig. 14)

lighter soils (77 ha) amounted to 108 ha. Even though this is far from the first estimates of 300 ha it still marks a clear distinction with the average size of contemporary sites (Al Quntar *et al.* 2011, 168).

4.2.2 Khirbet al-Fakhar

In 2000, Tony Wilkinson and his team focused on the non-mounded area in which they did nine sounding (Z1-Z7 and Z9-Z10) into this zone whose limits were identified by and was a focus of the THS (Ur 2010, 53). Only shallow deposit and poorly-preserved architecture was found at the time (Al Quntar *et al.* 2011, 153). But the quantification of sherd scatters and other materials (e.g. obsidian) already allowed them to make some assumptions on the nature of the site. On the other hand, the 2005-2008 excavations focused on the central mounds and four trenches were dug (ZI, ZM, ZD1/2 and ZD3/4).

Area ZI seemed to have been a dump area during the LC 1-2 periods. The zone was heavily disturbed by modern agriculture, so that Ubaid deposits were found directly below the surface (Al Quntar *et al*. 2011, 153). To the north-west, Area ZM bore features from a LC level that suggested a domestic context, such as an oven, a bin, and a subterranean storage pit. The latter was sealed by a basalt capstone and contained many obsidian cores and flakes. Surfaces were paved with sherds and obsidian blades and cores. One of these pavings was surrounded by a curved brick-wide wall. This domestic context seemed to have been associated with an obsidian workshop, given the large amount of obsidian cores, debitages and waste found (the largest amount from all areas excavated) (Al Quntar *et al*. 2011, 153-154). Additionally, hut symbols of the closed-eye type and of the wide-open eyes type, and sealings were found. One of the sealing found there bore the impression of one seal found in Area ZD.

On the eastern part of the central mounded area are Areas ZD1/2 and ZD3/4. The former did not have any architectural remains, but it had signs of possible ephemeral structures such as lines of pottery sherds and baked brick fragments (Al Quntar *et al*. 2011, 154). Among other elements (i.e. pots, numerous hut symbols), a large mortar with its pestle still in it was also found. On the other hand, Area ZD3/4 is the zone that is the most detailed by Al Quntar, Khalidi and Ur in their paper (2011) as it produced the most complex remains. It had three levels of LC occupation (1, 2 and 3) which were under Parthian levels. A fourth level (4) is

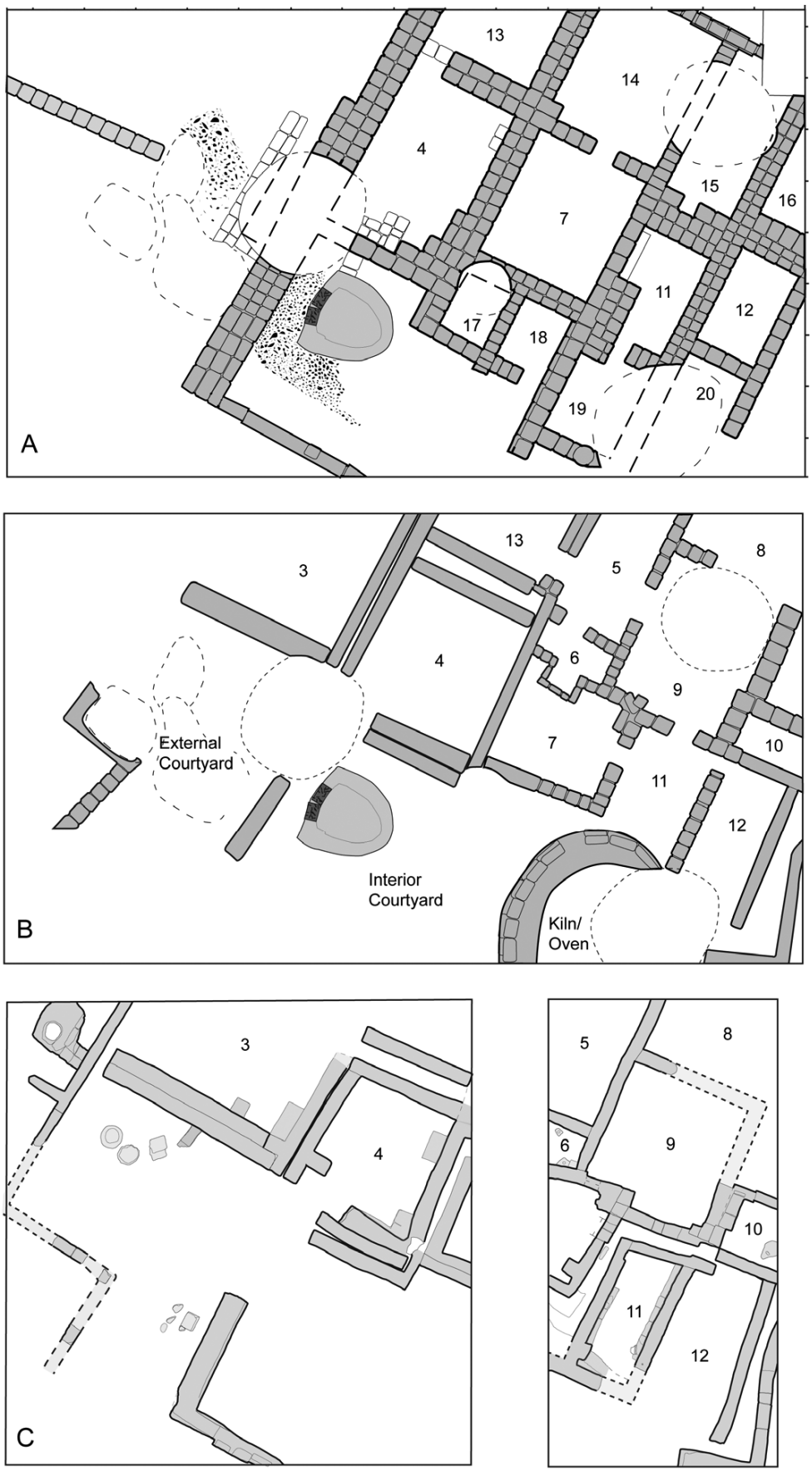


Figure 24 Mud-brick architecture from Area ZD3/4 Level 3. A) Sub-level 3C B) 3B C) 3A (Al Quntar, Khalidi and Ur 2011, 155, fig.4)

only known from a sounding and contained walls, but these had different orientation from subsequent occupations.

Level 3 displayed a complex agglutinative history in terms of architecture. A building present in the area was indeed remodelled multiple times through the destructions of walls and reinforcements of others. It was followed by two levels (2 and 1) where its function seems to have changed, turning into an open work area (Al Quntar *et al*. 2011, 156). The most prominent feature of these two levels was a 3.5 diameter pit kiln. The northeastern part of Level 1 might have been a major dump area and notably contained numerous sealings (Al Quntar *et al*. 2011, 157). For that matter, seals and sealings were found throughout all levels. Overall, when confronted with the data, the authors temporarily conclude that "the excavations reveal household architecture and assemblages that appear not to differ substantially from other contemporary LC sites in Northern Mesopotamia" (Al Quntar *et al*. 2011, 157). What truly distinguishes the assemblage from other sites is the clear emphasis on obsidian production.

Similarly to the architecture, the analysis of the ceramic assemblage revealed no fundamental difference from assemblages of other smaller contemporary sites in Northern Mesopotamia (Al Quntar *et al*. 2011, 162). 85% of the assemblage was composed of coarse flat-based mass-produced bowls (also called "Wide Flower Pot"; WFP) (Al Quntar *et al*. 2011, 157). An assessment of the ceramic from Area ZD3/4 dated it to the LC2 period. Additionally, in regard to later unambiguously sedentary settlements, ceramic evidence (notably the high frequency of large ceramic forms linked to a sedentary lifestyle) suggest sedentism during LC 1-2 at least for some parts of the excavated areas.

As mentioned earlier, the main specificity of Khirbet al-Fakhar when compared to smaller contemporary sites is the quantity of obsidian remains from the LC 1-2 periods (Al Quntar *et al*. 2011, 162). Obsidian composed 97% of the lithic assemblage from all three levels of occupation (1, 2 and 3) with over 5000 elements (blades and production debris). 70% of the obsidian assemblage were blades and blades fragments, 24% were cores and preparation debris and the rest were tools. This means that "Khirbat al-Fakhar in the LC1-2 period was simultaneously a production centre and a locus of consumption" (Al Quntar *et al.* 2011, 170). Additionally, this must have been true even at the household level, as each of them present evidence for pressure debitage techniques (requiring a lot of skill) on the outside and specialized activities in the inside (Al Quntar *et al.* 2011, 165). Evidence also suggests that most of the obsidian arrived at the site in the

form of largely decorticated nodules and that they came from major sources of raw material from very long distances (over 300 km). What these elements suggest is that "Khirbat al-Fakhar has demonstrated an early form of economic centralization in a single stone resource" (Al Quntar *et al.* 2011, 170).

Regarding obsidian, it is important to note that the hegemony of obsidian production at Khirbet al-Fakhar is only true for the LC 1-2 periods. For earlier periods and for later LC 3-4 periods on Tell Hamoukar's main mound, obsidian elements are scarce (Al Quntar *et al.* 2011, 165). Indeed, obsidian use decreased by the 4th millennium BC. This was the case for other sites in the Near East as well with the development of new techniques and use of chert. Additionally, there seemed to have been a form of "communal specialized production area" (Al Quntar *et al*. 2011, 165) where most of the blades would have been made. Indeed, most of the blade cores were found in Area ZM. This is yet to be verified, and the fact that each household produced at least part of its tools needs to be kept in mind.

Overall, the evidence presented here regarding architecture, ceramic, lithic and spatial dimensions suggest a large size (ca. 300 ha of high-density sherds scatter), economic specialization in a sole material (obsidian), an associated long-distance trading network in order to obtain raw material and to distribute finished products, the use of sealings and stamps to manage resources (maybe obsidian) (Reichel 2009, 84-85), and at least part of the site being settled year-round (possibly the 100 ha of white patches and main mound). Apart from its exceptional size and the unprecedented focus on obsidian, Khirbet al-Fakhar has not yet demonstrated other elements that would distinguish it from contemporary smaller sites.

4.2.3 Tell Hamoukar

During the first season in 1999, McGuire Gibson and his team dug three areas in Tell Hamoukar's main mound (A, B and C). One of those (A) was a step trench "designed to get an idea of what is in the mound from top to bottom" (Gibson 2000, 57). In this area, they stumbled upon a large brick wall (3 meters wide) which was later identified as a city wall (fig. 25) and dated to ca. 3700 – 3500 BC (LC3) thanks to pottery found at its basis (Gibson 2002, 72). During the 2001 season, Area F's goal was to follow this wall in order to assess it better. Additionally, during the 2007 and 2008 seasons, the use of magnetometry allowed to paint a good picture of the city wall surrounding the settlement at the time (fig. 25). It shows that the high mound was surrounded by this monumental wall. Under it, in Area A, was a house level (Gibson 2000, 57) that necessarily predates it. Given the large area covered

by such a large structure, it can be considered as monumental architecture, necessitating a form of social organisation and cohesion (through coercive power or more horizontal strategies).

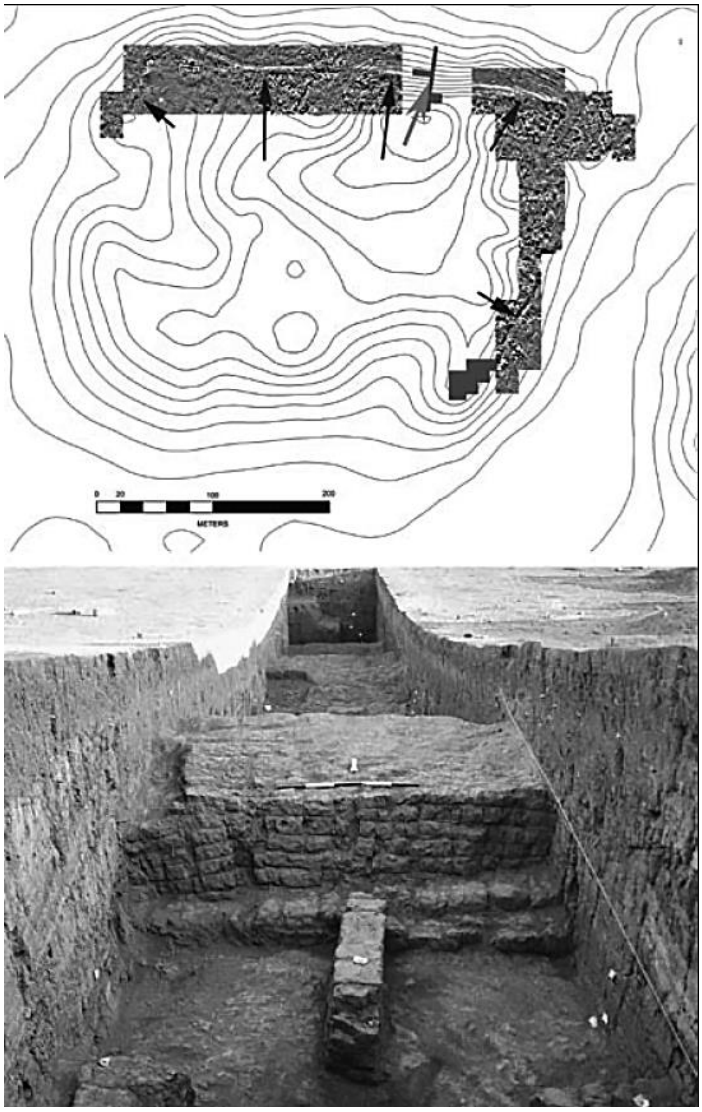


Figure 25 Geophysical map showing course of Hamoukar LC's city wall and picture of city wall excavated in 1999 (Reichel 2009, 83, fig. 9)

Area B has been a focus of the dig throughout seasons because the tripartite buildings found there were burnt around 3500 BC (Reichel 2006, 70) and other elements (e.g. sling bullets) indicated that the site was destroyed by violent actions, expanding on multiple sub-phases and patchy in nature (Reichel 2009, 80). Consequently, the conditions surrounding the events interested the team. The first building excavated there was identified as a "middle room house" which is common for the Uruk period in Iraq (Gibson 2002, 74). However, all the pottery found in the building was of local Syrian type (Reichel 2006, 70). This contrasted with the southern pottery found in the above levels. Although there were southern style cylinder seals, McGuire Gibson interpreted them as cultural appropriation by a local ruler of southern cultural elements (Gibson 2002, 75). In Area B, a "spectacle idol" was found which was very similar to the dozens from Khirbet al-Fakhar of earlier periods (Reichel 2009, 80-81). This would be at least one element linking the two sites.

Other buildings associated with the first ones were found in this area, suggesting that they were part of larger complexes (C-A and C-B) (Reichel 2007, 63). These were certainly administrative and storage units, given the large number of seals

and stamps found in them. Additionally, earlier and more substantial phases were found under the ones destroyed around 3500 BC, meaning that complex occupation existed before (Reichel 2011, 55). This corroborates with the existence of the city wall. Buildings from two phase notably (6 and 4) had larger walls and their layouts followed the same principles as later ones. Phase 4 also displayed many container sealings. Knowing that a substantial city wall surrounding a large area was built between 3700-3500 BC, this would mean that an important-enough settlement existed before, so that such a monumental project was worth it.

4.2.4 The Tell Hamoukar Survey

The Upper Khabur Basin was already well known from previous surveys. In this context, the THS aimed at distinguishing itself by its precision. Consequently, the area covered (125km2) was smaller than other surveys. This was compensated by the high intensity of surveying and the use of previously unavailable digital technologies and remote-sensing datasets (Ur 2010, 2). The survey was also completed by the use of declassified CORONA photographs. In planning this regional survey, they tried to balance the full coverage tradition of Near eastern surveys and the exhaustiveness of other traditions (Ur 2010, 39). The THS had therefore a holistic approach.

5. Analysis and discussion

In this chapter, the data available for both sites presented earlier will be confronted to the elements established in the end of chapter 3 (i.e. demographic, economic, geographical and sociological). Some elements related to the data that were partially mentioned will also be detailed further. This will give an overview of the sites through the lens of different approaches dealing with urbanism. A table summarising all the information is present at the end of the chapter (tab. 4). The following parts will detail the way the table was filled and decided.

5.1 Demographic elements

The demographic dimension is key here because it is on the basis of their abnormally large size that Tell Brak, Khirbet al-Fakhar and Tell Hamoukar have been presented as possible cities. This joins the discussion on megasites already mentioned earlier. When talking about site size and population, the discussion must always start from a regional comparative perspective. Regarding size, the vast majority of sites in the early Late Chalcolithic Upper Khabur rarely exceeded 2 to 3 ha (Wright *et al.* 2006-2007, 10; Ur 2010, 147). Our three sites' measurements must therefore be understood within this context.

Regarding population estimates in Mesopotamia, current agreements span between 100 to 200 people per ha (Marchetti *et al.* 2019, 222; McMahon 2019, 19). Several issues accompany these estimates. First, they usually correspond to a Sumerian or even later context. Settlement organisation of the sites presented here might not be similar to these later phases. More work might be necessary for more specific estimates. Additionally, depending on the extreme chosen (100 or 200 people/ha) the estimates go from simple to double. The difference is especially perceivable with very large sites. Finally, one must keep in mind that population estimates are tricky. Understanding the internal and diachronic dynamics and organization of a site is essential as expressed in chapter 3.4.1. The issue is even more present for large sites whose internal short-term dynamics are not well understood. Nonetheless, population estimates are a precious tool in the assessment of a site's nature.

For the present paper, estimates derived from both extreme will be calculated, with a concern for representativity. Additionally, based on the difficulties regarding estimates already expressed, the premise concerning interpretations will be that population was certainly a bit lower than the estimates. This is important because of the variable density of all three settlements (Ur 2010, 147). To explain this type

of site layout with varying density, Jason Ur puts forward two possible models. One is of shifting non-permanent settlement that implies a seasonal activity. The other one is of a permanent but discontinuous settlement (Ur 2010, 147). The first model could also be complementary with the second one. In effect, we could think of a large, strategically located settlement attracting nomadic or semi-nomadic population involved in trading who would have left traces of low-density occupation in-between clusters of permanent houses.

5.1.1 Tell Brak

Tell Brak's measurements can only be grasped starting from the LC2 period (Brak's phase E) for now. Earlier occupation has been found through various soundings, but the data is too sparse to assess much. During the LC2 already, areas other than the main mound have demonstrated signs of occupation (i.e. sherds clustering) associated with slight mounding. These zones are what McMahon terms the "urban edge" of Brak (see McMahon 2013). Surrounding mounds would need to be more thoroughly excavated. Before that, it is not possible to say for sure if these areas were settled during the LC2. What can be sure is that repeated activities and at least periodical occupation took place in these higher density zones north-east and south-west of the main mound. Researchers also believe that the entire high mound was settled at the time (Ur 2014, 52). The total settled area of the site (six surrounding clusters and the high mound) during the LC2 is therefore estimated to about 55 ha (Ur 2014, 52). But one must keep in mind that these were not 55 ha of continuous settlement. The high mound (ca. 40 ha) was separated from its satellite clusters (ca. 2-4 ha) by 200-400m of unsettled area.

During Brak's phase F (LC3-4), the settlement expanded following its preexisting organizational pattern. Researchers are quite certain that the entire central mound was settled and possibly at high density (Ur 2014, 52). The isolated clusters situated outside of the main mound grew to a point where some of them merged. The large outer areas to the south-west and north-east were continuously settled at variable density, adding to the total settled area from the main mound (Ur *et al*. 2011, 6). Even though the satellite clusters grew (in the direction of the high mound for some), a spatial separation between them and the main mound was maintained (Ur 2014, 52). Although the site's geomorphology dynamics make an accurate estimation of its size difficult to assess, it is thought that during the LC 3-4 phases Tell Brak's total settled area amounted to 130 ha (Ur *et al*. 2011, 7). Additionally, researchers on site have identified an increase in the use and discard of pottery.

They have interpreted this as "evidence of increased density of occupation" (Ur *et al.* 2011, 8). Therefore, "not only did the spatial extent of the settlement increase, the density of human occupation increased simultaneously" (Ur *et al*. 2011, 8). This means that Tell Brak grew in all attributes of the demographic approach during the LC3-4 phases.

Given the limitations of the present paper, it is difficult to account for this increase in density in population estimates. What can be assumed is that the estimates for Brak's Phase E will be closer to the lower on and closer to the higher one for Phase F. With that in mind, the population in Tell Brak during the LC2 would have been around 5500 to 11000 people. For the LC3-4 periods, it might have reached 13000 to 26000 people. Even if we assume that population was a bit lower than estimates, Tell Brak during both these phases was certainly an anomalously large site containing an anomalous high quantity of people. On this simple basis, it can at least be qualified as a megasite even though the site did not disappear after its contraction. The assessment concerning urbanism will be based on the other approaches.

5.1.2 Tell Hamoukar/Khirbet al-Fakhar

During the Late Chalcolithic 1-2 (Period 4; 4400-3800), Khirbet al-Fakhar's sherds scatters extended over a large area of about 300 ha. As detailed earlier though, only certain parts of the whole area were settled (i.e. central mounded area and patches of grayish soil from CORONA) amounting to a maximum of about 110 ha. Khirbet al-Fakhar therefore would have had a population between 11000 and 22000 people. Given the varying density for areas outside of the central mounded zone, it seems more relevant to assume that Khirbet al-Fakhar's population was closer to the lower estimates. Additionally, the intermittent occupation of areas outside of the central mounded zone "suggests the possibility of low-density dispersed settlement patterns" (Ur 2010, 98). This makes it difficult to imagine Khirbet al-Fakhar as a single settlement entity. Still, in comparison, none of the LC 1-2 sites surveyed around Khirbet al-Fakhar (THS) extended over 4 ha (Ur 2010, 98). The site's scale was exceptional.

Khirbet al-Fakhar was abandoned during or at the end of the LC2. The following settlement seems to have shifted to Tell Hamoukar, especially its high mound (Ur 2010, 148). Before the appearance of southern Mesopotamian ceramics at the site (from Period 5a; ca. 3600 BC), an indigenous settlement (Period 5b) subsisted on the high mound during the LC3 (beginning of Period 5b; 3900-3600 BC). The city

wall, dating to as early as 3700 BC, surrounded this area. A settlement on Tell Hamoukar might have been contemporary to Khirbet al-Fakhar, but current evidence does not allow to assert such possibilities. The LC3 settlement in Tell Hamoukar extended over an area of about 15 ha, equating to a population estimates between 1500-3000 people. Although remaining large, Tell Hamoukar's scale seems less radical than Khirbet al-Fakhar's. It was still the largest site in the THS region, with most sites hovering between 0.7 to 3.5 ha. But it was now accompanied by another 8.5 ha site (THS 40) about 5 km southwest from Tell Hamoukar. The emergence of these two sites might have been the result of Khirbet al-Fakhar's nucleation. Finally, and similarly to Tell Brak, Khirbet al-Fakhar and Tell Hamoukar's anomalously large size allow us to qualify them at least as megasites

5.2 Economic elements

Similarly to the demographic approach, economic elements are important in this context because the role played by our sites in a large-scale trading system is generally the most prominent factor to explain their development. In a broader context, economic factors are usually put forward to assess the emergence of cities in Mesopotamia in general. Here, elements regarding craft specialisation, long-distance trade and administrative organisation will be discussed in more details.

5.2.1 Tell Brak

The comprehension of Tell Brak's economic activity and evolution is aided by data coming from its most excavated area, Area TW. The earliest level found there (level 21; ca. 4200-4000 BC) was a workshop area with evidence for large scale food and ceramic production, and lithic tools, beads and ornaments manufacture. As detailed earlier, the workshop dimension of the area kept on expanding through the LC2-3, notably with the addition of the BTB, a massive secular administrative building. The nature of the site's economy has therefore been one of the main research themes for the excavation team early on. The concern was notably on the shift "from household production to craft workshop or factories" (McMahon 2013, 75).

This shift is observable during the LC2-3 (levels 22-19; ca. 4200-3600 BC) through all types of manufacturing. First, evidence point out to at least a partial centralization of wool spinning, and possibly of weaving too, by the late fifth-early

fourth millennium BC (McMahon 2013, 75). Indeed, several standardized objects linked to these activities were found clustered in TW. On the basis that a household production would normally suffice for a non-urban standard demand, Augusta McMahon hint to the significance of this clustering in a public workshop (McMahon 2013, 76). The author believes it is a sign that spinning might have either become communal and practiced in TW, or that the TW workshops produced standardized tools for textile household production (McMahonn 2013, 76). Either options indicate a form of labor division and standardized production in order to maximize manufacturing, possibly to answer a growing demand and/or to produce high value textile goods.

For the same periods, there is also evidence for the centralization of ceramic production. This shift was already observable in the Late Ubaid period and can be grasped through the standardization of ceramic forms throughout the region (i.e. Coba bowl). For that matter, Area TW seems to have been central for ceramic production in Brak, given the presence of a built ceramic workshop already in Level 21. Flint and obsidian were also crafted in Area TW both for tools used on-site, but also as manufactured goods for outside use. The latter is supported by the fact that obsidian was worked as inlays and beads. Along with crafted shells, these might have been used to craft prestige goods such as the rich necklace found in the infant burial from level 21 in Area TW (fig. 19) (see chapter 5.4.1 for more details) or the obsidian and marble 'chalice' from level 19 (4000 BC). Evidence for industrial production is also found in the LC2 trench HS6 which means that this sort of activity was spread throughout the site (Matthews 2003, 23-32).

The evidence for both craft specialization (i.e. skilled craftsman) and centralization (i.e. dedicated areas) and their combination are rather conclusive for Tell Brak. A shift of production from households to more industrial workshops must have taken place before the LC2 and early LC3. Additionally, the economic nature of the site is further highlighted by both the shift in scale of this phenomenon (i.e. craft centralization) and the rise in institutional control through levels 22 to 19 (McMahon 2013, 77). Institutional control, or at least administrative organisation, seems to have been rather important in Brak. This is symbolized by the creation of the BTB in level 20 (late LC2) right next to the industrial complex (GB) in TW and alongside a busy street next to the northern entrance. Although the building was empty, its location and plan hints to an administrative role. Before its erection, control over production, resources and importation must have been lower (McMahon 2013, 77).

The importance of administration in Brak is further supported by the large number of clay sealings (more than 1000) found throughout the site from LC2-3 levels. Most of these sealings came from containers "presumably holding resources coming from the city's hinterlands or moving within the city" (McMahon 2013, 77). Others served to seal doors which "reflect storage and distribution once those resources arrived at Brak" (McMahon 2013, 77). Additionally, different levels of control can be perceived. Most sealings were stamped once, but some were stamped multiple time with a unique seal, and a couple with different seals. According to McMahon, the multiple impressions indicate a multi-layered administrative system where "more than one person (or institution) was responsible for authenticating items and authorizing their movement." (McMahon 2013, 77).

Comparatively to Khirbet al-Fakhar, obsidian presence in Tell Brak was consistent with regional norms. Most of it came from sources in eastern Anatolia, with a preference for a specific one (Bingöl). Tell Brak was therefore part of a long-distance trading system, which is consistent with its location at a crossroads of main trade routes (Khalidi *et al*. 2009, 885). Additionally, obsidian must have come in Brak alongside other goods. To determine their presence and movement, the high number of clay sealings found throughout the site acts as a proxy.

5.2.2 Tell Hamoukar/Khirbet al-Fakhar

Regarding economic elements related to crafting, trading and administration, Khirbet al-Fakhar and the LC 1-2 periods display strong evidence for a central role of obsidian manufacture and trading. As detailed earlier the settlement demonstrates "an early form of economic centralization in a single stone resource" (Al Quntar *et al.* 2011, 170). Notably, this is one of the factors put forward to explain the rapid and vast development of the site (Khalidi and Gratuze 2010-2011, 24). At the time, the site was both a production and a consumption center. We also know it was home to a high number of specialized workers, who were able to produce pressure-flaked blades (Al Quntar *et al.* 2011, 171; McMahon 2019, 26). But production was quite decentralized, with workshop areas located within or near houses. A clear production zone associated with a form of secular control, such as Area TW in Tell Brak, has not yet been demonstrated. However, a certain concentration of cores in Area ZM might be first evidence of such a phenomenon in Khirbet al-Fakhar as well. Further excavation would be necessary though. It

might also mean that the nature of the site's production was different, with an even more horizontal form of organization.

Most of the obsidian came from the Lake Van area and was composed of raw material, making of Khirbet al-Fakhar an important node within a long-distance trading system. Given the importance of obsidian for the site's economy, this means that it was also very dependent on its northern suppliers (Khalidi and Gratuze 2010-2011, 24) and/or the populations with access to these sources (economic if not kinship ties) (Al Quntar *et al.* 2011, 166). The privileged position of Khirbet al-Fakhar within this global system certainly partly explains its rapid expansion. On the other hand, its economic dependency on a single resource might have also caused its demise when obsidian started being slowly replaced by local stone, and later possibly by copper from 4000 BC onwards (Reichel 2009, 83).

5.3 Geographical elements

Regional surveys have a long tradition in the archaeology of the ancient Near East. In a paper from 2015, Lawrence and Wilkinson established three categories of settlement in order to classify different large sites in northern Mesopotamia through the Late Chalcolithic and Early Bronze Age (fig. 26). First were slow-growing centres for both regional exchange and local political networks, which they 'hubs' (Lawrence and Wilkinson 2015, 332-333). Second are sites that grew extensively and very rapidly but were short-lived, which they call 'upstarts' (Lawrence and Wilkinson 2015, 334-335). Among upstarts they distinguish between 'endogenous' (i.e. which grew from attracting local population) and exogenous (i.e. which grew from external population reservoirs) (Lawrence and Wilkinson 2015, 336). The 'endogenous upstarts' create a decreased or stable number of settlements in the surroundings when they grow. 'Exogenous upstarts' on the other hand create an expansion in the number or size of rural settlements. This model can already constitute a good approach to understanding peculiar settlement patterns.

In a comparative mindset, we can look at the settlement pattern around Uruk from the Late Uruk to the later Early Dynastic (see Nissen 2007). First, from the end of the fourth millennium to the middle of the third millennium BC, a steady decline in the number of settlements followed an increase in the average size of settlements and in the total area settled in the region (Nissen 2007, 24). Secondly, Uruk had a clear hinterland whose limits are perceivable in surveys in the form of a 3-4 km wide empty area at a distance of about 13 to 15 km from the city (Nissen 2007,

26). Nissen believes that this trend is due to the political/administrative (governing economic ties) nature of the relation of Uruk with its hinterland.

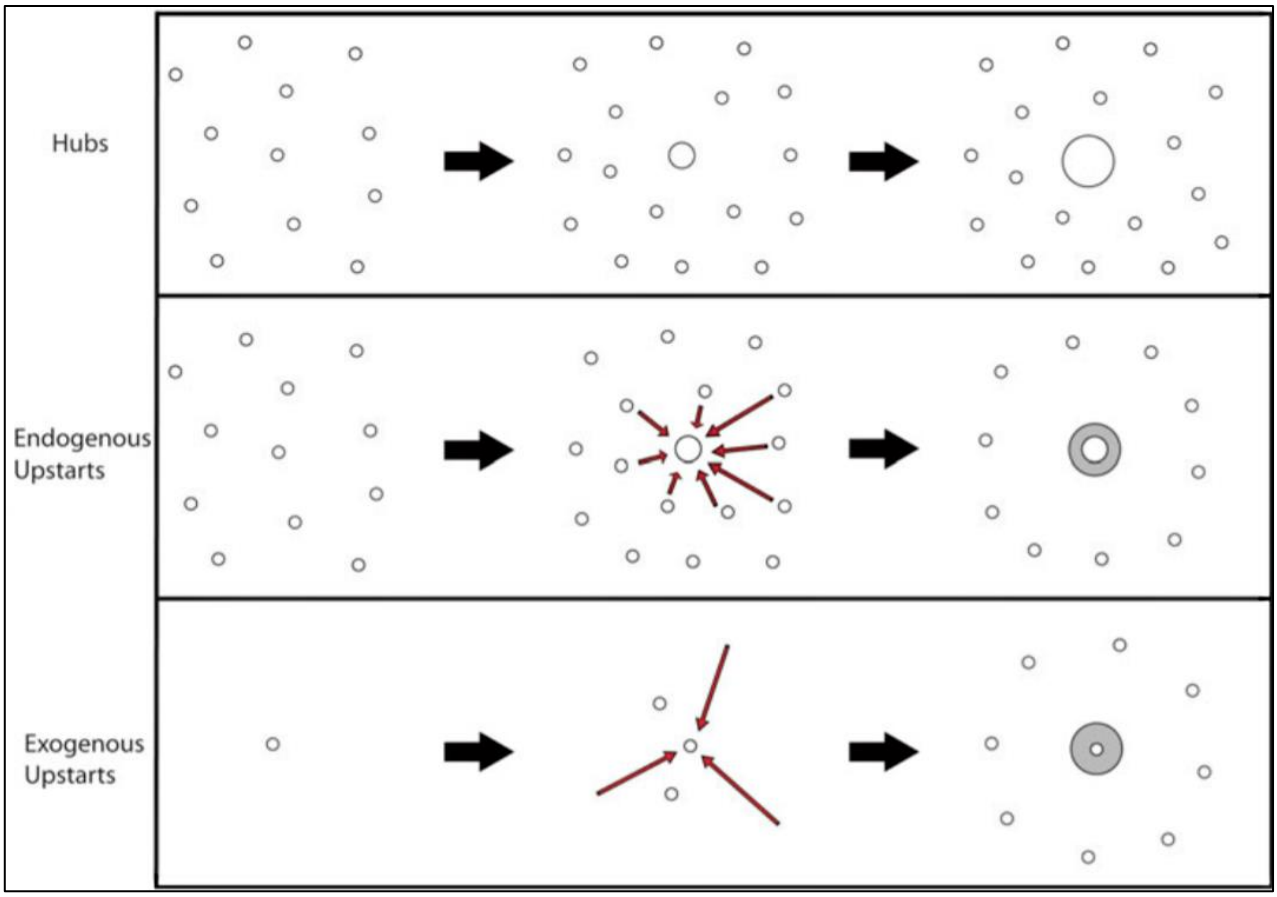


Figure 26 Schematic representation of three major pathways to urbanism in the northern Fertile Crescent. Small dots represent tell sites, dark grey represents lower towns, red arrows represent population movement (Lawrence and Wilkinson 2015, 340, fig. 8)

5.3.1 Tell Brak

During Brak's Phase E (LC2; 4200-3900 BC), 82 contemporary sites in the surveyed area were identified, against 63 in the preceding Ubaid period. The expansion of Brak during Phase E, rapidly making it the dominant centre of the region, was therefore seemingly accompanied by an increase in the number of neighbouring sites (Wright *et al*. 2007, 10). Henry Wright and his team estimated that, based on site's size and on CPT's premises, Tell Brak at the time was part of a four-tier settlement system. Brak itself was the central site. Its direct hinterland comprised "a few small centres or town sites of 5-7 ha, large villages of 2-3 ha and small village sites of about a hectare" (Wright *et al*. 2007, 10).

The following early Phase F (LC 3; 3900-3600 BC), when Brak reached its largest extent, was associated with 92 sites. Based on current evidence, the settlement hierarchy looks similar from that of the preceding Phase E. Additionally, a pattern

emerges from the distribution of mid-fourth millennium sites (fig. 27). The countryside surrounding Tell Brak was quite densely occupied by all types of sites at the time. But an area of about 4 km around Tell Brak to the north and west was basically devoid of other sites (the very few exceptions are small village sites). Settlements present in this zone in the preceding period were largely abandoned (McMahon 2019, 11). On the east and south, some sites were closer to Brak (as close as 2.5 km for some) but were almost systematically situated on the opposite banks of the Wadis Jaghjagh or Radd. Wright *et al*. believe that this relatively empty area might have been the intensely cultivated zone used for Brak's sustenance (Wright *et al.* 2007, 11; Ur *et al*. 2011, 8). Augusta McMahon adds that "the population from the area emptied villages likely fuelled the rapid growth of Brak" (McMahon 2019, 11).

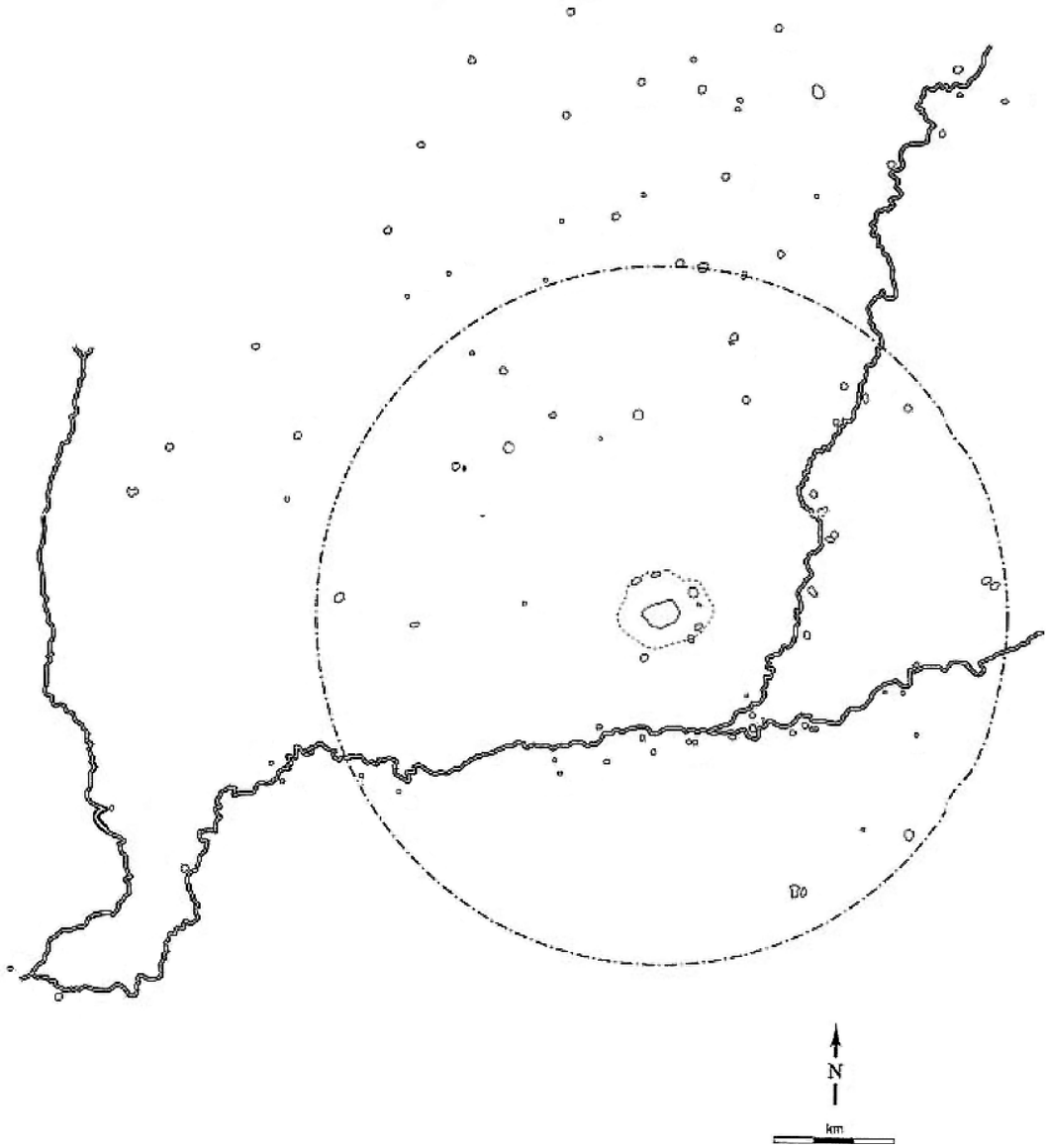


Figure 27 Sites found by the Tell Brak Sustaining Area Survey for the mid fourth-millennium BC (Wright et al. 2007, 17, fig. 3)

This might be explained by the fact that, if Brak did not have a certain level of political/administrative control over its hinterland, its inhabitants would have needed to produce most of their sustenance. But such an empty area constitutes sort of an anomaly through the lens of the Central Place Theory. However, one must not forget Brak's peculiar layout with its satellite sub-mounds which might have been acting as separate settlement in terms of sustenance production. Additionally, although the area was mostly empty, four sites were still present in it. Another element is that, as mentioned by McMahon, this phenomenon of empty area is contemporary with Brak's maximum expansion between the LC3-4. The people living in this zone in the preceding LC2-3 might have fuelled Brak's growth, right before the settlement contracted in the end of the LC4. This would follow the model of the 'endogenous upstarts' as described by Lawrence and Wilkinson. The complete survey results would be needed for a better interpretation of this phenomenon, especially to track the hinterland's changes after Brak's contraction.

5.3.2 Tell Hamoukar/Khirbet al-Fakhar

The THS provides precise information regarding settlement patterning in Tell Hamoukar's region. The emergence of a site such as Khirbet al-Fakhar (THS 25) in the LC 1-2 (THS Period 4) was unprecedented in the Near East. Its presence contrasts also strongly with the relative emptiness (only two sites found) of the region in the preceding Ubaid period (Period 3). Other than Khirbet al-Fakhar, 11 settled sites were found for Period 4 (fig. 28) in the 125 sq. m. (5 km radius from the edge of the excavation concession) surveyed. Comparatively to earlier phases, Period 4 also displays settlement patterning for the first time. Indeed, it shifted away from an even distribution and sites clustered mostly around drainages (especially the eastern one) with the exception of two sites. Additionally, there are general southeast-northwest alignment of sites with a probable economic reason (i.e. along trade routes) (Ur 2010, 98-99). Such alignments are not to be found in earlier and later periods, which might indicate that the momentum during which Khirbet al-Fakhar expanded so much was characterized by a special economic context with specific trade routes. Additionally, the lack of a substantial hinterland combined with the low density of Khirbet al-Fakhar's unmounded area might be further indication that the zone's very extended sherds scatter was the result of seasonal and/or sequential occupation from a nomadic or semi-nomadic population involved in trading (notably of obsidian and luxury raw materials).

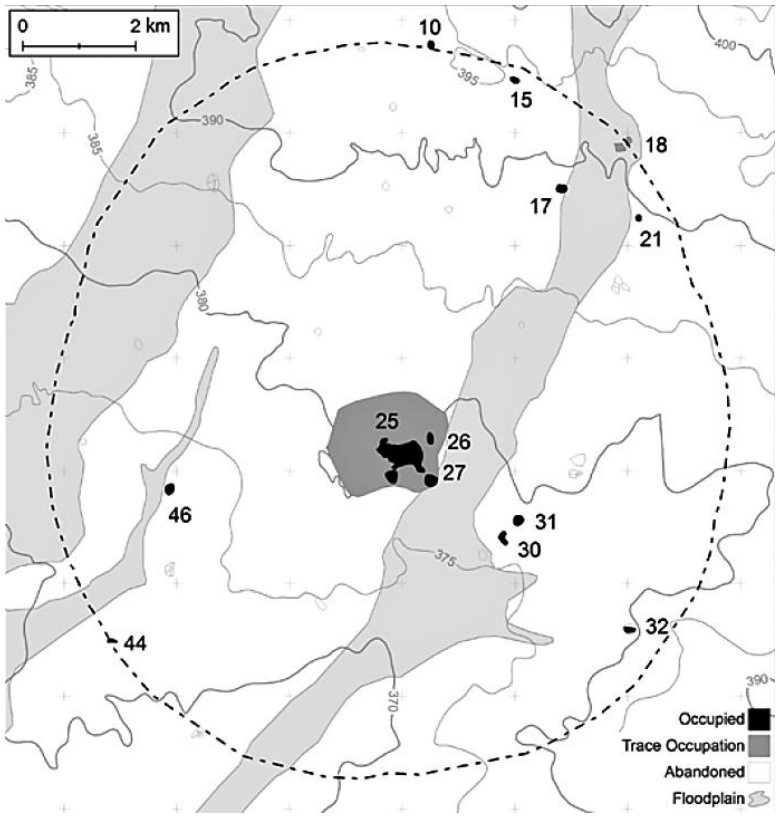
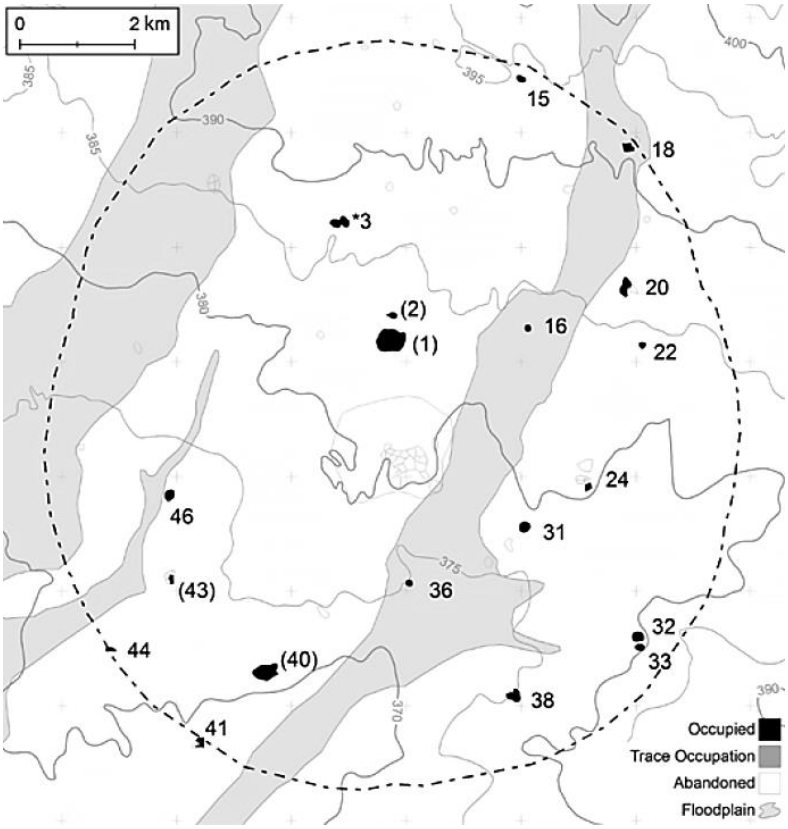


Figure 28 Map of the Tell Hamoukar Survey with sites from Period 4 (LC1-2) (Ur 2010, 98, fig. 6.7)

Figure 29 Map of the Tell Hamoukar Survey with sites from Periods 5a and 5b (LC3-5) (Ur 2010, 100, fig. 6.8)



In the following Period 5 (fig. 29) (LC3-5; 3900-3000 BC) and with the demise of Khirbet al-Fakhar, the general pattern “returned to a pattern of small villages” (Ur 2010, 99). As mentioned earlier, Tell Hamoukar itself (THS 1) was still the largest site of the area, but had decreased to a more standard size. Additionally, it was accompanied by another large site, THS 40, which expanded over ca. 8.5 ha. The total number of sites surveyed also increased, as 18 sites were identified. The plain north and west from Tell Hamoukar were almost abandoned, with the exception of THS which bore traces exclusively of southern ceramics, and THS 2 which appears as Hamoukar’s satellite (Ur 2010, 102). Most sites were still generally surrounding the eastern drainage, but the alignments observable in the previous period are less clear. All in all, it is hard to conceptualize a definite settlement pattern within the THS as was possible for Tell Brak. The number of sites identified is much lower, not only because the area surveyed is also lower. Tell Hamoukar and Khirbet al-Fakhar seem to have been more isolated than Tell Brak. Still during Period 5 at least, a certain multi-tiered pattern of settlements is perceivable with the presence of an intermediate site (THS 40). But based on current evidence, it is more problematic to picture Khirbet al-Fakhar and Tell Hamoukar in a stable settlement hierarchy. This seems especially true since there is a drastic reorganization of settlement at the end of the fourth millennium (Period 6) with the disappearance of most sites and a concentration in Tell Hamoukar (Ur 2010, 104).

5.4 Sociological elements

Elements of social differentiation are important in the discussion regarding urbanism because they imply the presence of an elite which be the expression of a form of central power present in the site. The emergence of social hierarchy, as already detailed, can be the result of a need for mediation when scales get bigger. Alternatively, the role of the household in Mesopotamia combined with the spatial layout of our sites might be an indicator that the inhabitants resorted to other forms of integrative modes, similar to a form of fission, or rather refusal of fusion. Here we will discuss element that are usually used to assess the existence of a form of social differentiation (i.e. burials, housing, artefacts and monumental architecture). Additionally, the presence of fortifications will also be tackled.

5.4.1 Tell Brak

In Area TW, a number of infant burials were found associated with levels 20 or 21. One burial from level 21 (early LC2) found in 2007 bears concrete evidence for

differentiated social status, possibly social stratification in that case (fig. 19) (McMahon and Oates 2007, 155). Indeed, the 5-6 years old child was buried in a foetal position accompanied by rich grave goods. These included 1500 shell beads that seemed to have been stitched to a cloth in straight lines. Additionally, there was a necklace made from over 2500 beads of obsidian, soft stone and dentalium-shell, and two mother-of-pearl pendants. Assembling such complex objects must have required an immense amount of time and a highly (or numerous) skilled worker(s). It is a clear sign of the importance of the person buried there, or at least the importance his burial was given reflecting complex social rituals. This also joins Marro's point regarding the development of infant burials as a possible sign for the growing importance of family dynasties (Marro 2012, 29).

Contemporary to this in the north-western corner of the site in trench HS6 in LC2 levels a monumental wall similar to that of the BTW was excavated. The wall was in use through the late LC2-early LC3 and was rebuilt multiple times (Matthews 2003, 29-31). Given the small area excavated, it is hard to determine if it is a part of a monumental building like the BTB, a city wall, the boundary wall of a large industrial compound, or something else. Either option would encompass the fact that it represents monumental architecture. Additionally, in Area CH there was a similar sequence of monumental structures from as early as the early LC1 (4400 BC). A major 'boundary wall' was found there that corresponded approximately to the eastern limit of the Naram-Sin palace two millennia later (Oates *et al.* 2007, 596). All in all, the "presence of monumental structures in Areas CH and HS, and in the even richer graves of Tepe Gawra (Oates *et al.* 2007; Matthews 2003, 29-30; Tobler 1950)" (McMahon and Oates 2007, 155) all add to the picture of an at least partially stratified society. All these large structures "would have required considerable investment of time, materials and labour not only for their construction but for their operation and maintenance." (Oates *et al.* 2007, 596).

Regarding artefacts, one of the most notable objects reflecting social differentiation might be the unique, obsidian and marble 'chalice' found in Area TW's level 19 (early LC3). It was made from a large, hollowed obsidian core and a base made from marble that was hollowed in order for the obsidian core to be inserted. The two pieces were held together by bitumen. There was also bitumen at the rim of the chalice, presumably holding other rich inlays (McMahon and Oates 2007, 152; Oates *et al*. 2007, 591). Its complexity contrasts strongly with the standardized mass-produced bowls found throughout this level. As McMahon explains, it is very heavy and holds little liquid. Therefore, it might have been used as a "high-visibility

feasting object" (McMahon 2013, 76) as is known for later periods in South Mesopotamia. Additionally, the chalice was found in a level and building with clear evidence for the manufacture of prestige and luxury goods, among other types of manufacture (McMahon and Oates 2007, 152). This means there was a demand for these sorts of objects, a possible sign for the emergence of an elite in research of ostentatious items. These were also maybe traded, making of Brak a producing site for prestigious goods.

Regarding domestic architecture, several LC 3-4 structures were recovered in Area TW from levels 18-16. Some held prestige materials and objects, and signs of feasting were also assessed (Ur 2009, 14). However, the tripartite plan is quite homogenous (even for non-domestic structures), and it is not possible to differentiate housing on the basis of their plan. Monumental architecture did exist though, and these buildings were certainly associated with administrative or elite activities (such as a possible feasting hall from TW's level 18; see Oates *et al.* 2007, 594-596). Additionally, the monumental tripartite "Eye Temple" which contained hundreds of small stone figurines is now dated to the LC3-4 (Ur 2009, 13-14). One such figurine or "idol" was found in Area TW's level 20, pushing the possibility of religious rituals and institution to even earlier periods (McMahon and Oates 2007, 153-154).

All in all, the existence of an elite in early Late Chalcolithic Tell Brak seems rather clear. What is difficult to assess is the cause at the origin of this social stratification and its nature. Given the present evidence, a centralized power seems anachronic. The importance of the site within a long-distance trading system associated with the wide distribution of clays sealing technology make it more likely that Tell Brak's ruling power was decentralized and economic in nature. Additionally, the site was not homogenous, certainly encompassing discrete household clusters (Ur *et al*. 2011, 8). Therefore, as is hypothesized by Jason Ur, it seems more likely that the site was under the influence of powerful households of varying scales (Ur 2009, 21). In this context, political and social dynamics differed depending on the scale (i.e. inter- *versus* intracluster). This sort of model "distribute agency not only to the heads of elite institutional households but also to the small individual households that made up the bulk of society" (Ur 2009, 40). Additionally, we know that the Eye Temple's earliest phases, to which numerous votive findings were associated, predate the arrival southern influence (McMahon 2019, 21-22). Consequently, one cannot ignore the fact the leadership in Tell Brak encompassed a religious

dimension, especially since we know the importance of religious power for later Mesopotamian periods.

5.4.2 Tell Hamoukar/Khirbet al-Fakhar

As detailed in chapter 4, Khirbet al-Fakhar does not display fundamental differences in terms of material culture and architecture when compared to other sites in North Mesopotamia. Its main distinctive feature is the important place occupied by obsidian within the site and its scale. In terms of sociological analysis, one would expect to find traces of institutional control, social differentiation and/or specific social organization for a site whose size was unprecedented and whose economic dynamics gravitated around the specialization in a specific resource. Part of the issue here is certainly due to the limitation of excavated evidence. Notably, the fact we do not have burials make it difficult to conceptualize social differentiation, especially since domestic architecture does not display evidence for such phenomenon.

In a way, the site's spatial organization sort of reminds of Brak's Phase E, with a central main mound and surrounding clusters separated by lower density areas where activities took place. This could hint to the same social separation between areas of the site. These different areas might have represented distinct social entities (e.g. households, supra-households/neighborhoods) whose political and social independence made it unnecessary to fuse (Ur 2011, 8). In such a context, social stress would be dispersed between these entities instead of shared.

The evidence for Tell Hamoukar LC 3 (before southern material culture intrusion) is quite different. The fact that a monumental city wall surrounding the high mound was built around 3600 BC on top of preexisting domestic architecture means that a form of planification took place at some point, with the decision to put a lot of effort (i.e. energy, people, time) into this construction. This could be done only through a form of complex integrative mode. Still, these assumptions would require more evidence in order to be clearly assessed. Notably, burials are also missing. Additionally, most Late Chalcolithic architecture excavated is dated to Period 5a, when southern Uruk influence starts to be perceived in the house plan and material culture (i.e. sealings motives). However, an earlier structure that was more substantial than subsequent ones was identified. It was infilled in order to sustain the administrative and storage units of later LC3-4 periods (TpB-A). These have not yet been excavated, but their presence does show large complex architecture.

On the basis that following structures were dedicated to administration and/or storage, the building maybe served a public function.

Attribute	Type of variable	Khirbet al-Fakhar (LC 1-2)	Tell Hamoukar (LC3)	Tell Brak's Phase E (LC2)	Tell Brak's Phase F (LC 3-4)
Demographic					
population estimates	M	11000-22000	1500-3000	5500-11000	13000-26000
size (ha)	M	300 ha	≥ 15 ha	≥ 55 ha	≥ 130 ha
built up area (ha)	M	110 ha	15 ha	55 ha	130 ha
Economic					
craft specialization	P/A	P	N/A	P	P
long distance trade	P/A	P	P	P	P
administrative organization	P/A	A	P	P	P
Geographical					
place within a differentiated settlement system	P/A	A	A	P	P
Sociological					
differentiation in burials	P/A	N/A	N/A	P	P
differentiation in houses (ditto)	P/A	A	A	N/A	N/A
differentiation in artefacts	P/A	A	A	P	P
presence of palatial or temple structures and/or monumental secular architecture	P/A	A	P	P	P
city wall		A	P	N/A	N/A

Table 4 Archaeological attributes at LC Northern Mesopotamia sites

6. Conclusion

Based on current evidence and through a systematic presentation of the data, the research questions can be partially answered. Regarding the way ancient urbanism should be conceptualised, the theoretical framework from this thesis presents a rather exhaustive state of the research. First and foremost, when studying this topic, one cannot ignore the ideological stakes at play in the way the issue has been treated. These issues are mostly the result of the history of research itself. I argued that most debates can be linked up to the problem of the proximity between the concept of 'city' and 'state'. Additionally, the relationship between size and complexity is a recurrent challenge that researchers need to reflect upon. Alternatively, concepts such as 'megasites' will lead us to a better understanding of the complexity and diversity of trajectories taken by human societies. Additionally, the issue of size in a context where large scales are involved puts emphasis on the importance of establishing the contemporaneity within a settlement.

Concerning ancient urbanism in North Mesopotamia or in the Near East in general, I believe that the various approaches presented and united under the overarching framework of Michael Smith's model constituted a powerful heuristic tool. As explained in the thesis, urbanism has been studied by many different disciplines. Although a functional understanding of cities is now globally accepted, diversity subsists in the focus chosen by researchers regarding the nature of these functions. Unifying these different approaches (demographic, economic, geographical and sociological) allows us to better situate a site within the urban nebula. Alternatively, a better way to present results could be found, with the objective of a further comparative studies. The use of radar charts might prove useful.

Mainly, what we observe through the northern sites studied in this thesis is the confirmation of the importance of economic factors in the development of urbanism in the region. A strategic location within a large-scale trading system is a recurrent enabling factor for the emergence of complexity. The attraction of economic activities makes it so that integrative modes other than fission are developed (Al Quntar *et al.* 2011, 170). Additionally, Tell Brak, Khirbet al-Fakhar and Tell Hamoukar present interesting spatial layout. The different satellite pockets of occupations gravitating around a larger occupation might be further indication of the way the households as a basal unit of ancient near eastern societies structured social organisation.

Even after a thorough presentation of data and with the help of a theoretical framework, assessing whether Tell Brak, Khirbet al-Fakhar and Tell Hamoukar can be qualified remains tricky. Concerning Khirbet al-Fakhar, I personally agree with the recent assessment made by Jason Ur (2020). The site fits well within the concept of 'megasite'. Its large scale is not reflected in other types of attributes except for the economic ones, which were certainly the enabling factors for its rapid and large growth. Al Quntar states that this might "be early evidence for a later trait of Mesopotamian cities: the sometimes transient nature of trade networks" (Al Quntar *et al.* 2011, 172. Additionally, the low-density intrasettlement spaces and their role still need to be better understood. Still, its central mounded area was very large for the time. But the lack of clear settlement pattern that could have sustained the settlement makes it impossible to assess the site as a city. One thing is for certain, Khirbet al-Fakhar should not be presented as 300 ha site. Doing so creates a false image and does not accurately present the oddness of its organisation.

Regarding Tell Hamoukar, the situation is a bit different. Its scale was way smaller but remained exceptional in its context. In terms of urban attributes, it follows the same trend as Khirbet al-Fakhar. The exception is the presence of a monumental city wall surrounding the settlement. The presence of this exceptional structure, which was built upon earlier and still unknown occupation, indicates the important status that the settlement bore at the time. Consequently, based on current evidence, LC3 Hamoukar cannot definitively be named a city but further research into earlier phases might change our view of the site.

Tell Brak differentiates itself by the longer persistence of a large occupation. Additionally, until its contraction in the late LC4 linked with the appearance of southern cultural markers and episodes of destruction, the settlement maintained the presence of urban attributes while keeping on expanding from the LC2 to the LC4. Elements of economic complexity are unambiguous. This is helped by the excavation of Area TW. The regional survey was also more conclusive in proving the presence of a settlement pattern. Regarding the geographical approach, the issue of the empty area surrounding the site still needs to be solved, even though possible explanations were expressed in this thesis. Domestic architecture of early periods also needs to be further explored. The possibility of the presence of a city wall cannot be confirmed but cannot be ignored either. Finally, the importance of religious institutions in Tell Brak (possibly for early phase) (Ur 2020, 48) also differentiate the site from the two others. It also links it to later unequivocal Mesopotamian cities. Given current evidence, and following on already-existing

assessments, Tell Brak for both Phase E and F could be qualified as a city, even if important concerns still need to be dealt with. I believe that there are too many additional elements to only call it a 'megasite' such as Khirbet al-Fakhar. Ultimately, the fact that northern urbanism collapsed and was ultimately encompassed in a southern model must not obscure the fact that an independent trajectory developed in North Mesopotamia hundreds of years before Uruk.

For further research, there are still elements which are still in unpublished studies that might change our understanding of these sites. For instance, Salam Al Quntar PhD thesis focuses on LC1-2 levels from Khirbet al-Fakhar. Additionally, the full report of the Tell Brak Sustaining Area Survey is still in press. There is also an area in the western part of Khirbet al-Fakhar that bore a very high density of obsidian. It might constitute a good area for future excavations. The advantage of the methodology chosen is that it is not closed. New elements will simply be added to the table which will help refine our assessments. Additionally, elements coming from any disciplines can be added. The goal of this thesis was not to revolutionise our interpretation of these sites. The aim was to ground their assessment into a strict methodological and global approach and as free as possible from ideological issues. I believe that we will be able to go further from now on only by adding new data.

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