

A heart-shaped bone artifact from Körtiktepe

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Abstract

Along with the emergence of sedentary life, the Pre-Pottery Neolithic (PPN) settlements brought revolutionary changes in production of material cultures as well as cultic and ritual activities, which are often argued to be associated with new waves of interactions between humans and their natural world. Körtiktepe of southeastern Turkey yielded by far the richest PPN assemblage in the world, standing among the very few earliest cultural and production centers which acted to be the predecessors of the development and spread of the Neolithic in West Asia. In this paper, we report a heart-shaped bone artifact which is one of the rarest finds in the extremely large cultural assemblage of Körtiktepe. The manufacture features indicate that the “heart-like” shape of this unique artifact was the product of intentional human activity. Overall archaeological context indicates its probable use as a bone pendant or amulet for the dead; providing the fact of its association with three early PPNA burials, many other ritual objects, and a large number of grave goods. Although difficult to argue for its association with the sense for “emotion”, “affection” or “love” in the present world, it is still significant that the unique specimen traces the symbolic presence and ritual use of the shape of a “heart” in West Asian prehistoric context back to the Early Pre-Pottery Neolithic of around 10000 cal BC.

Key Words: Heart-shaped artifact, bone pendant, PPNA, Körtiktepe, Southeast Anatolia

Introduction

The Pre-Pottery Neolithic (PPN), which was started around the 10th millennium BC, represents the transition from foraging to sedentary lifestyle in West Asia. Still dependent on hunting and gathering subsistence, the very new PPN sedentary people group started a process that had brought radical changes in basic socio-cultural aspects including social organization, production of material cultures and symbolic activities. This new way of cultic, ritual and symbolic behaviors were associated with corporate social groups such as lineages, solidarities, age groups and networks, which were often reflected in large scale in-site burials and communal structures unearthed at several PPN sites

Körtiktepe’den kalp biçimli kemik bir buluntu

Öz

Yerleşik hayata geçiş beraberinde Çanak Çömleksiz Neolitik Dönem (PPN) yerleşimlerde maddi kültür değerlerin üretiminde olduğu gibi, insan ve doğa arasındaki yeni etkileşim algılamalarıyla ilişkili olduğu iddia edilen yeni kültürel, ritüel ve sembolik faaliyetler konusunda da devrim niteliğinde değişimleri gündeme getirmiştir. Güneydoğu Anadolu Bölgesi’nde yer alan ve dünyanın en zengin PPN maddi kültür değerlerine sahip olan Körtiktepe, bu özelliğiyle Batı Asya Neolitik’inin gelişmesi ve yayılmasının öncüsü sayılan çok az sayıda erken kültür ve üretim merkezleri arasında yer almaktadır. Bu makalede, Körtiktepe’den ortaya çıkarılan son derece büyük rakamlı buluntu topluluğu arasında tek bir örnek olarak bulunan kalp şeklinde bir kemik objeyi sunulmuştur. Morfolojisi, üretim ayrıntıları, olası kullanımı ve genel arkeolojik değerlendirmeler sonucu elde edilen ilk gözlem, kalp biçimli bu eşsiz eserin bilinçli bir şekilde işlendiği ve muhtemelen ölü ritüelde kemik kolye ya da amulet (muska) olarak kullanılmış olabileceğini düşündürmektedir. Zengin ölü bediyeleri içeren üç PPN mezarla beraber ortaya çıkarıldığı bir arkeolojik bağlamında bulunmuş olmasına rağmen, söz konusu kalp biçimli bulgunun günümüzde temsil ettiği “duygu”, “sevgi” veya “aşk” kavramlarıyla ilişkili olup olmadığını tartışmak son derece zordur. Fakat bu eşsiz buluntunun, Batı Asya tarihöncesinde kalp biçiminin varlığını ve ritüel kullanımını MÖ 10. binyıllara dayanan Erken Çanak Çömleksiz Neolitik Dönem’e kadar taşınması büyük önem arz etmektedir.

Anahtar Sözcükler: Kalp biçimli buluntu, kemik kolye, PPNA, Körtiktepe, Güneydoğu Anadolu

in the Upper Mesopotamia (e.g. Özdoğan & Özdoğan, 1998, Miyake *et al.*, 2012; Schmidt, 2012; Stordeur, 2015; Kodaş, 2019). Concentrations of material culture of a distinctive symbolic nature such as humanoid reliefs and sculptures, animated stone pillars, animal bones with ritual imagery, painted skulls and skeletons, engraved stones and a variety of artifacts including stone bowls, stone tools, beads were widely found in these sites and often associated with ritual structures, mortuary practices and feasting rites (Siddiq, 2019). For this reason, these sites have been interpreted as foci of symbolism in the origin and development of the Neolithic.

Promoted by the unprecedented mix of ecological,

socioeconomic and cultural developments, rapid increase in production activities of different material cultures were also a reality in PPN settlements (e.g. Moore *et al.*, 1975; Braidwood *et al.*, 1983; Watkins *et al.*, 1989; Kozłowski, 1989, 2002; Mazurowski & Jamous, 2001; Bar-Yosef & Ibanez, 2009; Özkaya & Coşkun, 2009; Mazurowski, 2012; Schmidt, 2012; Rollefson & Kafafi, 2013; Schmandt-Besserat, 2013; Stordeur, 2015; Baird *et al.*, 2018; Maeda, 2018; Özbaşaran *et al.*, 2018; Kodaş, 2019). As mentioned above, together with a diverse type of tools and technologies for subsistence and daily household activities, these early settled hunter-gatherers were also heavily engaged with the production of symbolic and ritual objects including figurines, statues, animal figurines, figurative stone objects, painted or figurative bone plaques and plaquettes, stone vases, beads and amulets (Moore *et al.*, 1975; Braidwood *et al.*, 1983; Watkins *et al.*, 1989; Kozłowski, 1989; Özkaya, 2009; Özkaya & Coşkun, 2009; Mazurowski, 2012; Schmidt, 2012; Stordeur, 2015; Baird *et al.*, 2018). Here, it is significant to note that animal bone was one of the most commonly found assemblages recorded from these PPN centers (Siddiq, 2019). Like lithics, bone tools and worked bones too exhibit strong variations in terms of raw materials and production techniques.

On the other hand, although not completely absent, heart shape artifacts have been one of the rarest types in prehistoric assemblages of any geographical region. Today, the heart-like shape is an ideograph used to express the idea of ‘human heart’, in a metaphorical sense as the center of emotion and love. However, by far no direct evidence of such symbolic application of heart-shaped objects was recorded from any prehistoric context. While looking at the prehistoric records of West Asia, it is observed that only a few Neolithic sites including Tell Halula, Abu Hureyra and Çatalhöyük yielded a very few heart-like or semi-heart shaped stone beads (Bains, 2012; Alarashi, 2016). However, by far, heart-like or heart-shaped bone artifact has not yet been reported from any Neolithic settlement in West Asia.

Here, we report a bone-made artifact from Körtiktepe, a well representation of a complete shape of metaphoric “heart”. The artifact was recorded in 2008 excavation (Özkaya *et al.*, 2010), from the Phase III-IV dated between 10050-9390 BC (Benz *et al.*, 2012). Our initial observations on the morphology, manufacture and probable use indicate that the heart-shaped object was probably used as a pendant or amulet for the dead. With its comprehensive archaeological context, we overall attempted to trace its cultural and probable symbolic/ritual facts association. We also argue the manufacturing behavior of the maker and the simplicity of raw material use, but with a very deep sense of protective power of such easy-accessed bone. Although

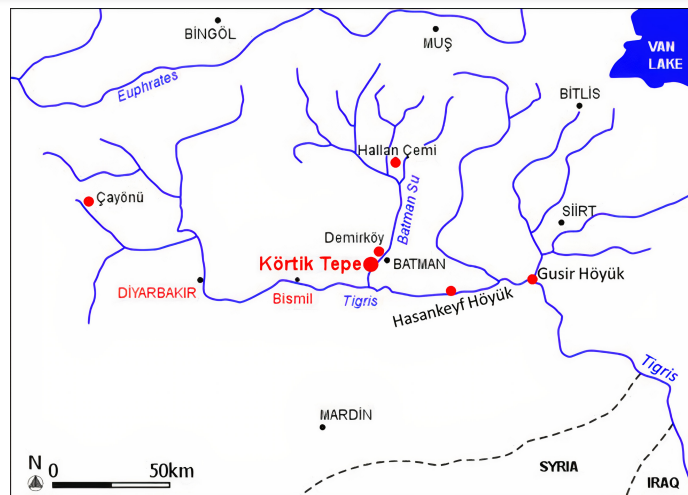


Figure 1. Map showing the location of Körtiktepe and successor PPN sites in the Upper Tigris Basin. Map by the authors.

Körtiktepe yielded large assemblages of bone tools, worked bones, bone plaques and plaquettes, the “heart-shaped” bone object has been the unique example of its kind. With its perfect symmetrical morphology, it traces archaeological record of a symbolic use of the shape of a “heart” in West Asian prehistoric context back to the early phase of PPNA of around 10000 cal BC.

Körtiktepe and its material cultures

The PPNA site of Körtiktepe is located in the Upper Tigris Basin of present-day Bismil district of Diyarbakir province, Southeast Turkey (Figure 1). The sedentary occupation at Körtiktepe began in the later phase of Epipalaeolithic in around 10400 cal BC (Benz *et al.*, 2012, 2013, 2017). The busy occupation remained active over 1000 years, throughout much of the early phase of Pre-Pottery Neolithic A (PPNA). As a significant part of the salvage excavation program within the scope of the Ilisu Barrage Project, the archaeological excavations at Körtiktepe carried out between 2000 and 2018, under the direction of Vecihi Özkaya of Dicle University, Diyarbakir (Özkaya, 2004, 2009; Özkaya & Şahin, 2019). A total of 17 successful excavation sessions at Körtiktepe (Özkaya & San, 2002, 2003; Özkaya, 2004, 2007; Özkaya *et al.*, 2008, 2009, 2010, 2012, 2016, 2017; Özkaya & Coşkun, 2011; Benz *et al.*, 2013; Özkaya & Şahin, 2018, 2019) placed the site so far one of the richest PPN settlements in West Asia yielding about 2000 single and double burials along with about 460 architectural remains (Benz *et al.*, 2011; Özkaya & Coşkun, 2011; Özkaya & Şahin, 2019).

A total of eight distinct architectural and cultural phases have been determined in the continuous occupational sequences at Körtiktepe. Among them, the earliest occupation (Phase VIII) was marked with the remains of a multi-layered Late Epipalaeolithic building (Benz *et al.*, 2013, 2017). The other seven phases were

identified as the Pre-Pottery Neolithic A, continued for about a thousand years (Benz *et al.*, 2011, 2012). Each phase includes common features in terms of house plans but reflects differences in burial practices and grave goods (Özkaya & Coşkun, 2011).

The site was occupied throughout the Younger Dryas and the Early Holocene, in a time of fundamental changes in the interactions between humans and the natural world. Although completely dependent on wild natural resource, unlike their predecessors, the Körtik people were highly involved in intensive manufacturing work; so far one of the richest cultural assemblages yielded at any Pre-Pottery Neolithic site. The most notable finds of the material cultures recorded comprised of over five hundreds stone vessels, a large number of stone vessels with depiction of animals, plant and different geometric imageries, a large number of stone scepters, hundred thousands of flint and obsidian tools, hundreds of ground stone tools, thousands of stone and shell beads, a variety of household objects, over two thousand bone tools, and over two hundred bone and stone plaque and plaquettes with figurative and geometric depictions (Özkaya, 2004, 2009; Özkaya & Coşkun, 2011; Özkaya & Şahin, 2018, 2019; Özkaya *et al.*, 2008, 2009, 2010, 2012, 2016, 2017). All these artifacts are currently housed and under the protection of Diyarbakır Archaeological Museum. The detailed reporting and publication process of these materials is ongoing.

Aside from such profuse material cultures, Körtiktepe particularly yielded some of the earliest examples of animal symbolism which were later appeared in many other PPN sites across Mesopotamia. These include the depictions of dangerous animals such as viper (snake), scorpion, wasp, large spider as well as ungulate and carnivore mammals on stone vessels, stone plaquettes and bone plaquettes. Examples of presenting animal-headed scepters and special types of animal imagery and special type of bone objects (e.g., tortoise shell) were also used as grave goods in significant numbers. When compared with earlier sedentary sites such as Tell Qaramel (Mazurowski & Jamous, 2001; Mazurowski, 2012) and contemporary PPNA sites such as Tell Mureybet (Bar-Yosef & Ibanez, 2009) and Boncuklu Tarla (Kodaş, 2019), the production rate and density of such symbolic objects appeared to be much richer and much greater at Körtiktepe.

Together with extensive manufacture products, particularly the characteristic symbolic artifacts at Körtiktepe are so influential that many of them appeared to be the predecessors of animal symbolism in West Asian Neolithic. For example, Körtiktepe type trademark animated stone vessels and bows, animated shaft straighteners, animated stone and bone plaquettes,

and stone scepters were recorded from contemporary and successor PPN sites in the Tigris Basin including Boncuklu Tarla (10471 cal BC), Hallan Çemi (9700 cal BC), Hasankeyf Höyük (9600 cal BC), Çayönü (9300 cal BC), Qermez Dere (c. 8195 BC), Nemrik 9 (8150 BC) and Gusir Höyük (7975 BC) (Kozłowski, 1989, 2002; Watkins *et al.*, 1989; Özdoğan & Özdoğan, 1998; Rosenberg & Redding, 2000; Starkovich & Stiner, 2009; Karul, 2011; Miyake *et al.*, 2012; Kodaş, 2019). Moreover, these sites yielded comparatively a lower number of hallmark artifacts to Körtiktepe. The excavations at some PPN sites of the Euphrates Basin such as Göbeklitepe (9745 cal BC), Jerf-el-Ahmar (9500 cal BC), Dja'de el Mughara (9310 cal BC), Tell Abu Hureyra (c. 9100 BC), and Nevalı Çori (8720 cal BC) also yielded Körtiktepe type symbolic assemblages (Moore *et al.*, 1975; Christidou *et al.*, 2009; Hauptmann, 2011; Dietrich *et al.*, 2012; Schmidt, 2012; Stordeur, 2015), but they too did not present as richer hallmark artifacts as the ones recorded from Körtiktepe.

Comparing and analyzing the chronometric dates (Table 1) and richness of cultural assemblages among the notable earliest Neolithic sites, Körtiktepe assemblage appears to stand among the trademark type artifacts which heavily influenced the Neolithic tradition across the region. Overall, the site provides one of the oldest Neolithic records in Anatolia as well as one of the earliest permanent village settlements in West Asia. It is also arguable that the site was one of the very few earliest PPN centers that heavily influenced the tradition of material culture, complex rituals, cultic activities, and animal-based symbolic activities in Neolithic West Asia. Considering the cultural and chronological position, it is apparent that Körtiktepe had significant influence on contemporary and successor PPN sites in the Upper Tigris Basin including Hallan Çemi (Rosenberg & Redding, 2000), Boncuklu Tarla (Kodaş, 2019), Çayönü (Özdoğan & Özdoğan, 1998; Schmidt, 2012), Hasankeyf Höyük (Miyake *et al.*, 2012), Demirköy Höyük (Rosenberg, 2007), and Gusir Höyük (Karul, 2011). Its influence is also visible in the flourish of the material culture and symbolism at PPN centers across the Euphrates Basin including Göbeklitepe (Schmidt, 2012), Jerf-el-Ahmar (Stordeur, 2015), Dja'de el Mughara (Christidou *et al.*, 2009; Kozłowski 2002: 77-80), Tell Abu Hureyra (Moore *et al.*, 1975) and Nevalı Çori (Hauptmann, 2011), as well as some of the notable PPN sites in the Middle Tigris Basin including Nemrik 9 (Kozłowski, 1989, 2002) and Qermez Dere (Watkins *et al.*, 1989).

The heart-shaped artifact

The heart-shaped bone object was recorded at a spatial context between the three burials, respectively M18,

Table 1. Earliest sedentary occupation at some notable PPN sites in West Asia

Site	Location	Earliest sedentary occupation	Reference
Tell Qaramel	Northern Syria (Central Fertile Crescent)	10890 cal BC	Mazurowski <i>et al.</i> , 2009
Körtiktepe	Southeast Turkey (Central Fertile Crescent)	10405 cal BC	Özkaya, 2009; Benz <i>et al.</i> , 2012
Tell Mureybet	Northern Syria (Central Fertile Crescent)	10400 un cal BC	Bar-Yosef & Ibanez, 2009; Chamel <i>et al.</i> , 2017
Boncuklu Tarla	Southeast Turkey (Central Fertile Crescent)	10375 cal BC	Kodaş, 2019
Hallan Çemi	Southeast Turkey (Central Fertile Crescent)	10010 cal BC	Rosenberg & Redding, 2000; Starkovich & Stiner, 2009
Pınarbaşı	Central Turkey (Western Fertile Crescent)	9800 cal BC	Baird <i>et al.</i> , 2018
Göbeklitepe	Southeast Turkey (Central Fertile Crescent)	9745 cal BC	Schmidt, 2012; Dietrich <i>et al.</i> , 2013
Hasankeyf Höyük	Southeast Turkey (Central Fertile Crescent)	9600 cal BC	Miyake <i>et al.</i> , 2012; Maeda, 2018
Jerf-el-Ahmar	Northern Syria (Central Fertile Crescent)	9500 cal BC	Stordeur, 2015
Dja'de el Mughara	Northern Syria (Central Fertile Crescent)	9310 cal BC	Christidou, 2009
Çayönü	Southeast Turkey (Central Fertile Crescent)	9300 cal BC	Özdoğan & Özdoğan, 1998; Hongo <i>et al.</i> , 2009
Jarmo	Northeast Iraq (Southeastern Fertile Crescent)	9290 BC	Braidwood, 1983
Tell Abu Hureyra	Northern Syria (Central Fertile Crescent)	c. 9100 BC	Moore <i>et al.</i> , 1975; Moore <i>et al.</i> , 1986
'Ain Ghazal	Jordan (Southwestern Fertile Crescent)	8500 BC	Rollefson & Kafafi, 2013; Schmandt-Besserat, 2013
Nevalı Çori	Southeast Turkey (Central Fertile Crescent)	8720 cal BC	Lösch <i>et al.</i> , 2006; Hauptmann, 2011
Jericho / Tell Es-Sultan	Palestinian (Southwestern Fertile Crescent)	c. 8350 BC	Kenyon, 1981
Aşıklı Höyük	Central Turkey (Western Fertile Crescent)	8450 cal BC	Özbaşaran <i>et al.</i> , 2018; Quade <i>et al.</i> , 2018
Qermez Dere	Northern Iraq (Eastern Fertile Crescent)	c. 8195 BC	Watkins <i>et al.</i> , 1989
Nemrik 9	Northern Iraq (Eastern Fertile Crescent)	8150 BC	Kozłowski, 1989
Demirköy	Southeast Turkey (Central Fertile Crescent)	8000 BC	Rosenberg, 2007
Gusir Höyük	Southeast Turkey (Central Fertile Crescent)	7975 BC	Karul, 2011

M17 and M19, at the lowest cultural layer of the Trench A60 (Table 2). At a depth between -252 and -257 cm, the artifact belonged to an early phase of Pre-Pottery Neolithic A (PPNA), dated between 10,050 and 9330 cal BC (Benz *et al.*, 2012). With a measurement of 2.8 cm in length, 4.1 cm in width, and 0.5 cm in thickness (2.8×4.1×0.5cm), this was relatively a medium to small singular type artifact (Figure 2).

Both surfaces of the artifact remained in their original form without having any polishing or grinding. However, very sharp cut and polishing was observed all over its posterior edge. Since use of metal was impossible in that time, it is likely that the object was cut by using obsidian like sharp stone tool. Two attempted perforations were observed at the top end, near the

middle curve (Figure 2: white arrows). The attempted perforations were possibly for suspension, common in other bone plaquettes type burial goods, suggesting the artifact was intended to be used as a symbolic pendant for the deceased.

Following the wavy curve at the top, with the left rounded top slightly higher, both sides followed almost a long symmetrical cut until they met at their pointy underside tip (Figure 2: yellow arrows). The wonderful symmetrical carvings strongly suggest that the creator of this artifact intentionally followed its natural morphological shape of a 'heart' while cutting through the edge. Except for the wonderful curving, symmetric shaping and polishing, a fine layer of gypsum plaster was also present all over the surface, further suggesting

Table 2. Detailed catalogue of the heart-shaped artifact of Körtiktepe

Artifact accession number	KTK'08 KE-221 EUY
Raw material	Animal bone
Measurement	2.8×4.1×0.5cm
Trench	A60
Depth	– 252 cm
Phase	III/IV
Spatial context	Within a triangular position between the burial M18, M17 and M19
Period	Early PPNA
Dating	10050–9330 cal BC
Artifact type	Bone pendant (?) with a coverage of gypsum plaster
Function	Ritual object
Associate artifact	Bone, flint and obsidian artifacts

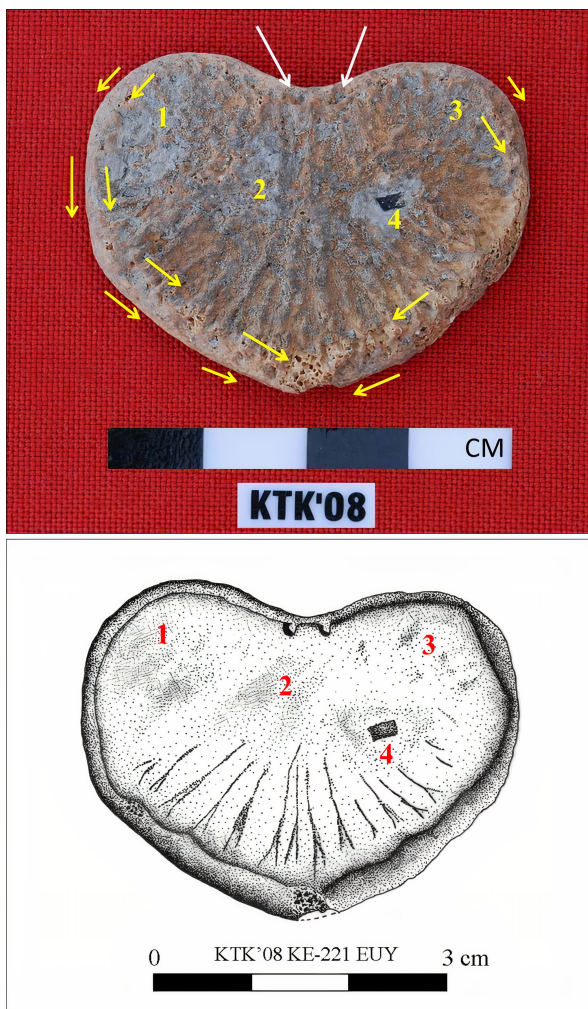


Figure 2. The heart-shaped artifact of Körtiktepe. **1-3:** showing the gypsum coverage. **4:** showing the tiny obsidian piece attached in the gypsum coverage; two white arrows are indicating very initial attempt of perforations; the yellow colored arrows are showing deep angular cut, polishing and intentional modification in between. Photograph by V. Özkaya from KT Archive.

its use as a burial gift (Figure 2: 1-3). A small piece of broken obsidian was attached into the gypsum plaster, onto the right middle location, perhaps joined together through the buried condition over millennia (Figure 2: 4).

Epiphysis of the vertebral body of possibly a large ungulate vertebra was used as raw material of this artifact. Providing the fact that epiphyses of the vertebral body of different mammal species often can have a heart-like shape, it is possible that the tool maker followed the natural morphology while cutting its edge of the artifact. Particularly, the overall feature of the heart-shaped object shows strong resemblance with the lumbar vertebrae of a large bovine, including *Bos* sp. (Figure 3). All ungulate species exploited at Körtiktepe were wild (Arbuckle & Özkaya, 2006). Therefore, it is arguable that the maker perhaps used the epiphysis of the vertebral body of any of the first five lumbar vertebrae (LM1-LM5) of a young aurochs (*Bos primigenius*), providing the fact that the bone was in unfused condition when taken in manufacturing process.

However, while closely observed and compared the artifact with a naturally shed unfused epiphysis of the vertebral body, it was clearly visible that the heart-shaped object was intentionally cut and polished along with its edge (Figure 4). While the naturally shed bone has an extra border with irregular and uneven margin (Figure 4: A4); the extra border of the Körtiktepe artifact was sharply cut (Figure 4: B4) and polished by following a smooth and fine sharp line along with its edge (Figure 4: B1-B3). This, along with its status of a burial object, further strongly clarifies its status to be a purposefully produced artifact.

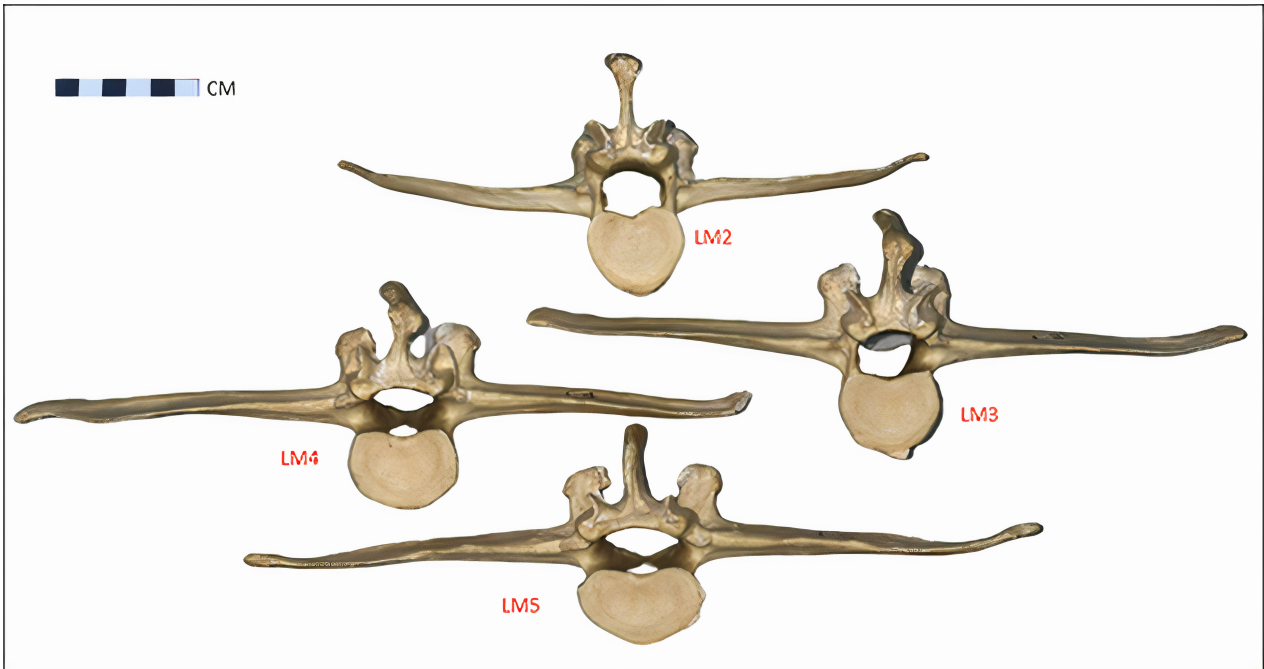


Figure 3. Cranial views of the epiphysis of the vertebral body of cattle (*Bos sp.*) lumbar vertebrae. Photograph by A. B. Siddiq.

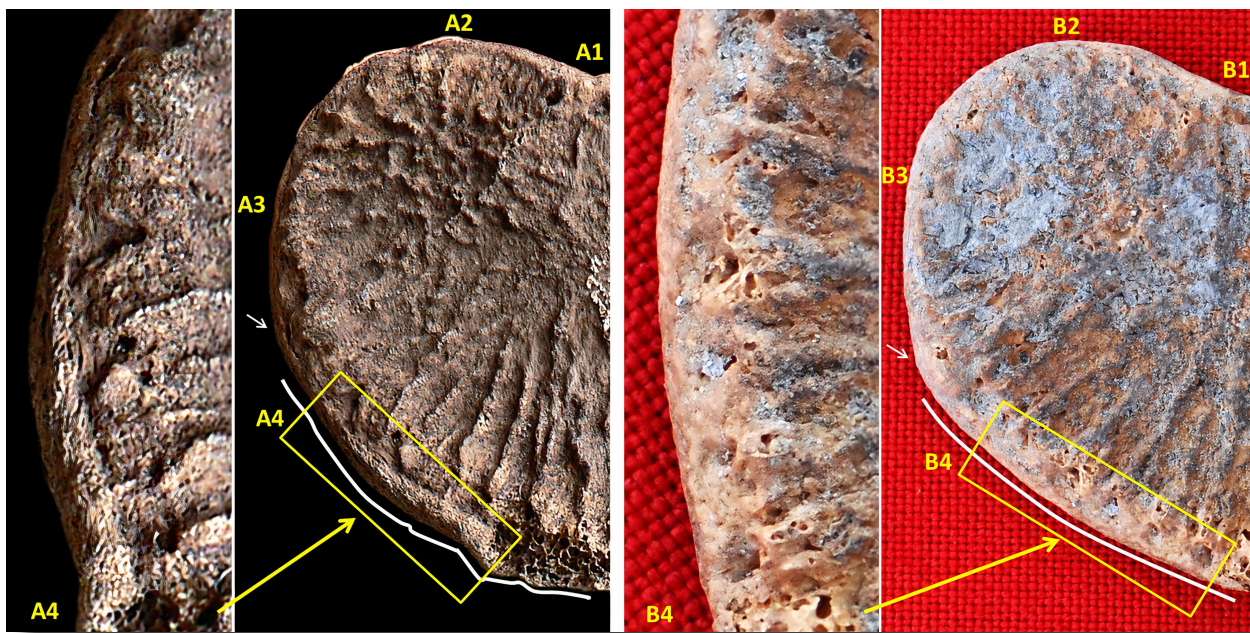


Figure 4. Close outlook of a naturally shed unfused epiphysis of the vertebral body and the heart-shaped artifact of Körtiktepe. **A1-A3:** the extra border and uneven edge in the naturally shed epiphysis. **B1-B3:** extra border of the artifact was cut, the edge was polished and smoothen. **A4:** the coarse and extra rounded border in the naturally shed epiphysis. **B4:** the thick rounded border was sharply cut by following a long parallel line; white arrow indicates the starting point of the long sharp cut. Photograph by D. Bennett & A.B. Siddiq).

Archaeological context

When compared in terms of material cultures including grave goods at Körtiktepe, the western area of the site yielded richer assemblage than the eastern area. Yet, one of the trenches offered the opportunity to perceive a holistic cultural characteristic of Körtiktepe was the Trench A60, located in the eastern area (Figure 5). Together with a greater number of common artifacts, the majority of the finds in the Trench A60 were grave goods. The PPNA cultural layers in the trench appeared

from a depth of -93 cm and continued down to -334 cm, until reaching the parent soil. The Trench covered an area of 5.00×5.00 m and yielded a very rich PPNA assemblage; primarily consisting of burials, grave goods, personal ornaments, household objects and a large number of lithic and bone artifacts. Although ritual and functional artifacts were spread all over the layers, the density of burials and grave goods was observed more in the south than the other spatial contexts of the trench.

KÖRTİK TEPE 2008

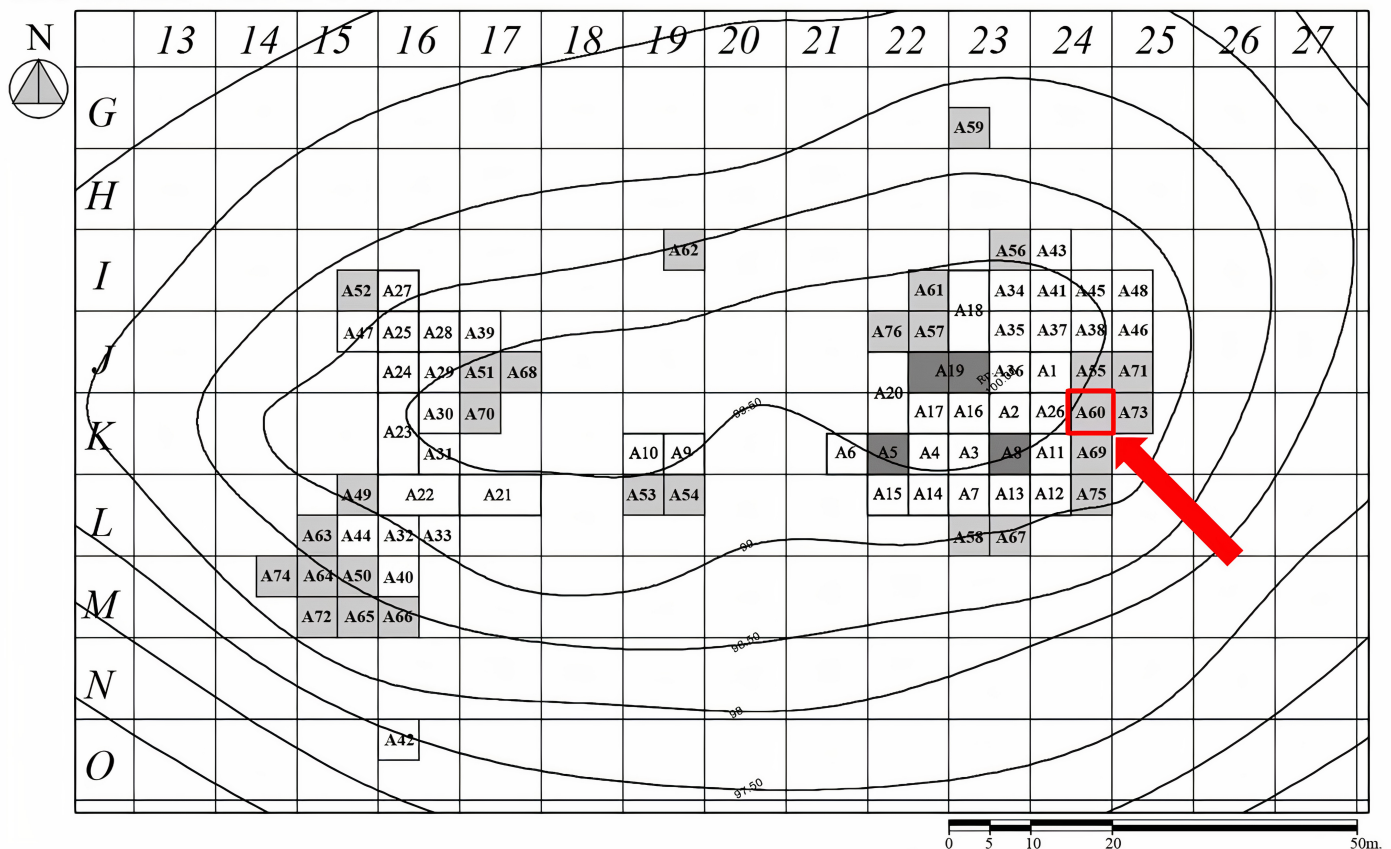


Figure 5. Spatial context of Trench A60 of Körtiktepe 2008 excavation. Drawn by V. Özkaya.

Table 3. Earliest PPNA burials in the Trench A60 at Körtiktepe; the heart-shaped object was placed at a closest position of the burial M19.

Burial No	Code	Position	Depth (cm)	Period	Phase	Dating (BC)	Spatial position	Major findings
M20	FCD	Hocker	-250	PPNA	III/IV	10050-9400	Northwest	Gypsum plastered and ochre painted skeleton.
M21	FCG	Hocker	-250	PPNA	III/IV	10050-9400	Northwest	Gypsum plastered and ochre painted skeleton.
M18	EUN	Hocker	-252	PPNA	III/IV	10050-9400	Middle-Southeast	Skeleton of an adult individual.
M17	EUZ	Hocker	-255	PPNA	III/IV	10050-9400	Southeast	Painted skeleton with gypsum coverage. A total of 3 stone vessels, 352 shell beads, 340 stone beads, 185 serpentine stone beads, 1 scepter, a group of flint tools and a group of obsidian tools associated with a gypsum plastered, ochre painted skeleton.
M19	EVA	Hocker	-257	PPNA	III/IV	10050-9400	Southeast	

A total of twelve PPNA burials were recorded in layers between the depth of -93 and -250 cm. Eight of these burials (*i.e.* M1, M3, M4, M6, M10, M11, M13 and M14) yielded single skeleton in each of them; all

were painted with red ochre and associated with a large number of grave goods including flint and obsidian tools, pestles, stone vessels, pieces of stone vessel, perforated stone tools, serpentine color stone, rounded

stone objects, bone artifacts, hundreds of stone and shell beads and a large quantity of animal bones. In particular, the greater number of beads manufactured from a variety of raw materials was remarkable in this Trench. The burials which did not yield any notable grave goods (e.g. M16) also presented significant clues of funerary rituals, presenting skeletons painted with red ochre and a covering of gypsum plaster.

One of the most striking records was the discovery of five burials of hocker position spread across a single cultural deposit between the depths of -250 and -257 cm, presenting one of the oldest PPNA sequences of the Trench (Table 3). With a density of stone beads, a large number of typical grave goods were recorded from them. All the five burials were placed in very close position to each other, and each of them yielded a single skeleton painted with red ochre and covered with gypsum plaster. Similar kinds of artifacts were spread inside and around the burials, reminding that they all were used as grave goods.

Of these five burials, the burial M18 was unearthed in the middle to southeastern spatial context of the Trench A60. Placed at a depth of -252 cm, it yielded a skeleton in hocker position. Another significant burial was M17, placed a little southeast of M18 and at a depth of -255 cm, also yielded a single skeleton in hocker position which was painted with red ochre and covered with gypsum plaster. The burial M19 was also placed in the southeast spatial context, adjacent to burial M17 and almost opposite to the burial M18. At a depth of -257 cm, the burial yielded a single skeleton of an adult individual in extreme hocker position. The skeleton too was painted with ochre and but had a thick coverage



Figure 6. The M19 burial shows a thick coverage of gypsum plaster on the adult human skeleton; the yellow arrows point out different types of grave goods placed under, on and around the skeleton. Photograph by V. Özkaya from KT Archive.

of gypsum plaster. The most striking feature of burial M19 was its exceptionally rich number of grave goods, including at least three stone vessels, 352 shell beads, 340 stone beads, one stone scepter, 185 serpentine beads, and a large number of flint and obsidian artifacts (Figure 6).



Figure 7. Spatial position of the burial M18, M17 and M19 at the Southeast part of the Trench A60. The yellow colored arrow indicates the spatial position of the heart-shaped artifact in between the three burials. Photograph by V. Özkaya from KT Archive.

The remarkable heart-shaped bone artifact was unique among the varieties of burial goods and material objects obtained from this PPNA sequence between –250 and –257 cm depth. In its spatial context, the artifact was placed in the space between the burial M18, M17 and M19, in a manner of showing close connection with them (Figure 7: yellow arrow). As found in most of the grave goods and human skeletons in this layer, a thick gypsum coverage was also present on the heart-shaped artifact, suggesting it to be an artifact of grave good presented for any of the dead in the burial M18, M17 and M19. Nonetheless, it appears that it may have stronger association with the burial M19 when considering its closest spatial context.

Concluding discussion

A rich number of ritual objects and grave goods were recorded in every space, trench, layer and cultural sequence of Körtiktepe. The cultural assemblages from this enormous PPNA site were extremely rich and diverse (Özkaya, 2004, 2007, 2009; Özkaya & Coşkun, 2009, 2011; Özkaya & San, 2002, 2003; Özkaya & Şahin, 2018, 2019; Özkaya *et al.*, 2008, 2009, 2010, 2012, 2016, 2017). Beside the use of selective and sporadic raw materials, commonly available raw materials including varieties of animal bones were also widely used in manufacturing activities. The heart-shaped bone object can be categorized among those assemblages of simple manufacture. Yet, with the fact of being the only worked bone of its kind, its ritual association and its heart-like symmetrical morphology, the specimen stands among the rarest artifacts of Körtiktepe.

Heart-shaped artifacts are extremely rare in prehistoric records regardless to the periods and geographies. So far, the earliest examples of heart-like prehistoric artifacts were the double heart ivory beads from the excavations of the Gravettian site Grub/Kranawetberg of Lower Austria (Antl & Bosch, 2015). Dated to be about 22000 BC, the beads had two opposite spherical heads with an incision in the middle, as if the pointed parts of “two distinct hearts” joined together (Figure 8a). Among the Neolithic assemblages of West Asia, on the other hand, only a broken half of a tiny heart-shaped dark red carnelian bead from Çatalhöyük (Bains, 2012), and very few heart-like “butterfly” beads from Tell Abu Hureyra and Tell Halula (Alarashi, 2016) can be mentionable. These Neolithic specimens had rounded semi-heart like shapes, and their perforation into the middle made them like two distinct wings of a butterfly (Figure 8b); therefore, they were more often categorized to be the butterfly beads. Among the very few examples found in the later prehistoric records, the use of heart-shaped leaves of peepal or the sacred fig tree (*Ficus religiosa*) in some artistic depictions of the



Figure 8. Probable heart-like artifacts in different prehistoric periods. **a:** an Upper Palaeolithic “opposite-heart” ivory heads from Grub/Kranawetberg of Austria, dated c. 22,000 BC (after Antl & Bosch, 2015: fig. 9/o-p) **b:** a PPNB non-collared butterfly bead from Abu Hureyra of Northern Syria, 7000 cal BC (after Alarashi, 2016: fig. 4: m) **c:** a Bronze Age heart-like gold pendant of Harappa, dated c. 2800 BC (after Vats, 1940: Pl. CXXXVII, no. 8) and **d:** one of the twelve upturned heart-shaped pendants of Late Bronze Age Hoard of Zalaszarbar, Hungary, dated c. 14th century BC (after Honti & Kiss, 2013: fig. 4). Not to scale.

Indus Valley Civilization is notable. Particularly a heart-shaped pendant in gold repoussé was unique among enormously large assemblages of the urbanized Harappa, dated between c. 2800 and 2700 BC (Vats, 1940). The artifact was found among a collection of jewelry (no. 8060), from Trench IV of Mound F at Harappa (Figure 8c). Two hooks were attached on it for the purpose of suspension. Rare examples of heart-shaped artifacts were found in some Late Bronze Age and Iron Age records too. Among them, a collection of at least twelve heart-shaped pendants from the well-known Bronze Hoard of Zalaszarbar, Hungary are notable (Honti & Kiss, 2013). Dated around 14th century BC, the bronze pendants were used as upturned hearts with a hook at the tip (Figure 8d). However, none of the above-mentioned heart-like artifacts showed resemblance with the asymmetric heart-shaped morphology in a realistic manner as present in the Körtiktepe specimen.

Heart-like shapes later appeared in different coinage, iconography, epigraphy monuments, and anatomical texts of the ancient world, too (Vinken, 1999). However, still, all of these depictions were mere geometric shapes, anatomical features, or indications of specific natural elements like leaves or seeds (e.g. Koerper & Kolls, 1999). The use of heart-like shape in a metaphoric meaning of emotion, love and affection is argued to appear only during the later phase of the Medieval Age (e.g. Vinken, 2001). Therefore, it is difficult to argue if the heart-shaped bone artifact of Körtiktepe had any association of “emotion”, or it was merely a grave good

manufactured by following the natural morphology of its raw material. Yet, due to the fact of its association with funerary practices, the unique artifact traces back the symbolic presence and ritual use of the shape of a “heart” in the Early Pre-Pottery Neolithic context of about 10000 BC.

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