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Körtiktepe and the Early Neolithization in Upper Mesopotamia

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Abstract

Körtiktepe is the only site in southeastern Türkiye that provides securely dated evidence of Younger Dryas occupation. Together with Tell Qaramel and Tell Mureybet in the Middle Euphrates Basin, it played a pivotal role in the origins and early development of the Neolithic in Upper Mesopotamia. Occupied by sedentary hunter-gatherer-fishers from ca. 10,700 to 9,300 BC, the site preserves a continuous sequence spanning the Younger Dryas to the Early Holocene. Excavations have revealed approximately 460 architectural features and around 2,000 single and double burials -half containing painted human skeletons accompanied by an extraordinary range of grave goods- making Körtiktepe one of the richest known Neolithic cultural assemblages worldwide. Its 1,300 years of pre-agrarian settlement history, coupled with abundant plant remains and hundreds of thousands of animal bones, provide a unique opportunity to examine human responses to environmental change during the Younger Dryas-Early Holocene transition. By integrating chronometric datings, architectural traditions, burial customs, and archetypal cultural items, this study positions Körtiktepe within its broader chronological and cultural context and evaluates its legacy in shaping Neolithic lifeways in Upper Mesopotamia.

Keywords: Körtiktepe, Younger Dryas, Early Holocene, PPNA, Neolithization, Upper Mesopotamia.

Yukarı Mezopotamya'da Erken Neolitikleşme Sürecinde Körtiktepe

Öz

Körtiktepe, Güneydoğu Anadolu Bölgesi'nde Genç Dryas yerleşime dair güvenilir bir şekilde tarihlendirilebilen kanıtlar sunan şimdiye kadarki tek yerleşimdir. Orta Fırat Havzası'ndaki Tell Qaramel ve Tell Mureybet ile birlikte Yukarı Dicle Havzası'ndaki Körtiktepe, Yukarı Mezopotamya'da Neolitik kültürün doğuşunda ve gelişiminde önemli bir rol oynamıştır. Şimdiye kadar Körtiktepe, Güneydoğu Anadolu'da Genç Dryas Devri yerleşik yaşamına dair güvenilir bir tarihlendirmeyle kanıtlar sunan tek yerleşimdir. Yerleşim, MÖ 10.700'den MÖ 9.300 yılları arasında, Genç Dryas'ten Erken Holosen Döneme kadar, yerleşik avcı-toplayıcı-balıkçıların yaşadığı bir yerdir. Yaklaşık 460 mimari kalıntı ile yarısı boyalı insan iskeletleri olmak üzere olağanüstü sayıda mezar hediyesi içeren yaklaşık 2.000 tekli ve çiftli gömü ortaya çıkarılmıştır ki bu da onu dünyanın en zengin Neolitik buluntu grubu olan yerleşimi

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yapmıştır. 1.300 yılı aşkın tarım öncesi yerleşim tarihi, zengin bitki kalıntıları ve yüz binlerce hayvan kemiği ile Körtiktepe, Genç Dryas'tan Erken Holosen'e geçiş sırasında çevresel değişikliklere karşı insan tepkilerine ilişkin bilimsel soruları araştırmak için önemli bir fırsat sunmaktadır. Bu makalede; mutlak tarihler, yapı geleneği, ölü gömme adetleri ve yoğunlukları ile birlikte arketip kültürel öğeleri karşılaştırarak Yukarı Mezopotamya'daki Erken Neolitikleşme sürecinde Körtiktepe'nin kronolojik konumu ve mirası belirlenmeye çalışılmıştır.

Anahtar Kelimeler: Körtiktepe, Genç Dryas, Erken Holosen, PPNA, Neolitikleşme, Yukarı Mezopotamya.

Introduction

The survival of much of today's human population depends primarily on a limited number of domesticated plant and animal species -many of which were first cultivated and domesticated during the Neolithic period. The shift to a sedentary way of life gradually facilitated plant and animal domestication as humans adapted to the Holocene environment[1]. For roughly two million years, humans lived as foragers, relying mainly on gathering and hunting[2]. It was only toward the end of the Last Glacial Maximum (LGM) that rapid changes in global climate occurred[3]. Around 15,000-14,000 years ago, new and varied ecological niches emerged, accompanied by the spread of grain vegetation such as wild wheat, barley, and lentils, which enriched the landscapes of West Asia. These developments encouraged hunter-gatherer groups to begin settling in semi-permanent camps[4]. Over time, these camps developed into the first permanent villages in human history.

During the Younger Dryas period, pre-agrarian hunter-gatherer groups in the Tigris and Euphrates basins were able to maintain a sedentary lifestyle[5]. This settled but hunting-gathering way of life persisted for over a thousand years and eventually led to the emergence of Neolithic cultures in the region. Significant cultural developments took place during this time, including a notable growth in human population, the emergence of various professions and early social classes, and the expansion of trade between different regional and interregional human groups[6]. Additionally, there were remarkable increases in ritual artifacts and artistic imagery, marking unprecedented occurrences in the history of humanity[7].

Over the past fifty years, numerous significant archaeological sites in the Tigris and Euphrates basins of Southeastern Türkiye, Northern Syria, and Northern Iraq have revealed ritual and communal architectures[8]. These sites, along with hundreds of smaller and short-term sites, include a considerable number of large settlements that likely functioned as major centers for the emergence and spread of Neolithic cultures across Upper Mesopotamia. The

1 Baird et al. 2018; Bar-Yosef–Valla 1990; Benz et al. 2015; Rössner et al. 2018.

2 Siddiq 2019, 52.

3 Roberts et al. 2008; Siddiq 2019, 178.

4 Baird et al. 2013; Olszewski 2018.

5 Benz et al. 2013; Benz et al. 2015; Ibáñez–Stordeur 2008; Mazurowski–Kanjou 2012.

6 Siddiq 2020; Siddiq–Özkaya 2020.

7 Mazurowski–Kanjou 2012; Peters–Schmidt 2004; Siddiq et al. 2021.

8 Christidou et al. 2009; Hauptmann 2011; Karul 2020; Miyake et al. 2012; Özdoğan–Özdoğan 1998; Özkaya et al. 2013; Schmidt 2010; Stordeur 2015; Watkins 1995.

material cultures found in these early sedentary villages reflect distinctive symbolic practices, encompassing animal figurines, plaques and plaquettes with animal depictions, reliefs of humans and humanoids, sculptures of human-animal hybrids, pillars adorned with animal depictions, animal engravings, installations of animal bones, painted human skeletons in intra-mural graves, and thousands of burial objects[9]. As a result, they are often interpreted as centers of symbolic revolution. Particularly noteworthy in this regard are early Neolithic sites such as Körtiktepe, Hallan Çemi, Çayönü, Göbeklitepe, and Karahantepe in Southeastern Türkiye, as well as Tell Qaramel, Tell Mureybet, and Jerf el Ahmar in Northern Syria[10]. The unprecedented combination of ecological, socioeconomic, and cultural developments also facilitated the emergence of plant and animal domestication, which played a crucial role in the establishment of agro-pastoral economies and "village life" between the end of the 10th millennium BC and the middle of the 9th millennium BC. These developments are evident at sites such as Nevalı Çori, Akarçay Tepe and Mezraa-Teleilat in Southeastern Türkiye; Dja'de, Tel Halula, Cheikh Hassan, and Tell Sabi Abyad in Northern Syria; and Qermez Dere, Nemrik, M'lefat, Tell Maghzaliyah, Karim Shahir, and Jarmo in Northern Iraq (Figure 1).

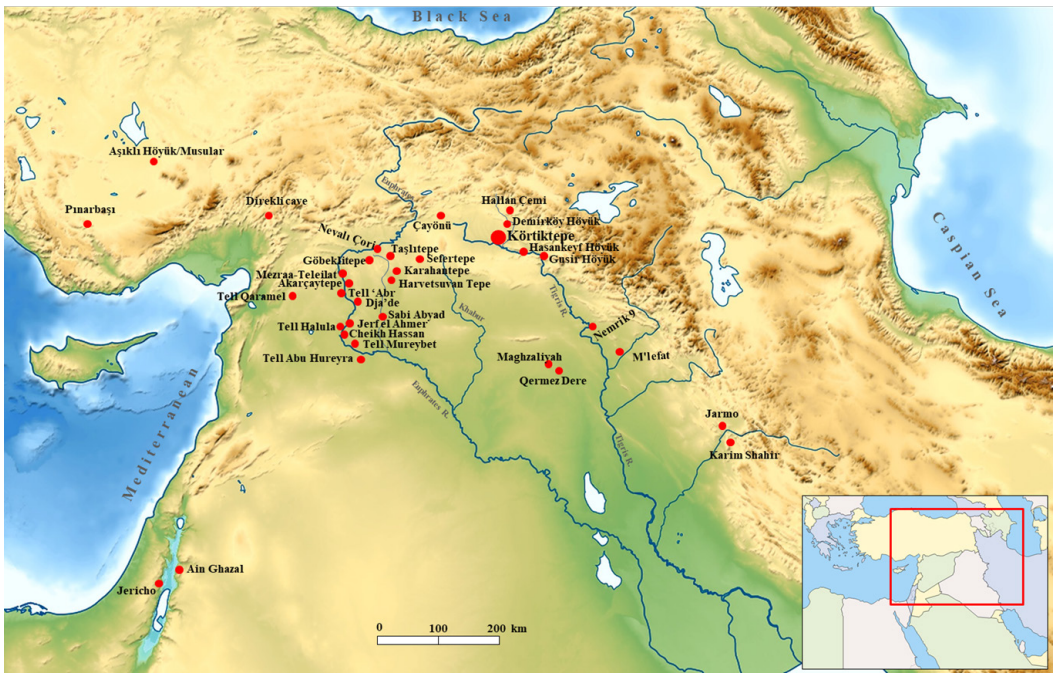

Figure 1. Location of the sites mentioned in the text (Map ©AB Siddiq).

Among these first sedentary sites Körtiktepe was located in the Upper Tigris Basin and occupied from the Younger Dryas period to the beginning of the Holocene, spanning approximately 10,700 BC to 9,300 BC. The excavation at Körtiktepe, carried out as part of the Ilısu Barrage project, took place between 2000 and 2018, under the direction of Prof. Dr. Vecihi

9 Karul 2021; Mazurowski–Kanjou 2012; Özkaya–Coşkun 2011; Peters–Schmidt 2004; Siddiq et al. 2021.

10 Benz et al. 2015; Çambel–Braidwood 1980; Dietrich et al. 2012; Ibáñez–Stordeur 2008; Mazurowski–Kanjou 2012; Moore et al. 1975; Özkaya 2009; Rosenberg–Redding, 2000; Stordeur 2015.

Özkaya from Dicle University, Diyarbakır, Türkiye[11]. Despite still being hunter-gatherers the inhabitants at Körtiktepe, unlike their predecessors, were sedentary and engaged in intensive manufacturing activities. A wide range of archetypal cultural items including painted bone plaquettes, stone plaquettes with hybrid imageries, and decorated and non-decorated stone vessels were recorded from Körtiktepe[12]. The site also features tens of thousands of chipped stone tools, over 2000 intra-mural burials and around 460 architectural remains[13]. Numerous artifacts depicting animal symbols suggest that various animal imageries played significant roles at Körtiktepe over its 1300 year occupation[14]. The symbolic artifacts found at Körtiktepe hold great influence and can be considered as precursors to animal symbolism observed in some subsequent Neolithic sites in the Tigris and Euphrates Basins, such as Gusir Höyük, Hasankeyf Höyük, Göbeklitepe and Jerf el Ahmar. The presence of similar cultural items, such as painted bone plaquettes, stone plaquettes with hybrid imageries, and decorated stone vessels, can be the indicators for cultural contacts and the exchange of artistic and symbolic traditions between Körtiktepe and the subsequent Pre-Pottery Neolithic sites[15]. In addition to its rich cultural items, Körtiktepe's settlement history, the abundance of plant remains, and the large quantity of animal bones provide valuable insights into understand human responses to the environmental changes during the Younger Dryas to Early Holocene transition[16].

In this study, we aim to assess the overall significance of Körtiktepe in the progress and spread of the Neolithic culture in Upper Mesopotamia. To achieve this, we will revisit the radiocarbon dates of notable Early Pre-Pottery Neolithic sites and compare them with the radiocarbon dates obtained from Körtiktepe. We will also examine the number of architectural remains at each site throughout their occupational period. This will provide insights into the scale and duration of settlement at Körtiktepe compared to other sites. To assess the extent of social complexity, local and regional influences, and cultural practices, we will explore the funerary rites, burial practices, and treatment of the deceased by revisiting the number of burials, density of burial goods, and manner of treatment at selected early sedentary sites and then compare these findings with the burials recorded at Körtiktepe. To gain insights into ritual and symbolic practices, as well as the exchange of beliefs and ideas, we will compare the archetypal cultural items and various types of animal imagery at Körtiktepe with contemporary and subsequent Pre-Pottery Neolithic sites in Upper Mesopotamia.

The Younger Dryas sedentary life in Upper Mesopotamia

To date, three sites, namely Tell Qaramel, Tell Mureybet and Körtiktepe, have securely presented evidence of Younger Dryas sedentary life in Upper Mesopotamia. Among these sites, Tell Qaramel, located in the Middle Euphrates Basin, appears to have the oldest occupational dates. It is situated on the right bank of the Queiq River, approximately 25 km north of Aleppo and 65 km south of the Turkish-Syrian border. The oldest sedentary occupation at the site was defined as Proto-Neolithic, began around the beginning of 10,800 cal BC, and the occupation

11 Özkaya 2009; Özkaya–Şahin 2019.

12 Özkaya–Coşkun 2011; Siddiq et al. 2021.

13 Özkaya–Coşkun 2011; Kartal et al. 2018.

14 Özkaya–Coşkun 2011.

15 Özkaya–Coşkun 2011; Siddiq et al. 2021.

16 Arbuckle–Özkaya 2006; Benz et al. 2015; Emra et al. 2022; Rössner et al. 2018.

continued until the end of the Pre-Pottery Neolithic A, around 8,800 cal BC[17]. The hunter-gatherers at Tell Qaramel lived throughout the Late Pleistocene and Early Holocene, exploiting the rich environment through highly developed specialization in gathering plants and hunting animals for approximately two millennia. These hunter-gatherers resided in subterranean circular houses supported by wooden posts[18]. Excavations at Tell Qaramel revealed two large public buildings and some 60 circular and oval subterranean and on-ground houses, spanning five uninterrupted chronological horizons[19]. During the Younger Dryas, the settlement's architecture was scattered and resembled an open camp. In the Early Holocene, a variety of circular houses emerged, while rectangular buildings appeared during later occupations[20]. Thus far, a total of 28 primary and secondary human burials, including 24 individual and 4 collective burials, have been discovered exclusively within the PPNA layers at Tell Qaramel, within the Early Holocene context[21]. Primary burials consist of complete skeletons placed in flexed positions or articulated flexed skeletons, with the skulls often removed. Secondary burials include individual skull burials[22]. Alongside the architecture, plant and animal remains, a diverse array of everyday bone and stone tools, decorated stone vessels, and stone objects adorned with geometric, zoomorphic, and anthropomorphic patterns were unearthed at the site[23]. Geometric decorations were prevalent on cultural items from Tell Qaramel, with over 80% of stone shaft straighteners featuring engravings of geometric designs and natural imagery. These geometric and natural depictions bear a striking resemblance to those found at Körtiktepe, Tell Mureybet and Jerf el Ahmar. Snakes, birds, gazelles, suns, and moons are among the most common motifs following geometric decoration[24].

Tell Mureybet also serves as a site that presents well-preserved continuous cultural phases from the Late Epipalaeolithic into the Neolithic period in the Middle Euphrates Basin. Although it was originally situated on the left bank of the Euphrates River, it is currently submerged beneath the waters of the Tabqa dam. The site is believed to have been established by a group of hunter-gatherers between 10,400 and 10,000 BC and remained active for the following two millennia until the middle PPNB, around 8,200 BC[25]. During the earliest phases of Mureybet, a simple social structure was observed, accompanied by the presence of basic subterranean round buildings. As time progressed, a more complex social structure emerged, leading to variations in building construction. Similar to Körtiktepe, the initial houses at Mureybet were subterranean rounded structures, typically featuring floors lined with slabs or pebbles[26]. Eventually, these buildings transitioned to being constructed above ground. Hearth constructions were predominantly located outside the houses, although some were built

17 Mazurowski et al. 2009, 775–776.

18 Mazurowski 2012a.

19 Mazurowski et al. 2009, 773.

20 Mazurowski 2012a.

21 Kanjou 2012; Kanjou et al. 2015, 744.

22 Kanjou et al. 2015, 74.

23 Mazurowski et al. 2009; Mazurowski 2012a.

24 Mazurowski 2012b.

25 Chamel et al. 2017, 26; Évin–Stordeur 2008, 24–25.

26 Ibáñez–Stordeur 2008.

inside[27]. In the first two phases of the site, there is no evidence of crop or animal domestication. However, the PPNA-PPNB transitional phase (phase III) indicates some indirect evidence of pre-domestication exploitation of einkorn wheat[28]. In the final occupational phase during the middle PPNB, there are indications of the exploitation of domestic sheep and possible evidence for the domestication of cattle[29].

Towards the northeast, Körtiktepe in the Upper Tigris Basin remains the only site in Southeastern Türkiye that provides securely dated evidence of Younger Dryas occupation. The early occupations at the site began around 10,700 BC, but undisturbed cultural continuity is evident from at least 10,400 cal BC and continues up to 9,300 cal BC (Table 1). The people at Körtiktepe relied entirely on the exploitation of wild plants and animals throughout their occupation periods[30]. This strongly suggests that despite having a complex socio-cultural structure and engaging in extensive production activities, the people at Körtiktepe were still hunter-gatherers. However, while depending solely on wild species, they developed various food processing technologies. In addition to hunting a wide range of wild animals, fishing was a common activity for obtaining protein at Körtiktepe[31]. There is also evidence of weaving and architectural structures at Körtiktepe primarily built for storage of food and wild grains[32].

At least eight distinct architectural and cultural phases were identified from the continuous occupation at the site. The lowest layer, known as phase VIII, represents the cultural sequence of the Terminal Epipalaeolithic/Proto-Neolithic period[33]. The remaining seven phases have been identified as Pre-Pottery Neolithic sequences (PPNA), corresponding to over 1300 years of continuous occupation[34]. Each phase shares common features in terms of house plans but exhibits variations in burial practices and grave goods. The architectural layers at Körtiktepe encompass both the Younger Dryas and the Early Holocene periods. The Younger Dryas constructions are notably more transient in nature compared to their Early Holocene buildings. These buildings lack substantial clay flooring or roofing made of clay. Instead, the presence of postholes suggests the use of organic roofs or tent-like coverings for Younger Dryas buildings[35]. An array of features, including hearths, sequences of cultural strata, deep pits, and small structures, were observed within the Younger Dryas structures. This diversity in spatial utilization hints at a dynamic and multifaceted purpose for these buildings. Notably, these structures underwent frequent renovations and were in use over extended periods of time. Similar small subterranean or semi-sunken huts were discovered in "Phase 0" at Abu Hureyra. The wall construction of the subterranean and semi-sunken Khiamian buildings at Tell Mureybet also closely resembles that of Körtiktepe, albeit on a smaller scale[36].

27 Ibáñez–Stordeur 2008.

28 Willcox 2008, 110.

29 Gourichon–Helmer 2008.

30 Arbuckle–Özkaya 2006; Emra et al. 2022; Özkaya 2009; Rössner et al. 2018.

31 Coşkun et al. 2010; Emra et al. 2022; Koruyucu et al. 2018.

32 Özkaya–Coşkun 2011.

33 Benz et al. 2015.

34 Benz et al. 2012, Benz et al. 2015; Coşkun et al. 2012..

35 Özkaya–Coşkun 2011; Özkaya–Siddiq 2024.

36 Benz et al. 2015.

Table 1. Radiocarbon dates from different occupational layers at Körtiktepe[37].

Lab-Code	Sample ID	Sample type	Trench/ Square	Depth (cm)	^{14}C age BP ± 1σ	δ13C (‰) ± 1σ	cal BC 2σ
MAMS 23135	ZSP, CH 136	Organic material	A154/ B4	–445	10,714 ± 37	–23.9 ± 2	10,765–10,609
ETH 45335	CH 96	*Populus/Salix*, charcoal	A104/ Loc.5-2	–507	10,330 ± 70	–34.1 ± 1.1	10,600–9850
ETH 45336	CH 97	Indeterminate, charcoal	A104; Loc.5-2	–512	10,270 ± 95	–26.1 ± 1.1	10,500–9650
KIA 44648	BP 191-2	*Secale sp.* seed	A 84/ B-C5	–374	10,250 ± 60	–24.37 ± 1.1	10,427–9804
ETH 52348	BP 329, MOL	Polygonaceae seed	A104/ Locus1	–463	10,231 ± 39	–33.2 ± 1.1	10,168–9826
ETH 45334	CH 92	*Populus/Salix*, charcoal	A104/ Locus5	–468	10,205 ± 40	–27.2 ± 1.1	10,120–9800
ETH 45333	CH 85	Indeterminate, charcoal	A104/ Locus 5	–459	10155 ± 50	–23.7 ± 1.1	10,100–9650
MAMS 23130	ZGG, CH 130	*Populus/Salix*, charcoal	A141/ E1	–478	10,205 ± 33	–31.5 ± 2	10,099–9819
ETH 38851	CH 35	*Tamarix*, charcoal	A84/ C5	–227	10,075 ± 40	–25.3 ± 1.1	10,050–9400
ETH 39511	CH 1	*Rhamnus*, charcoal	A80/ C5	–194	10,100 ± 60	–27.6 ± 1.1	10,050–9400
ETH 45344	CH 52	Fragment of bark, charcoal	A80/ C4	–525	10,090 ± 40	–26.4 ± 1.1	10,050–9450
MAMS 23132	VCO, CH 122	*Fraxinus*, charcoal	A21/D3	–440	10,118 ± 31	–22.6 ± 2	10,025–9556
MAMS 23134	ZGF, CH 132	*Populus/Salix*, charcoal	A141/ E1	–350	10,084 ± 35	–30.3 ± 2	10,005–9452
ETH 38849	CH 15	*Quercus*, charcoal	A80/ D5	–218	10,065 ± 40	–25.2 ± 1.1	9870–9400
ETH 45340	CH 51	Indeterminate, charcoal	A80/ C5	–521	10,030 ± 40	–25.1 ± 1.1	9810–9370
ETH 38850	CH 17	*Pistacia*, charcoal	A80/ D5	–238	10,035 ± 40	–25.4 ± 1.1	9810–9380
ETH 38855	CH 41	Indeterminate, charcoal	A84/C5	–285	10,040 ± 40	–24.0 ± 1.1	9810–9390
KIA 44864	BP 191-2	*Secale sp.* seed	A 84	–374	10,030 ± 40	–23.42 ± 0.17	9805–9380
MAMS 23131	ZHI, CH 135	*Populus/Salix*, charcoal	A142/ B1	–377	10,040 ± 35	–28.1 ± 2	9804–9404
ETH 38853	CH 11	*Amygdalus*, charcoal	A80/ C5	–275	10,015 ± 45	–25.1 ± 1.1	9770–9330
ETH 39509	CH 33	*Populus/Salix*, charcoal	A80/ B5	–427	9960 ± 60	–29.9 ± 1.1	9760–9280
ETH 38854	CH 42	*Populus*, charcoal	A84/ C5	–284	10,000 ± 40	–23.5 ± 1.1	9760–9320
MAMS 23133	UEY, CH 111	*Fraxinus*, charcoal	A21/B2	–407	10,020 ± 32	–23.2 ± 2	9757–9377
ETH 38848	CH 29	*Quercus*, charcoal	A80/ C5	–365	9985 ± 40	–25.3 ± 1.1	9740–9310
ETH 38852	CH 28	*Tamarix*, charcoal	A84/ B5	–198	9965 ± 45	–33.0 ± 1.1	9670–9290
ETH 39510	CH 21	*Tamarix*, charcoal	A80/ G5	–207	9925 ± 45	–34.4 ± 1.1	9660–9280
ETH 39512	CH 26	*Tamarix*, charcoal	A80/ C5	–348	9955 ± 45	–28.5 ± 1.1	9660–9290

The Early Holocene buildings can be categorized into three primary groups: dwelling structures, storage facilities, and seemingly public buildings or buildings for special activities[38]. The dwelling buildings were typically circular, single-roomed structures with semi-subterranean features and solid earthen floors. These structures exhibited diameters ranging from 2.3 to 3 meters. The second group consisted of very small rounded structures, with diameters varying between 1.1 and 2.1 meters. Much like the dwelling buildings, these structures featured floors paved with pebbles and were found across all occupation levels. In numerous instances, they were constructed and rebuilt in the same location, remaining unchanged for centuries. While not suited for habitation, these pebble-paved, circular structures were likely employed as

37 *After Benz et al. 2012; Benz et al. 2015; Özkaya–Coşkun 2011.

38 Özkaya–Coşkun 2011.

storage facilities, given the presence of abundant plant remains within them[39]. The third group of structures primarily consisted of three enigmatic, large constructions, featuring diameters ranging from 3.4 to 3.8 meters. Beneath the floors of these buildings, under-floor burials were frequently discovered, often accompanied by animal skulls. These structures have been argued to serve as possible public or specialized buildings within the site[40].

The majority of the chipped stone assemblage comprises flint (52%) and obsidian tools (45%)[41]. Most of the obsidian nodules were brought from Bingöl and Mount Nemrut[42]. In the Younger Dryas phase geometric-type microliths such as trapezes, crescents and triangles comprised the majority, supplemented by a very limited number of non-microlith tools[43]. In the Early Holocene, blades, piercers, scrapers, points, and burins dominated, with a lesser presence of geometric types[44]. Sickle blades only appear in the later phase of occupation, but remained limited to only a few specimens[45]. Archaeobotanical and zooarchaeological evidence points to a subsistence strategy at Körtiktepe based exclusively on hunting, gathering, and fishing[46]. The mode of subsistence in both the Younger Dryas and the Early Holocene was extensive and did not change except for the change in the exploitation of a few particular species[47]. Consequently, it is argued that the chipped stone tools from both the Younger Dryas and the Early Holocene were primarily used for activities related to hunting and gathering.

With about 2,000 single and double burials and 460 architectural remains, Körtiktepe offers an unparalleled scope for studying social formations throughout the Younger Dryas– Early Holocene transition. Approximately 2,000 intramural burials were excavated at Körtiktepe, marking the highest number of human skeletons found in any Pre-Pottery Neolithic settlement to date. More than half of these burials contained various grave goods. All the burials at the site were intramural graves, situated beneath the floors, in proximity to walls, or within open spaces between adjacent houses. The handling of the deceased, evident by extensive cut marks indicating de-fleshing of the corpse, intricate bone painting, the deliberate destruction of valuable burial objects, and the frequent use of gypsum plaster to cover the skeletons, all point to the presence of complex funerary rituals both before and after the interment of the deceased[48].

The site has yielded an exceptionally rich collection of artifacts, boasting the highest number of cultural objects ever recorded at any Pre-Pottery Neolithic site. These finds include over five hundred decorated and non-decorated stone vessels, thousands of chipped stone tools, hundreds of thousands of stone and shell beads, stone axes, thousands of bone tools, a significant number of bone and stone plaques featuring animal depictions, diverse types of household objects, and hundreds of thousands of stone tools, among others. The site contains

39 Özkaya–Coşkun 2011; Özkaya–Siddiq 2024.
40 Özkaya–Coşkun 2011; Özkaya–Siddiq 2024.
41 Kartal et al. 2018.
42 Carter et al. 2013.
43 Kartal et al. 2018, 95.
44 Kartal et al. 2018, 96.
45 Kartal et al. 2018, 95.
46 Emra et al. 2022; Rössner et al. 2018.
47 Emra et al. 2022; Rössner et al. 2018.
48 Erdal 2015; Özkaya–Coşkun 2011; Siddiq et al. 2021.

a significant collection of burial goods adorned with incised animal imagery, hybrid figures, abstract designs, and geometric patterns. This tradition of incorporating symbolic items with such imagery and geometric designs can be traced back to the Younger Dryas period[49]. Cultural items found at the site feature engravings or incisions, predominantly depicting a range of creatures such as wild goats, deer, snakes, scorpions, and various representations of animal-human hybrids. These recurring images are consistently observed on various symbolic items, including stone vessels, stone plaquettes, and bone plaquettes. Notably, stone vessels played a significant role among the ritual items at Körtiktepe, with over 500 of them discovered at the site[50]. Approximately half of these stone vessels were adorned with depictions of animal imagery, geometric designs, or a combination of both. A set of ritual pestles, crafted from the relatively softer chlorite, displayed polished surfaces and showed no traces of use-wear. Their upper ends featured stylized representations of birds of prey or sculptures resembling wild goats [51]. Human and animal-human hybrid imagery was also found on various symbolic items, including vessels and stone plaquettes. Certain archetypal images and ritual items of Körtiktepe, such as bone plaquettes featuring an intriguing scorpion image and stone plaquettes displaying animal-human hybrid imagery, were discovered in subsequent Pre-Pottery Neolithic sites in the Upper Tigris Basin such as Gusir Höyük and Hasankeyf Höyük[52]. However, their presence in these sites was relatively limited, typically consisting of only one or two specimens.

Some Other examples of Early Holocene sedentary life in Upper Mesopotamia

In the Middle Euphrates Basin, Tell Abu Hureyra stands among the most cited Early Holocene sites. It is situated approximately 20 km southeast of Tell Mureybet and, similar to Mureybet, underwent excavation prior to the construction of the Tabqa Dam. The archaeological stratigraphy at Abu Hureyra is believed to span from the later phase of the Late Epipalaeolithic period through the Pre-Pottery Neolithic, up to the introduction of the Pottery Neolithic period[53]. However, compared to the Late Epipalaeolithic cultural phases of Tell Mureybet, Abu Hureyra appears to be relatively younger, as indicated by uncalibrated radiocarbon dates suggesting that the settlement was established shortly before 9100 BC[54]. Despite this, with a history of continuous occupation spanning over three millennia, Tell Abu Hureyra remains a significant site for understanding the process of neolithization in West Asia. The site is particularly valuable for studying changes in housing styles, the exploitation of plants and animals, and the development and use of various technologies throughout the different phases of the Neolithic period from the ninth millennium to the sixth millennium BC[55].

In the Middle Euphrates Basin of Southeastern Türkiye, the PPNA site of Göbeklitepe has garnered global attention for its remarkable massive architecture and its association with animal symbolism. It is located approximately 15 km northeast of Şanlıurfa[56]. The earliest

49 Siddiq et al. 2021.

50 Özkaya–Coşkun 2011; Özkaya–Siddiq 2024.

51 Özkaya–Coşkun 2011; Özkaya–Siddiq 2024.

52 Karul 2020; Miyake 2013.

53 Moore et al. 1975.

54 Moore et al. 1986, 1072.

55 Moore et al. 1975.

56 Schmidt 2010.

occupation at Göbeklitepe dates back to around 9,700 cal BC, and the site appears to have remained active until approximately 8,300 cal BC[57]. Excavations and geophysical surveys have revealed the presence of at least 20 enclosures at Göbeklitepe[58]. These enclosures feature monumental architecture, characterized by large T-shaped pillars. Two even taller central pillars are surrounded by the T-shaped pillars arranged in a circular fashion.

The pillars at Göbeklitepe are adorned with various animal motifs, including foxes, snakes, scorpions, boars, aurochs, gazelles, wild asses, and birds. Some pillars also depict stylized human-like figures with decorated arms and hands[59]. Although some other Neolithic sites in the Upper Euphrates Valley, such as Nevalı Çori, Harbetsuvan Tepesi, Taşlı Tepe, and Sefer Tepe also feature T-shaped stone pillars[60], none of them exhibit the massive scale, enclosures, and extensive number of animal depictions found at Göbeklitepe. As no residential buildings have been discovered from the earlier occupation at Göbeklitepe, it is interpreted as a religious sanctuary or sacred site where symbolic practices took place involving mass gatherings of people from different regions[61]. Therefore, it can be argued that Göbeklitepe served as a regional religious center for diverse groups of people in Upper Mesopotamia for approximately 1,000 years.

Another significant, but slightly younger, Early Holocene site in the Middle Euphrates Basin of Southeast Türkiye is the PPNB Nevalı Çori. Currently submerged by the Atatürk Dam, the earliest occupation at Nevalı Çori likely began during the transition from the Pre-Pottery Neolithic A (PPNA) to the Pre-Pottery Neolithic B (PPNB) around 8,700 BC[62]. The Neolithic occupation at the site continued for approximately a thousand years throughout the PPNB, ending around 7,470 BC[63].

A total of 29 houses have been discovered at Nevalı Çori. However, similar to Göbeklitepe, the site is characterized by three distinct cult buildings that span its occupational levels[64]. These cult buildings feature nearly square plans, plastered interiors coated with a layer of white clay, and black and red paint. Inside the surrounding walls, a quarry-stone bond encircles the interior, large stone slabs are set between them, and approximately 13-15 T-shaped monolithic pillars are erected. Furthermore, two large T-shaped monolithic pillars are placed at the center of these cult buildings. Similar round structures have been documented at other Early Neolithic sites in West Asia, including Tel 'Abr 3, Dja'de el Mughara, Jerf el Ahmar, Mureybet, Nemrik 9, and Qermez Dere[65]. The cult buildings of Nevalı Çori are notable for their rich collection of symbolic artifacts, including human-animal figures and totem poles. They also serve as supporting evidence for the cultic nature of sites like Göbeklitepe.

57 Dietrich et al. 2013.

58 Dietrich et al. 2012.

59 Dietrich et al. 2012; Peters–Schmidt 2004.

60 Çelik 2014.

61 Schmidt 2010.

62 Hauptmann 2011, 103.

63 Hauptmann 2011, 103; Lösch et al. 2006.

64 Hauptmann 2011, 95.

65 Hauptmann 2011, 97.

Jerf el Ahmar, located in the Middle Euphrates region of northern Syria, is another significant site from the Pre-Pottery Neolithic A (PPNA) period. Currently submerged by the Tishrin Dam, Jerf el Ahmar is known for its massive subterranean cult buildings. The earliest occupation at the site began around 9,500 cal BC, and it was likely abandoned around 8700 cal BC[66]. With approximately 11 archaeological levels, Jerf el Ahmar provides valuable insights into various aspects of Early Neolithic village life over a span of about 800 years. Despite its large area of approximately 1,000 square meters, the site has revealed 88 architectural remains, including six communal buildings[67]. This suggests that Jerf el Ahmar was a small to medium-sized settlement. Nonetheless, the site is significant for understanding symbolism and social complexity during the early stages of the Neolithic in West Asia. Interestingly, no human burials or human remains have been discovered at Jerf el Ahmar, except for some ritual sacrifices and dispersed isolated bones found in the backfill. Alongside the remains of subterranean communal buildings, archaeobotanical and zooarchaeological remains, a large number of cultural artifacts associated with animal cults and animal symbolism have been found at the site[68].

The Pre-Pottery Neolithic site of Dja'de el Mughara in the Middle Euphrates plain has also brought attention in regard to understanding the origin of the complex socio-cultural and symbolic practices in Upper Mesopotamia. It is located on the western bank of the Euphrates River, approximately 100 km northeast of Aleppo. The occupation at Dja'de el Mughara began during the final phase of the Pre-Pottery Neolithic A (PPNA) around 9,310 cal BC and the site was eventually abandoned in the later part of the Pre-Pottery Neolithic B (PPNB) period around 8,200 cal BC[69]. The internal organization of this relatively small Neolithic village, covering an area of 1.5 hectares, is characterized by rectangular domestic houses separated by open spaces. Among the significant archaeological findings at Dja'de el Mughara, a communal circular building with wall paintings stands out as particularly interesting. This building provides insights into the communal and possibly ceremonial activities that took place at the site. Additionally, extensive collections of animal bones and tools, a variety of ornaments and figurines made from stone, gypsum, shell, clay, and bone, evidence of feasting, and human burials have been uncovered, offering valuable information about the Pre-Pottery Neolithic period at the site[70].

In the Upper Tigris Basin, the site of Hallan Çemi Tepesi has often been cited for the understanding of the early sedentary life and origin of complex society. The site is located on the west bank of the Sason Çayı in Batman[71]. The sedentary occupation at Hallan Çemi Tepesi began around 9,700 cal BC and continued until around 9,300 cal BC[72]. Although the site is relatively small compared to Körtiktepe or Çayönü, the site exhibits evidence of year-round occupation, suggesting that it was continuously inhabited. The site is notable for its well-preserved floral and faunal remains. It was mainly occupied by hunter-gatherers, and the site's occupation period is relatively short, spanning about 300-400 years[73]. The inhabitants

66 Stordeur 2015.

67 Stordeur 2015, 261.

68 Gourichon 2002; Stordeur 2015.

69 Christidou et al. 2009.

70 Christidou et al. 2009, 321.

71 Rosenberg–Redding 2000.

72 Starkovich–Stiner 2009, 46.

73 Rosenberg–Redding 2000; Starkovich–Stiner 2009.

of Hallan Çemi Tepesi relied heavily on the consumption of almonds, pistachios, and pulses, indicating a significant reliance on plant resources[74]. They also exploited various animal resources such as wild sheep, deer, pigs, and birds[75]. Although the site shows characteristics of community organization, its rather smaller size and limited number of architectural features suggest that it was primarily used by small groups of settled hunter-gatherers.

The site of Çayönü Tepesi, also located in the Upper Tigris Basin, holds the distinction of having the longest archaeological research history in the region. Situated near a small tributary of the Tigris River, about five kilometers from the Taurus Mountains, the site has provided insights into approximately 3,000 years of human occupation, ranging from the Late Pre-Pottery Neolithic A to the early stages of the Pottery Neolithic[76]. The earliest occupations at Çayönü flourished between 9,300-8,700 BC, and the site remained active until around 6300 cal. BC[77]. Çayönü is frequently cited as an example of early village-farming communities that practiced effective food production, particularly during the early phase of the Pre-Pottery Neolithic B. It is recognized as one of the oldest settlements where the remains of domesticated einkorn, emmer, pea, and lentil have been recovered. The site also yielded significant quantities of wild pistachio and wild vetch, indicating a diverse range of plant exploitation[78]. Çayönü is characterized by extensive domestic and wild animal exploitation, as well as a rich array of architectural remains, including cult buildings[79]. The presence of a variety of tools and technologies further suggests the existence of a complex social structure at Çayönü over the course of approximately three millennia.

Hasankeyf Höyük is another noteworthy sedentary PPNA settlement situated in the Upper Tigris Basin. The site's earliest occupation dates back to around 9,600 cal BC, and it remained permanently inhabited until approximately 8,800 cal BC[80]. Located on the left bank of the Tigris River, about 2 km east of the well-known medieval site of Hasankeyf in Batman, Hasankeyf Höyük represents a hunter-gatherer community as there is no evidence of domesticated animals or plants at the site[81]. The surrounding environment of Hasankeyf Höyük, like other parts of the Tigris Valley, provided a diverse range of natural resources. Plant resources such as pistachio, almond, and hackberry were commonly exploited, while hunting activities targeted wild sheep, goats, red deer, boar, and fishing was practiced as well[82]. The site features over 30 round-shaped, stonewalled, subterranean habitation buildings that were discovered throughout the three occupational sequences. Additionally, a large rectangular building at the site is believed to have served communal purposes[83]. With an approximate diameter of 150 meters, it suggests that Hasankeyf Höyük was a medium-sized settlement permanently occupied by local hunter-gatherer groups.

74 Rosenberg–Redding 2000, 42.

75 Starkovich–Stiner 2009; Zeder–Lemoine 2022; Zeder–Spitzer 2016.

76 Braidwood et al. 1971, 1236.

77 Hongo et al. 2009, 65.

78 Van Zeist–de Roller 1992.

79 Hongo et al. 2009; Özdoğan–Özdoğan 1998.

80 Maeda 2018, suplimentary table 1.

81 Miyake et al. 2012.

82 Itahashi et al. 2017; Miyake et al. 2012.

83 Miyake et al. 2012.

In the Middle Tigris Basin, the site of Nemrik 9 is situated near the Zagros foothills in northern Iraq. It is located just 2.5 km from the modern river bed of the Tigris[84]. The earliest occupation at Nemrik dates back to around 8,100 BC, and the settlement remained active for the following two thousand years until approximately 6,500 BC[85]. The architectural remains at Nemrik 9 are characterized by circular and semi-circular subterranean buildings[86]. While the site has only yielded a limited number of human burials, it has produced a rich quantity of material objects, including stone tools, bone tools, and clay and stone animal figurines. Notably, the presence of 20 cm long bird heads at Nemrik 9 brings to mind the abundant stone pestles with animal shapes found at Körtiktepe, although the latter were produced two thousand years prior to the occupations at Nemrik 9. Archaeobotanical data from Nemrik rejects the use of domesticated plants, indicating that agriculture may not have been practiced extensively at the site; however, zooarchaeological data suggests the possible use of four domesticated animals: sheep, goats, pigs, and cattle[87]. This discrepancy is puzzling when considering the contemporary sedentary lifestyle in Upper Mesopotamia during the 9th and 8th millennia BC. Nonetheless, it is generally argued that alongside their hunting-gathering subsistence, the people of Nemrik may have practiced some form of agriculture during the later phases of occupation at the site[88].

Qermez Dere, located near the town of Tell Afar, is another significant early Neolithic settlement site in the Middle Tigris Basin, northern Iraq. It is argued that, together with Nemrik 9, it contributes to the cultural sequence from the end of the Epipalaeolithic to the middle of the 7th millennium BC[89]. Qermez Dere is relatively small, measuring about 100 by 60 meters[90]. The uncalibrated radiocarbon dates suggest that the occupation at Qermez Dere began around 8,195 BC and continued until about 7,630 BC[91]. The archaeobotanical and zooarchaeological data indicate that the people at Qermez Dere did not exploit any domesticated plants or animals, suggesting that they were hunter-gatherers throughout the Pre-Pottery Neolithic period. The inhabitants mainly collected cereals, wild grasses, legumes, and hunted gazelles and various other wild animals[92]. Due to the limited scale of archaeological investigations at the site, only a small number of ornaments have been recorded so far. However, there is a rich assortment of stone tools and stone objects. The use of microlithic tools from the Epipalaeolithic tradition is argued to have been prevalent at Qermez Dere[93]. Of particular interest are the subterranean semi-circular buildings at the site[94]. Argued to be similar to some cultic PPN sites in the Euphrates Basin, such as Nevalı Çori, these buildings feature large stone pillars erected at the center and placed inside the walls[95].

84 Kozlowski 1989, 25.
85 Kozlowski 1989, 25.
86 Kozlowski 1989.
87 Kozlowski 1989, 30.
88 Kozlowski–Kempisty 1990, 348.
89 Watkins et al. 1989.
90 Watkins et al. 1989, 19.
91 Watkins 1995, 55.
92 Watkins 1995; Watkins et al. 1989.
93 Watkins et al. 1989.
94 Watkins 1995, 61–81; Watkins et al. 1989, 20.
95 Watkins 1995.

The Chrono-cultural position of Körtiktepe in early Neolithization process

The transitional period from the Younger Dryas to the Early Holocene has always been understood as a pivotal moment in the emergence of permanently settled communities in Upper Mesopotamia. Following the conclusion of the Epipalaeolithic era, the early sedentary societies in the region have been recognized as creators of profound material cultures, encompassing household and monumental architecture, as well as rich symbolism that often poses challenges for archaeologists in terms of interpretation. However, recent evidence from sites in central and southern parts of Türkiye (such as Pınarbaşı and Direkli) indicates that the mode of hunting-gathering-foraging way of life and the so called "Epipalaeolithic" cultural tradition into the early Holocene[96]. The archaeological assemblages from Direkli cave in Kahramanmaraş suggest that "Epipalaeolithic" foragers regularly migrated and camped in the central Taurus Mountains up until the end of the 10th millennium BC (a contemporaneous time period to PPNA-PPNB transition in the region)[97].

Over the latter half of the last century, the search for the epicenter of the origin of the Neolithic in Upper Mesopotamia primarily focused on two core regions: the Middle Euphrates Basin and the Upper-Middle Tigris Basin[98]. To date, the only sites in the region providing securely-dated evidence of continuous sedentary occupations from the Younger Dryas into the Early Holocene are Tell Qaramel and Tell Mureybet in the Middle Euphrates Basin, and Körtiktepe in the Upper Tigris Basin. During the Epipalaeolithic period in West Asia, people lived in small groups and frequently moved from one location to another in order to access seasonally available natural resources[99]. Towards the end of the Pleistocene, these mobile hunter-gatherers also had contact with other groups in distant areas and began establishing seasonal camps in environmentally rich regions[100]. These traditions of relatively small and short-term camps later may have served as precursors to the permanently occupied villages of the early Neolithic period[101]. When examining early sedentary settlements in Upper Mesopotamia, it becomes evident that some sites exhibiting sedentary occupation during the end of the Pleistocene (the Younger Dryas) actually persisted for over a millennium and multiple generations. For instance, in the Upper Tigris Basin, Körtiktepe was continuously occupied for more than 1,300 years[102]. Similarly, in the Euphrates Basin, both Tell Qaramel and Tell Mureybet were continuously inhabited for over 2,000 years[103].

However, these early sedentary communities were not significantly different from their Epipalaeolithic ancestors, particularly in terms of their subsistence practices. Despite living in permanent villages, they continued to rely on hunting, gathering a wide variety of wild plants, and trapping various animals[104]. In the cases of Körtiktepe and Hasankeyf Höyük, extensive

96 Baird et al. 2013; Erek 2017.

97 Arbuckle–Erek 2012, 695.

98 Benz et al. 2015; Braidwood et al. 1983; Ibáñez–Stordeur 2008; Moore et al. 2000.

99 Olszewski 2018.

100 Arbuckle–Erek 2012; Baird et al. 2013; Erek 2017; Olszewski 2018; Siddiq 2020.

101 Benz et al. 2015; Ibáñez 2008; Mazurowski–Kanjou 2012.

102 Benz et al. 2012; Benz et al. 2015.

103 Chamel et al. 2017, 26; Mazurowski et al. 2009.

104 Emra et al. 2022; Gourichon–Helmer 2008; Mazurowski–Kanjou 2012.

fishing activities were also practiced[105]. These early Pre-Pottery Neolithic communities, though sedentary, retained their hunter-gatherer lifestyle for extended periods. They occupied their settlements for hundreds of years, constructed complex architectural structures, produced a wide variety of material cultures, and engaged in elaborate ritual practices connected to the natural world. Notably, sites such as Tell Qaramel (10,890 cal BC - 8,780 cal BC) and Tell Mureybet (10,400 BC - 8,200 BC) in Northern Syria, as well as Körtiktepe (10,700 cal BC - 9,300 cal BC) in Southeastern Türkiye, represent the earliest examples of sedentary villages in Upper Mesopotamia. These sites thrived during the Younger Dryas period and into the beginning of the Holocene. The transition from the early Pre-Pottery Neolithic to the fully developed Neolithic farming way of life was a gradual process that spanned over 2,000 years. While the shift to increased village life occurred at different times in different regions of West Asia, it is evident that in Upper Mesopotamia these sedentary sites from the Younger Dryas period played a significant role in the development of socio-cultural complexity and symbolism of the Neolithic life.

The early sedentary hunter-gatherers constructed smaller round houses that served as living quarters, cooking spaces, and storage areas[106]. Over time, there was an evolution in architectural styles, possibly associated with community-wide activities and rituals. During the middle of the Pre-Pottery Neolithic A (around 9,700-9,400 BC), certain sites in the Middle Euphrates region, such as Göbeklitepe, Jerf el Ahmar, and Karahantepe, witnessed the construction of massive round communal buildings. These structures, especially those at Göbeklitepe and Karahantepe, were characterized by enormous monolithic pillars and often featured extensive animal imagery. They were closely associated with mass gatherings and communal feasts[107]. Although lacking monolithic pillars, evidence of extensive feasting was also found in the communal buildings at Tell Qaramel, Tell Mureybet and Jerf el Ahmar in the Euphrates Basin, as well as Körtiktepe, Hallan Çemi, Çayönü, Hasankeyf Höyük in the Tigris Basin. In the more distant southern and western regions, complex rituals were also associated with large communal buildings found at Pre-Pottery Neolithic sites such as ʻAin Ghazal and Jericho in the Jordan Valley, Qermez Dere and Jarmo in northern Iraq, and Aşıklı Höyük/Musular in Central Türkiye. These buildings initially served as sanctuaries and catered to the needs of the entire community[108].

Particularly, some Early Holocene sites in Upper Mesopotamia such as Jerf el Ahmar, Göbeklitepe, Karahantepe, Dja'de el Mughara, and Tell ʻAbr 3 display extensive animal symbols[109]. This wide range of animal imagery appears to have evolved or been heavily influenced by the animal symbolism found at some of the earliest Pre-Pottery Neolithic sites, including Tell Qaramel, Tell Mureybet, and particularly Körtiktepe[110]. It is especially noteworthy that Körtiktepe-type stone vessels, stone and bone plaquettes, as well as various other material objects such as shaft-straighteners, often depict viper snakes, scorpions, tortoises, birds, wild mammals, human-animal hybrid figures, wild plants, and various geometric motifs

105 Emra et al. 2022; Itahashi et al. 2017.

106 Ibáñez–Stordeur 2008; Mazurowski–Kanjou 2012; Miyake et al. 2012; Özkaya–Coşkun 2011.

107 Dietrich et al. 2012; Karul 2021.

108 Bar–Yosef 1986; Braidwood et al. 1983, 427–429; Özbaşaran et al. 2012; Rollefson 1983.

109 Coqueugniot 2000; Karul 2021; Peters–Schmidt 2004; Stordeur 2015; Yartah 2005.

110 Ibáñez–Stordeur 2008; Mazurowski–Kanjou 2012; Özkaya–Coşkun 2011.

are widely found among the ritual objects, material cultures, and architectural remains of many significant sites, including Hallan Çemi, Hasankeyf Höyük, Gusir Höyük, Çayönü, Jerf el Ahmar, Göbeklitepe, Dja'de el Mughara, Tell Abu Hureyra, 'Ain Ghazal, Nevalı Çori, Nemrik 9, and Qermez Dere. These settlements flourished between 500 to 1,500 years after the peak cultural development at Körtiktepe (Table 2).

The burials in these early Neolithic settlements provide valuable insights into the rituals, rites, and symbolism of the period. Many burials were placed inside and around the houses of the living, possibly indicating a desire to keep the deceased within the community. The funerary practices varied widely, including primary burials of single or two individuals, secondary burials without the skull, or group burials of skulls or skeletons. Charnel houses for the dead were also identified, such as those found at Abu Hureyra, Dja'de el Mughara, or the "skull building" at Çayönü[111]. Among these sites, Körtiktepe stands out for its abundance of burial goods, making it one of the most significant burial sites in the Neolithic world. Körtiktepe has yielded approximately 2,000 single and double burials, with over half of them contained painted human skeletons accompanied by rich grave inventories including beads, stone and bone plaquettes, and stone vessels.

In summary, the development of the Neolithic period in West Asia can be characterized by gradual advancements in architecture, communal buildings, burial customs, rituals, and symbolism, as well as the exchange of material culture. This cultural process involved numerous interacting and culturally interconnected communities across the region. Inter-regional contact and cultural exchange were already present during the Epipalaeolithic period, laying the foundation for further development during the Neolithic[112]. Throughout the Neolithic, inter-communal communication and the exchange of material culture played a crucial role in reinforcing the use of similar symbolic knowledge, architectural techniques, technologies, and the introduction of new subsistence strategies in core cultural regions of West Asia. The complex socio-cultural and symbolic systems developed over a span of at least three millennia, from the early PPNA to the flourishing of the Pottery Neolithic. While specific localities and ecological niches influenced the development of Neolithic cultures in individual sites over many centuries and generations, the analysis of material cultures over time reveals that certain long-lived and large early PPNA sites acted as centers for the flourishing of cultural and ritual trends, with smaller and younger sites following these mainstream trends. Among these sites, Körtiktepe stands out as a mega-center that influenced cultural trends throughout the evolution of the Neolithic in Upper Mesopotamia. With its extensive occupational area, large community gatherings, and production of rich archetypal material cultures, Körtiktepe played a significant role in the emergence and evolution of various technologies, imagery, rituals, and symbolism. Many of these trends first appeared at Körtiktepe and then flourished and evolved into their distinctive forms within a relatively short span of a millennium.

111 Coqueugniot 2000; Moore et al. 1975; Özdoğan–Özdoğan 1998.

112 Baird et al., 2013; Olszewski 2018; Siddiq 2020.

Table 2. Chronological position of some notable Early Neolithic sites in West Asia.

Site	Location	Early occupation	References
Tell Qaramel	Northern Syria	10,800 cal BC	Mazurowski et al. 2009
Körtiktepe	Southeastern Türkiye	10,700 cal BC	Benz et al. 2015
Tell Mureybet	Northern Syria	10,400 BC	Chamel et al. 2017
Pınarbaşı	Central Türkiye	9,800 cal BC	Baird et al. 2018
Göbeklitepe	Southeastern Türkiye	9,700 cal BC	Dietrich et al., 2013
Hallan Çemi	Southeastern Türkiye	9,700 cal BC	Starkovich - Stiner 2009
Hasankeyf Höyük	Southeastern Türkiye	9,600 cal BC	Maeda 2018
Jerf el Ahmar	Northern Syria	9,500 cal BC	Stordeur 2015
Dja'de el Mughara	Northern Syria	9,310 cal BC	Christidou et al. 2009
Çayönü	Southeastern Türkiye	9,300 cal BC	Hongo et al. 2009
Jarmo	Northeast Iraq	9290 BC	Braidwood et al. 1983
Tell Abu Hureyra	Northern Syria	c. 9,100 BC	Moore et al. 1986
Nevalı Çori	Southeastern Türkiye	8,700 cal BC	Lösch et al. 2006
'Ain Ghazal	Jordan	8,500 BC	Rollefson - Kafai 2013
Jericho / Tell Es-Sultan	Palestinian	c. 8,400 BC	Kenyon 1981
Aşıklı Höyük	Central Türkiye	8,400 cal BC	Quade et al. 2018
Qermez Dere	Northern Iraq	c. 8,200 BC	Watkins et al. 1989

Conclusion

The excavation of Körtiktepe has provided an exceptional opportunity to address several key scientific questions in the prehistoric archaeology of West Asia. There are at least three main reasons for this significance. First, Körtiktepe has yielded a long and well-preserved sequence of sedentary hunter-gatherer occupation spanning more than 1,300 years, from a Younger Dryas village to an unusually productive and complex Early Holocene cultural mega-center. Second, the site's abundant assemblages of animal bones and plant remains offer unparalleled potential to examine in detail the subsistence shifts and human adaptive strategies during the climatic transition from the Younger Dryas to the Early Holocene. Third, the extraordinary richness of archetypal artifacts, diverse cultural materials, and numerous human burials -many furnished with lavish grave goods and decorated skeletons- makes Körtiktepe the richest known Neolithic site to date. Collectively, these findings are of great significance for understanding the site's functionality, social organization, and its role in the origins and dissemination of Neolithic culture across the region during the 11th and 10th millennia BC.

It is beyond question that Körtiktepe played a pivotal role as one of the few Younger Dryas sites in Upper Mesopotamia, serving as a major cultural hub in the emergence of the Neolithic in West Asia. Chronologically, it is the only site in the Upper Tigris Basin that provides securely dated evidence of sedentary occupation during the Younger Dryas. The site's distinctive

repertoire of archetypal artifacts -such as decorated stone vessels, engraved stone and bone plaquettes, and striking animal imagery (including raptors, hybrid creatures, and depictions of scorpions, snakes, and spiders)- demonstrates its profound influence on the material cultures of subsequent Pre-Pottery Neolithic sites such Hallan Çemi, Hasankeyf Höyük, Çayönü, Gusir Höyük, Gre Fılla Höyük, and Demirköy Höyük in the Upper Tigris Basin, as well as Nemrik 9 and Qermez Dere in the Middle Tigris Basin. Shared cultural elements, such as similarly decorated shaft-straighteners and parallel motifs, further suggest active interaction between Körtiktepe and other sedentary hunter-gatherer communities, notably at Tell Qaramel and Tell Mureybet. It is likely that Körtiktepe, together with these sites, exerted a formative influence on the development of material culture and symbolic expression at later PPNA sites, including Göbeklitepe, Karahantepe, Jerf el Ahmar, Dja'de el Mughara, and Tell Abu Hureyra in the Middle Euphrates Basin.

Writer Contributions/Yazar Katkıları

Planning of the Study/Çalışmanın Tasarlanması	Author/Yazar-1 (%50) - Author/Yazar-2 (%50)
Collecting Data/Veri Toplanması	Author/Yazar-1 (%50) - Author/Yazar-2 (%50)
Data Analysis/Veri Analizi	Author/Yazar-1 (%50) - Author/Yazar-2 (%50)
Writing the Article/Makalenin Yazımı	Author/Yazar-1 (%50) - Author/Yazar-2 (%50)
Submission of the Article and Revisions/ Makale Gönderimi ve Revizyonu	Author/Yazar-1 (%50) - Author/Yazar-2 (%50)

The Author(s) declare(s) that there is no conflict of interest./Çıkar çatışması beyan edilmemiştir.

ETHICAL STATEMENT/ETİK BEYAN

It is declared that scientific and ethical principles were complied with during the preparation of this study and all the works referred are mentioned in the bibliography./Bu çalışmanın hazırlanma sürecinde bilimsel ve etik ilkelere uyulduğu ve yararlanılan tüm çalışmaların kaynakçada belirtildiği beyan olunur.

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