

# Hittite animal sacrifice

## Integrating zooarchaeology and textual analysis

### Abstract\*

In 2008, the disarticulated remains of a young male sheep skeleton deposited within a small Late Bronze Age pit were recovered at Kilise Tepe in south-central Turkey approximately 40 km inland from the Mediterranean coast. The pit, which exclusively contained the sheep skeleton, was located within a building whose size, design and artefactual contents indicate it was associated with ritual activity. The lack of disturbance to the pit and excellent state of preservation of the bones suggest elements that are missing were not originally deposited. The carcass was thoroughly dismembered, disarticulated and filleted prior to deposition. Contextual analysis of these skeletal remains provides a significant opportunity to move beyond the limits of textual analysis when studying Hittite animal sacrifice. By demonstrating the benefits of zooarchaeological analysis conducted in a context-specific fashion this paper offers the beginnings of a methodology for Anatolian specialists interested in examining ritual behaviour. More than a simple case study, this article combines two separate strands of archaeological evidence to investigate the complex issue of Hittite animal sacrifice.

### Introduction

Everything known about Hittite animal sacrifice has been learned through textual analysis. Despite their importance, there are inherent limitations in the analysis of all ancient texts including ambiguities of translation, assumed knowledge of the original audience, focus of the narrative, and simple rarity. Limitations also exist stemming from the interests of modern researchers. To date, Hittite texts describing rituals, festivals and feasting events involving animal sacrifice have been examined to determine the role of cult and priesthood in society, the nature and timing of particular festivals and the understanding of deities and their relationship with

humans<sup>1</sup> but rarely has attention been turned to the animals themselves, with the exception of work done by Collins<sup>2</sup> and Mouton.<sup>3</sup> This reliance on textual analysis can be limited by engaging primary archaeological evidence, as demonstrated successfully elsewhere, particularly in Greece (as amply demonstrated in this volume). Detailed analyses of skeletal remains and their depositional context will extend our understanding of Hittite animal sacrifice.

Few zooarchaeological reports have been published from Hittite Empire (Late Bronze Age=LBA) and Neo-Hittite period sites (Early Iron Age=EIA), and none discuss individual contexts or sacrifice and feasting events<sup>4</sup> with the exception of a briefly reported piglet burial from Yazılıkaya.<sup>5</sup> To address the lack of available data and encourage future publications, this paper uses a case study of a disarticulated but almost complete young sheep skeleton deposited within a small LBA pit inside a building with ritual associations from Kilise Tepe, to demonstrate how zooarchaeological data, combined with textual analysis, increases knowledge of Hittite animal sacrifice. In a forthcoming article Mouton states that for the understanding of Hittite animal sacrifice to move forward, beyond traditional textual analysis we must examine “à la loupe les informations issues de l’archéologie, et plus particulièrement de la zoo-archéologie”.<sup>6</sup> To that end the site, the context of the pit, and the zooarchaeological material are presented in detail prior to a consideration of relevant texts. Only then can we link the facts of the archaeological data

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<sup>1</sup> Cf. Beckman 1983; 1990; Gurney 1976; Miller 2004; Singer 1983.

<sup>2</sup> Collins 1990; 2002; 2006a; 2006b.

<sup>3</sup> Mouton 2004; 2005; 2007; 2008; forthcoming.

<sup>4</sup> Deniz, Çalışlar & Özgüden 1964; Driesch & Pöllath 2003; Hongo 1997; 2003; 2004; Howell-Meurs 2001; Ikram 2003; Patterson 1937; Zeder & Arter 1994.

<sup>5</sup> Hauptmann 1975, 65.

<sup>6</sup> Mouton forthcoming.

with the potentiality of the texts to reconstruct the process of animal sacrifice and deposition.

## Kilise Tepe

Kilise Tepe is a small mound site measuring approximately 100 × 110 m at its summit, located in south-central Turkey approximately 40 km inland from the Mediterranean coast in western Cilicia (Fig. 1). The site dominates the south-eastern exit from the Mut basin on one of the few routes through the Tarsus Mountains towards the coast, and it also controls the local ford of the Göksu river,<sup>7</sup> an important east–west route leading towards Gülnar and the west.<sup>8</sup> Occupation of the site, thought to be an administrative and military centre, dates from the Early Bronze Age (EB II 2700–2400 BC) through to the Byzantine period (up to AD 1200), though occupation is not continuous. Kilise Tepe is particularly important for the study of Hittite occupation in south-central Turkey due to the lack of contemporaneous sites in the region; occupations are known only from Mersin and Tarsus. Neither of these sites has published zooarchaeological data, though a significant catalogue of bone objects<sup>9</sup> has been published from the original Tarsus excavation and renewed excavations promise to deliver important environmental data.<sup>10</sup> The sheep burial identified as the remains of a sacrifice is associated with Phase IIa dating towards the end of the LBA (approximately 1275 BC).

## Stele Building

In the north-west sector of the site stands a large (18 × 14 m) building (Fig. 2), dubbed the Stele Building after a painted sandstone stele was recovered from its central room (Room 3), that has been interpreted as having a ceremonial, ritual, or at the very least public function.<sup>11</sup> The building is not a temple, as such, and many of its rooms served utilitarian functions including storage of foodstuffs, but neither is it domestic. Two rooms are of particular interest and are briefly described below.

### Room 3

The large central room of the building contained a central hearth measuring 80 cm in diameter and a diagonally placed table or altar, both of which originally date to Phase II a/b and remained in use through several phases as evidenced by their association with a number of floors.<sup>12</sup> Several shells, clay and stone beads and a small collection of astragali<sup>13</sup> were recovered from the triangular area formed by the altar and the corner of the north and east walls. A cache of 99 astragali (47 goat, 34 sheep, 16 sheep/goat and 2 fallow deer) was found buried beneath the IIc floor of Room 7. These may have originally been kept within a container as suggested by the recovery of twelve small copper rivets amongst them. The painted sandstone stele was recovered from the south-east section of Room 3. Considering the size, layout and placement of the central hearth and adjacent platform and nearby altar, it is likely that ceremonial events taking place in the building would have occurred in this room.

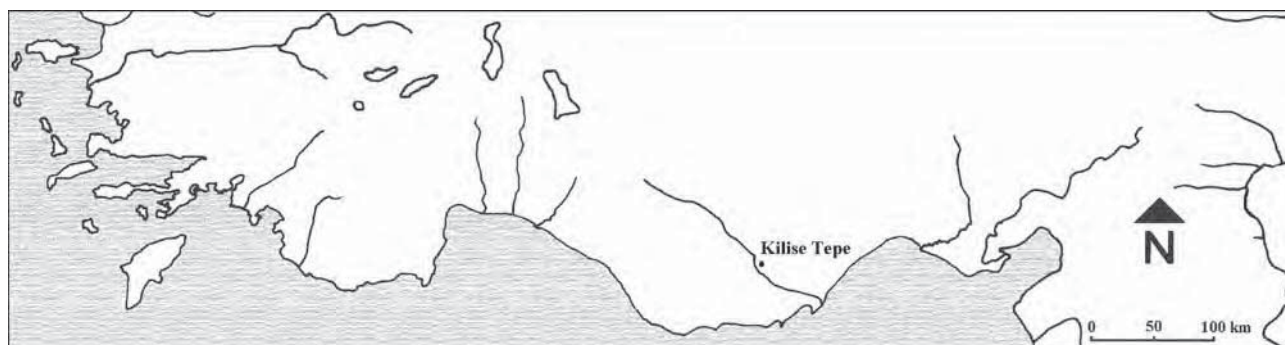


Fig. 1. Location of Kilise Tepe in south-central Turkey.

<sup>7</sup> Postgate 1998, 128.

<sup>8</sup> Baker 2008.

<sup>9</sup> Goldman 1950; 1956; 1963.

<sup>10</sup> Özyar 2005.

<sup>11</sup> Postgate & Thomas 2007, 137.

<sup>12</sup> Postgate & Thomas 2007, 125.

<sup>13</sup> Postgate & Thomas 2007, 125.

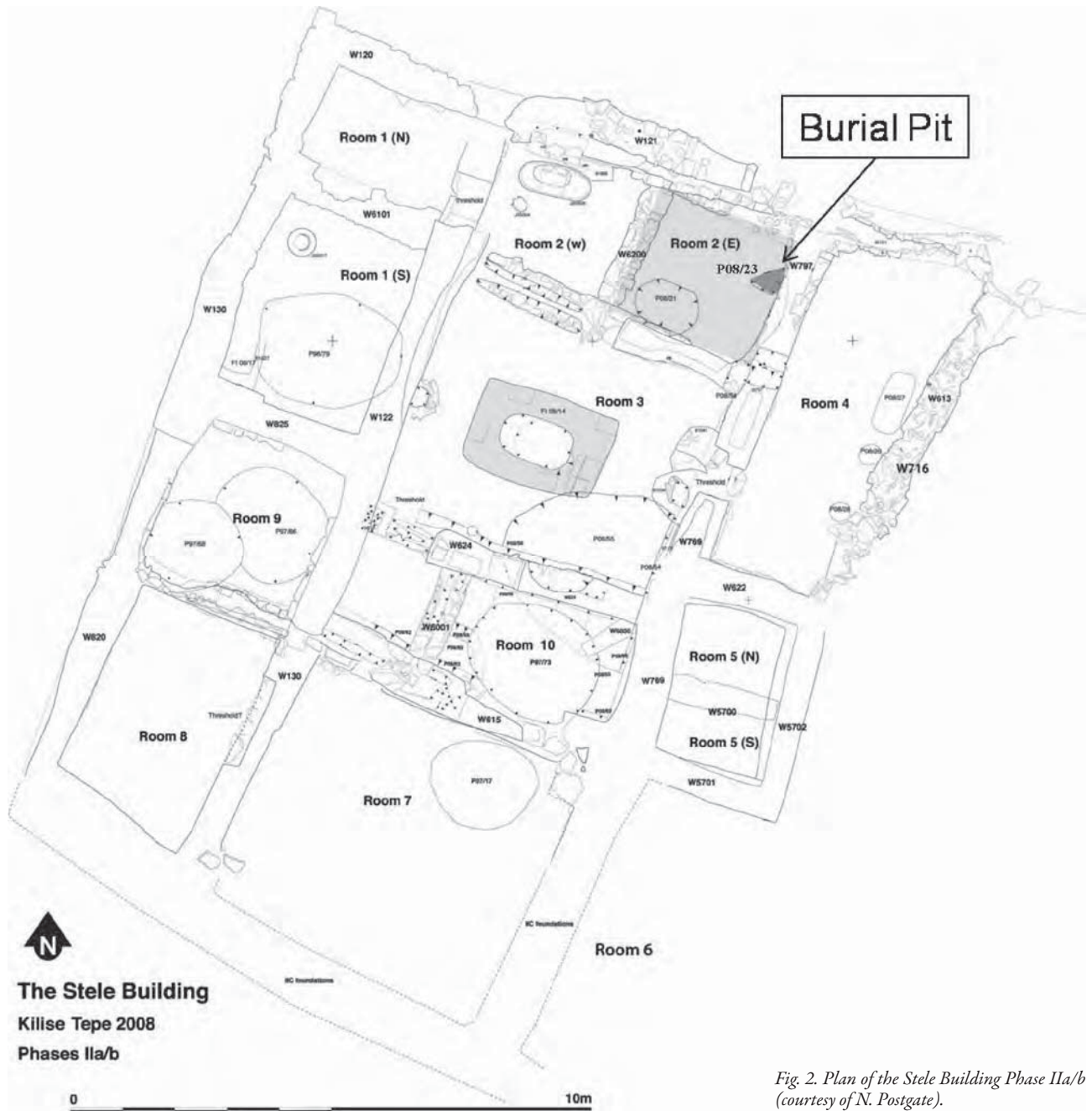


Fig. 2. Plan of the Stele Building Phase IIa/b (courtesy of N. Postgate).

### Room 2

Located immediately north of Room 3, and adjoined to it via a small doorway, Room 2 has no striking features except for the small pit (P08/23), dug beneath the Phase IIa floor into the Phase III fill. The pit appears to be contemporary with the major reconstruction of the building in Phase IIa rather than belonging to the earlier Phase III occupation. It was

sub-triangular with maximum lengths of approximately 60 cm and quite shallow reaching a maximum depth of approximately 20 cm. The pit contained the remains of a single, nearly complete disarticulated sheep skeleton (Fig. 3), along with occasional pieces of charcoal, also found in the surrounding matrix, to the exclusion of any other artefact or ecofact.





Fig. 3. Pit P08/23 in Room 2 (E) (facing southeast).



Fig. 4. All recovered elements presented in approximate anatomical position (courtesy of B. Miller).

## Zooarchaeological evidence

### Elements recovered

A total of 53 elements were recovered from pit P08/23 belonging to a single young male sheep (*Table 1* and *Fig. 4*).

All of the major long bones were recovered except for the left scapula and right humerus. The long bones were recovered complete or nearly complete, save for the left humerus and right tibia, indicating that the bones were not intentionally broken during the butchery process or subsequently for marrow removal. Most of the left ribs were missing. The bones were deposited in a disarticulated and jumbled state (*Fig. 3*), however local articulations between individual vertebrae and carpals were intact indicating that some connective tissue remained. The bones, and possibly other waste from the carcass, were deposited shortly after the animal had been killed. The missing shoulder joints (right humerus, left scapula and most of the left humerus) may have been treated differently from the remainder of the carcass and removed in their entirety prior to filleting. Both of the astragali were missing suggesting they were collected from the carcass prior to deposition. Bearing in mind the collection of astragali recovered behind the altar in Room 3 and the cache buried in Room 7 it is clear that astragali collection was not an uncommon occurrence at the site. Caches of astragali are fairly common in Near Eastern buildings. Anatolian examples include instances from Alishar, Gordion, Tarsus,<sup>14</sup> Hacilar<sup>15</sup> and Beycesultan.<sup>16</sup> The possibility exists that these astragali were selected from animals that had been sanctified prior to slaughter, enhancing their suitability for use at subsequent ritual events. The same provenance is unlikely to have been required of astragali used in a more profane manner.

### Taphonomy

The limited fragmentation (*Table 1*) and the good/excellent state of preservation of the bones indicate that they were neither disturbed nor affected by destructive taphonomic processes subsequent to burial. All of the bones rate a 0/1 on the Behrensmeier weathering scale.<sup>17</sup> It is probable that elements not recovered from the pit were not deposited within the pit in the first place. None of the bones show signs of burning or evidence of carnivore gnawing. When fragmentation of the long bones exists the breaks are curved rather than square or jagged indicating the bone was broken while fresh.

<sup>14</sup> Gilmour 1997.

<sup>15</sup> Mellaart 1970.

<sup>16</sup> Lloyd 1972.

<sup>17</sup> Behrensmeier 1978.

Table 1. Catalogue of elements showing their completeness.

Catalogue no.	Element	Side	% complete
81425/03	cranium	Axial	NA
81425/01	mandible	Left	90
81425/02	mandible	Right	80
81425/04	hyoid	Right	80
81425/05	atlas	Axial	90
81425/06	axis	Axial	80
81425/07	cervical vertebra	Axial	90
81425/08	cervical vertebra	Axial	80
81425/09	cervical vertebra	Axial	60
81425/10	thoracic vertebra	Axial	80
81425/11	lumbar vertebra	Axial	90
81425/12	lumbar vertebra	Axial	90
81425/13	lumbar vertebra	Axial	80
81425/14	lumbar vertebra	Axial	100
81425/15	caudal vertebra	Axial	100
81425/16	caudal vertebra	Axial	100
81425/19	sternum	Axial	NA
81425/17	rib	Left	NA
81425/18	rib	Right	NA
81425/38	innominate	Left	80
81425/39	innominate	Right	90
81425/23	scapula	Right	80
81425/20	humerus	Left	30
81425/21	radius	Left	70
81425/24	radius	Right	100
81425/26	carpal	Right	100
81425/22	metacarpal	Left	100
81425/25	metacarpal	Right	90
81425/27	femur	Left	100
81425/33	femur	Right	100
81425/28	tibia	Left	100
81425/34	tibia	Right	10
81425/29	calcaneus	Left	100
81425/30	navicular cuboid	Left	100
81425/35	navicular cuboid	Right	100
81425/31	tarsal	Left	100
81425/36	tarsal	Left	100
81425/32	metatarsal	Left	100
81425/37	metatarsal	Right	100
81425/41	proximal phalanx	Right	100

81425/42	proximal phalanx	Left	100
81425/43	proximal phalanx	Right	100
81425/44	proximal phalanx	Left	100
81425/45	proximal phalanx	Left	100
81425/46	proximal phalanx	Right	100
81425/47	medial phalanx	Left	100
81425/48	medial phalanx	Left	100
81425/49	medial phalanx	Left	100
81425/50	distal phalanx	Left	100
81425/51	distal phalanx	Left	100
81425/52	distal phalanx	Left	100
81425/53	sesmoid	NA	NA

## Butchery

Disarticulation cut marks, some possibly associated with skinning, filleting cut marks and heavy chop marks (Table 2) provide evidence for butchery. The chop marks are limited to the axial skeleton and result from a rough sectioning of the spine and pelvis into smaller parcels. Very heavy cut or chop marks are found on the axis vertebra (Figs. 5 and 6) which result either from enthusiastic slaughtering of the animal by cutting its throat or possibly relate to the decapitation of the animal. Textual evidence indicates it was common Hittite practice to slaughter an animal by cutting its throat in order to bleed the animal out; the blood was collected for ritual use or let drain into a designated area such as a pit, onto bread, or before an altar or representation of a deity.<sup>18</sup> Disarticulation cut marks on the bones indicate that the carcass was broken down into individual elements in a precise fashion following skeletal divisions. Good examples of these marks are seen on the proximal face of the head of the right femur (Fig. 7). Several disarticulation marks may also have served as initial skinning marks, particularly those on the distal limb elements.<sup>19</sup> The cut mark on a caudal vertebra is likely associated with tail removal, often accomplished during the skinning process.<sup>20</sup> Filleting marks indicate that meat was stripped from the skeleton. A series of eleven cut marks on the spine of the right scapula (Fig. 8) were made during the removal of the origin of the deltoid muscle and filleting marks on the antero-lateral face of the proximal right femur (Fig. 9) were made during the removal of the origin of the vastus intermedius muscle.

<sup>18</sup> Mouton forthcoming.

<sup>19</sup> Lapham 2005.

<sup>20</sup> Seetah forthcoming.



*Fig. 5. Axis vertebra with heavy chop marks (right side view) (courtesy of B. Miller).*



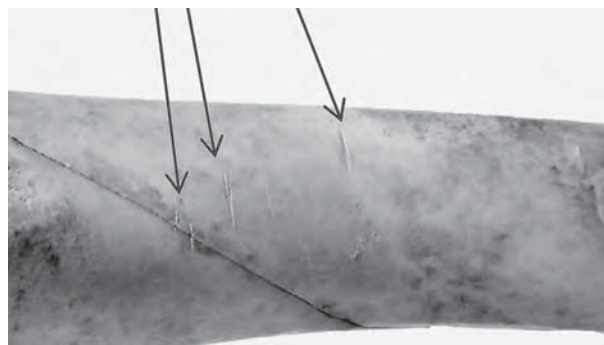
*Fig. 7. Disarticulation cut marks on the head of the right femur (proximal view) (courtesy of B. Miller).*



*Fig. 6. Axis vertebra with heavy chop marks (ventral view) (courtesy of B. Miller).*



*Fig. 8. Filleting marks on the right scapula spine (courtesy of B. Miller).*



*Fig. 9. Filleting marks on the antero-lateral face of the proximal right femur (courtesy of B. Miller).*

Table 2. Catalogue of butchery marks.

<i>Cat. no.</i>	<i>Element</i>	<i>Side</i>	<i>Type</i>	<i>Freq.</i>	<i>Location</i>	<i>Aspect</i>	<i>Direction</i>	<i>Proposed purpose</i>
81425/03	Cranium	Axial	Chop	2	Frontal	Dorsal	Medial-lateral	Disarticulation/ consumption
81425/05	Atlas	Axial	Chop	4	Dorsal-caudal	Dorsal	Medial-lateral	Disarticulation
81425/05	Atlas	Axial	Cut	3	Ventral-cranial	Anterior	Dorso-ventral	Disarticulation
81425/05	Atlas	Axial	Cut	4	Dorsal-cranial	Anterior	Medial-lateral	Disarticulation
81425/06	Axis	Axial	Chop	4	Ventral-cranial	Dorsal	Medial-lateral	Disarticulation
81425/06	Axis	Axial	Chop	4	Dorsal-caudal	Ventral	Medial-lateral	Disarticulation
81425/08	Cervical vertebra	Axial	Chop	2	Vertebral arch	Dorsal	Medial-lateral	Disarticulation
81425/08	Cervical vertebra	Axial	Cut	2	Cranial centrum	Ventral	Medial-lateral	Filleting
81425/09	Cervical vertebra	Axial	Chop	4	Vertebral arch	Dorsal	Medial-lateral	Disarticulation
81425/12	Lumbar vertebra	Axial	Chop	4	Cranial centrum	Ventral	Medial-lateral	Disarticulation
81425/13	Lumbar vertebra	Axial	Chop	5	Caudal centrum	Ventral	Medial-lateral	Disarticulation
81425/14	Lumbar vertebra	Axial	Chop	4	Cranial centrum	Ventral	Medial-lateral	Disarticulation
81425/16	Caudal vertebra	Axial	Cut	2	Cranial centrum	Ventral	Medial-lateral	Disarticulation/skinning
81425/20	Humerus	Left	Cut	2	Lateral condyle	Lateral	Anterior-posterior	Disarticulation
81425/20	Humerus	Left	Cut	5	Medial condyle	Medial	Anterior-posterior	Disarticulation
81425/23	Scapula	Right	Cut	2	Glenoid cavity	Proximal	Medial-lateral	Disarticulation
81425/23	Scapula	Right	Cut	11	Spine	Lateral	Dorso-ventral	Filleting
81425/24	Radius	Right	Cut	5	Proximal-lateral	Lateral	Anterior-posterior	Disarticulation
81425/24	Radius	Right	Cut	4	Proximal -medial	Anterior	Medial-lateral	Disarticulation
81425/26	Radial carpal	Right	Cut	1	Posterior	Posterior	Medial-lateral	Disarticulation/skinning
81425/26	2+3 carpal	Right	Cut	3	Posterior	Posterior	Medial-lateral	Disarticulation/skinning
81425/27	Femur	Left	Cut	1	Head	Proximal	Anterior-posterior	Disarticulation
81425/28	Tibia	Left	Cut	3	Head	Medial	Proximal-distal	Disarticulation
81425/28	Tibia	Left	Shave	5	Tibial crest	Anterior	Proximal-distal	Filleting
81425/30	Navicular cuboid	Left	Cut	2	Anterior	Anterior	Medial-lateral	Disarticulation/skinning
81425/33	Femur	Right	Cut	4	Head	Proximal	Anterior-posterior	Disarticulation
81425/33	Femur	Right	Cut	1	Greater trochanter	Lateral	Anterior-posterior	Disarticulation
81425/33	Femur	Right	Cut	7	Medial condyle	Medial	Proximal-distal	Disarticulation
81425/33	Femur	Right	Shave	5	Lateral shaft	Lateral	Anterior-posterior	Filleting
81425/34	Tibia	Right	Cut	2	Lateral-anterior	Medial	Aroximal-distal	Disarticulation
81425/35	Navicular cuboid	Right	Cut	3	Anterior	Anterior	Medial-lateral	Disarticulation/skinning
81425/37	Metatarsal	Right	Cut	2	Proximal-medial	Medial	Anterior-posterior	Disarticulation/skinning
81425/38	Innominate	Left	Cut	1	Ischium	Lateral	Cranial-caudal	Disarticulation
81425/38	Innominate	Left	Cut	1	Pubic symphysis	Ventral	Medial-lateral	Disarticulation
81425/38	Innominate	Left	Chop	2	Pubic symphysis	Ventral	Cranial-caudal	Disarticulation
81425/39	Innominate	Right	Cut	5	Ilium ala	Medial	Cranial-caudal	Disarticulation
81425/39	Innominate	Right	Cut	2	Pubis	Ventral	Cranial-caudal	Disarticulation
81425/39	Innominate	Right	Cut	3	Ischium	Lateral	Cranial-caudal	Disarticulation



## Species, age and sex

The animal was identified as a sheep based on morphological criteria following Boessneck.<sup>21</sup> The animal was sexed on the basis of pelvis morphology following Boessneck<sup>22</sup> and determined to be male. The animal was aged based on fusion<sup>23</sup> (Table 3) and dental eruption and wear<sup>24</sup> (Tables 4 and 5) and determined to be approximately 20–24 months old at death.

Table 3. Fusion date ranges and occurrences with the skeleton. After Silver 1969.

<i>Fusion group</i>	<i>Element</i>	<i>Fusion date range</i>	<i>Fusion state</i>	<i>Number</i>
A = 6–16 months	Scapula proximal	6–8 months	Fused	1
	Pelvis acetabulum	6–10 months	Fused	2
	Humerus distal	10 months	Fused	1
	2nd Phalanx	13–16 months	Fused	3
	1st Phalanx	13–16 months	Fused	5
B = 18–28 months	1st Phalanx	13–16 months	Fusion line visible	2
	Tibia distal	18–24 months	Fused	1
	Metacarpal	18–24 months	Fusion line visible	2
C = 30–36 months	Metatarsal	20–28 months	Fusion line visible	2
	Calcaneus	30–36 months	Fusing	1
D = 36–42 months	Femur proximal	30–36 months	Unfused	2
	Radius distal	36 months	Unfused	2
	Femur distal	36–42 months	Unfused	2
	Tibia proximal	36–42 months	Unfused	1
Suggested age range = 20–28 months				

Table 4. Permanent tooth eruption and wear. After Silver 1969.

<i>Tooth erupting</i>	<i>Time range</i>	<i>State in mandible</i>	<i>Number</i>
Premolar 1	21–24 months	Half erupted	2
Premolar 2	21–24 months	Half erupted	2
Premolar 3	21–24 months	Half erupted	2
Molar 1	3–5 months	Fully erupted; in wear	2
Molar 2	9–12 months	Fully erupted; in wear	2
Molar 3	18–24 months	Half erupted	2
Suggested age range = 21–24 months			

<sup>21</sup> Boessneck 1969.

<sup>22</sup> Boessneck 1969.

<sup>23</sup> Silver 1969.

<sup>24</sup> Payne 1973; Silver 1969.



Table 5. Tooth wear. After Payne 1973.

Tooth	Right	Left
dP4	17L	NA
P4	Half erupted	Half erupted
M1	9A	9A
M2	7A	7A
M3	Half erupted	Half erupted
Stage D = M2 in wear, M3 unworn		
Payne's age range = 12–24 months		

## Withers height

Based on the greatest lengths of the radius, metapodials and calcaneum the withers height of the animal was determined to be between 62–64 cm at the time of death (Table 6).<sup>25</sup> A number of the long bones were unfused at death so the animal may not have reached its full adult size.

Table 6. Withers height indexes. After Teichert 1975.

Element	Index	Side	GL (mm)	Withers (cm)
Radius	GL × 4.00	Right	155	62
Metacarpal	GL × 4.84	Left	131,8	64
Metacarpal	GL × 4.84	Right	131,9	64
Metatarsal	GL × 4.51	Left	140	63
Metatarsal	GL × 4.51	Right	140	63
Calcaneum	GL × 10.23	Left	61,1	63

## Deposition

A lack of archaeological examples suggests that the careful deposition of a sheep carcass into a small pit subsequent to meat removal was an unusual practice in LBA Anatolia; however the textual record, discussed in the next section, indicates otherwise. Reasons for this might include: 1) the practice was occurring off-site, on river-banks for example (see in particular KUB 7.41, below); 2) the pits were subsequently disturbed or cut by other pits; 3) the pits only occurred in particular buildings (that have yet to be excavated); 4) the pits have been overlooked in past excavations because of their small size and the general lack of interest in zooarchaeological remains; or finally 5) the pits have been excavated but have not been published.

<sup>25</sup> Teichert 1975.

## Textual evidence

Textual evidence indicates Hittite use of pits in ritual practice took a variety of forms, including: as a channel for communication with chthonic deities, as a means of disposing of impurities by consigning them to the earth as an offering, and as a means of securing the future strength and favour of a structure in the form of a foundation ritual. The following selection of texts illustrates various ritual practices involving both sheep and pits.

### Examples of relevant texts

#### 1) Ritual for drawing of paths: KUB 15.31<sup>26</sup>

“Promptly he takes a hoe and digs (with it). Then he takes a pectoral ornament and digs with it. Then he takes a *šatta*-, a spade, and a *buppara*-container, and he clears out (the pit with them) ...

He smears the nine pits with blood. Then for the nine pits (there are) nine birds and one lamb. For *ambasši* and *keldi* he offers nine birds and one lamb. He puts one bird in each pit, but the lamb they cut up and put in the first pit.”

#### 2) Ritual to the underworld deities for purifying a house: KUB 7.41<sup>27</sup>

“He goes to the river bank and takes oil, beer, wine, *walbi*-drink, *marnuan*-drink, a cupful (of) each in turn, sweet oil cake, meal, (and) porridge. He holds a lamb and he slaughters it down into a pit (*pattešsar*).”

<sup>26</sup> Translation from Collins 2002, 227.

<sup>27</sup> Translation from Collins 2002, 227.

3) Foundation ritual (for a temple of the Goddess of the night): *KUB 29.4* and duplicate *KBo 8.90*<sup>28</sup>

“When, during the second day, at nightfall, a star twinkles, the ritual patron goes to the temple. He bows down before the deity. The two knives which have been made for the new deity, one takes them. One digs an *āpi*-pit before the table of the deity. One sacrifices a sheep to the deity as *enumašši*. One slaughters [it] down into the pit.”

4) Foundation ritual (from the 13th century BC): *KUB 55.26* and *Bo 7740*<sup>29</sup>

“Bu[t] to the pillars (sg.) which are on the right and left (side of the owner of the house), to those they sacrifice (sheep) in three different places. Each time, however, they s[ac]rifice one sheep.

In front of the altar, he (the owner of the house) pours beer (and) wine after the blood (offering). In front of each of the two pillars they libate three times. They place the raw meat (of the sacrificed sheep), the breasts, shoulders, heads, and feet, in front of the altar. The breast, shoulders, heads, (and) feet they place in front of those t[wo] pillars, to (or for) which (animals) have been slaughtered.”

5) Tunnawiya of Hattuša’s ritual of “Taking off the Earth”: *KUB 55.45* and *Bo 69/142ii*<sup>30</sup>

“While they begin digging out the storage pits they drive up a sheep. The old woman consecrates it to the Sun Goddess of the Earth. They slit its throat downward into the storage pit and let its blood flow downward ... Then they butcher (the animals) with respect to the heads and feet. While the fat cooks, soldiers dig out a storage pit. When they finish digging it, then they [di]g close by another storage pit. It happens that they join it to the (first) pit. The fat cooks and the entire assembly eats it.”

6) (Winter) festival for Ishtar of Nineveh: *KUB 10.63*<sup>31</sup>

“The queen comes forth, and the diviner opens up a pit (*āpi*) before the Storm God *marapši*. The diviner offers one sheep to the Storm God *marapši*, and the diviner cuts its throat downward for the pit. He releases the blood into a cup, which he places on the ground before the Storm God *marapši*. Next the diviner (proceeds) to the raw intestines and heart (of the sacrifice) and cuts off a little. He takes a little blood as well and sets it down into the pit. Then at the top he stops up the

pit with thick bread. They carry the sheep forth, and the temple servants cut it up.”

## Discussion of texts

None of the available texts specify what becomes of the sheep carcass after it is sacrificed and butchered. Ritual (2) is designed for the purification of a house, or temple, however it takes place next to a river bank and examples of this ritual will be difficult to find in the archaeological record; none are currently known. Further, the description of slaughtering a lamb down into the pit may be referring to letting its blood flow from its neck into the pit at slaughter and not the placement of the carcass into the pit. The house described in ritual (4) can indicate a temple or ceremonial location.<sup>32</sup> Architectural elements other than pillars can also receive sacrifices including walls, hearths, windows, doors, door bolts, columns and altars.<sup>33</sup> The pit described in ritual (1) is dug with a hoe and a “pectoral ornament” and the pits described in rituals (2) and (3) are dug with daggers suggesting that they are all small, unlined, single use affairs similar to pit P08/23. The purpose of ritual (5) is to release a suppliant by means of substitution from the influence of the chthonic powers and thus to absolve him from his sin and heal him. The ritual describes humans feasting on the sheep that has been consecrated to the Sun Goddess of the Earth. In ritual (6) portions of the intestines, heart and some blood of the sacrificed sheep are placed into the pit. The remainder of the sheep is butchered for human consumption.<sup>34</sup> The fate of the carcass post-butchery is not stated but it is conceivable it was brought back to the pit, which was only covered by bread, and deposited.

It is possible the deposit represents the remains of a foundation ritual as the pit dates to a period of major reconstruction of the building. It is equally possible that the Kilise Tepe sheep deposit derives from a ritual practice not described in any of the available texts. Although there is no exact parallel between the rituals described and the deposit recovered at Kilise Tepe, the rituals share many similarities in structure allowing the construction of a ritual framework that can be applied to the zooarchaeological evidence from Kilise Tepe.

<sup>28</sup> Translation from Mouton 2008, 7; see also Collins 2002, 228.

<sup>29</sup> Translation from Ünal 1988, 101.

<sup>30</sup> Translation from Collins 2002, 229.

<sup>31</sup> Translation from Collins 2002, 231.

<sup>32</sup> Ünal 1988, 102.

<sup>33</sup> Ünal 1988, 103.

<sup>34</sup> Collins 2002, 230.

## Reconstructing the process of animal sacrifice and consumption

The process surrounding the deposition of the sheep bones within the pit in the Stele Building can be reconstructed through a combination of the zooarchaeological and textual data. Aspects of this reconstruction inevitably rely on extrapolation from known ritual practice. The nine stage process introduced here expands the six stages that sacrificial meat underwent proposed by Mouton.<sup>35</sup> Animal selection and pit preparation stages are added to reflect the importance of these acts to the ritual process as indicated by their inclusion in numerous texts. In addition, the butchery evidence indicates that her “cutting of the meat” stage is represented by two separate stages: disarticulation and filleting.

1) *Selection*: The animal was selected with a particular ritual/event in mind; species, age, sex and colour may all have been a factor in its selection. In this case the animal required was a yearling ram. Sheep were the animals most frequently offered as sacrifices,<sup>36</sup> meaning they were also the animals most frequently eaten during feasts. Age of the animal sacrificed is specified in substitution rituals, where the animal is typically juvenile, but is seldom mentioned in other texts. Sex is not specified for most rituals and may not have been important in this instance but it is taken into consideration during substitution rituals where the sex of the animal usually matches the sex of the devotee.<sup>37</sup>

2) *Sanctification*: The animal was brought to the Stele Building and sanctified through prayer and possibly the ritual burning of incense and/or scented wood. It was common practice in Hittite rituals to purify animal offerings through the burning of cedar wood or an unknown substance called *tubhuesšar*.<sup>38</sup> This act bestows a condition of being devoted or sacred upon the animal making it suitable as an offering to a deity. The special deposition of the skeletal material, and possibly other soft tissue waste, indicates that the whole animal became devoted during this process and not just the meat (*šuppa*) that was subsequently placed before the deity.<sup>39</sup>

3) *Preparing the pit*: The pit was dug. The pit’s small size, single use and lack of any lining indicates it was dug using small tools as in rituals 1, 2 and 3, above, for the express purpose of holding the remains of the animal about to be sacrificed.

I suggest the pit was dug prior to the act of sacrifice because it was common practice for an animal to be bled out into a ceremonial pit.

4) *Sacrifice*: The animal was sacrificed. The verb most commonly used to describe the slaughter of the animal is *hatt(a)-*, translated as “prick”, “strike”, “cut open” and “slit the throat”.<sup>40</sup> This verb choice is important as it is associated with the flowing of the animal’s blood. Two other verbs, *ku(e)n-* and *hu(e)k-*, are translated respectively as “to kill” and “killing” (only used with animals) are occasionally used and contrapuntally emphasize the common choice of *hatt(a)-*. The act of slaughter represents the moment of destruction of the animal; it is irrevocably sacrificed by its owner. It also facilitates the release of the animal’s blood, a powerful ingredient in the ritual process. The sheep was bled out by cutting its carotid arteries and jugular veins. The heavy cut marks on the axis likely reflect this act. The animal’s blood was collected in a vessel or on bread or allowed to flow into the prepared pit.

5) *Disarticulation*: The animal was skinned and disarticulated. Two techniques were used in the process: heavy chopping and precise cutting. Long bones were separated from each other by cutting through the joint; whole joints were not preserved, save perhaps a shoulder joint. The axial skeleton was chopped roughly into smaller parcels. At this stage the left shoulder, left ribs, right shin and offal may have been separated from the rest of the skeleton and prepared as offerings, explaining their absence in the pit. The astragali may also have been collected at this stage. Two main verbs are used to describe the cutting up of the sacrificial animal: *ark-* and *mark-*.<sup>41</sup> The verb *ark-* always precedes *mark-* when they are employed in a sentence together (and both always follow *hatt(a)-*) indicating they describe different though related actions. They have been translated as “dividing, cutting out” and “to cut, to cut up” respectively. Physical evidence shows that several distinct stages of butchery took place on the Kilise Tepe sheep. It is possible that the act of disarticulation is described by the verb *ark-* and the subsequent act of filleting described by the verb *mark-*.

6) *Filleting*: Meat was stripped from the bones of the sheep. This meat may not have been offered before the deity but was still sanctified and considered as *šuppa*. It would have been consumed along with the offerings at a subsequent feasting event. If cooked, the meat of the animal was probably boiled rather than roasted as textual evidence indicates roasting is typically reserved for the heart and liver.<sup>42</sup> There is no evi-

<sup>35</sup> Mouton 2007.

<sup>36</sup> Mouton forthcoming.

<sup>37</sup> Mouton forthcoming.

<sup>38</sup> Mouton 2007.

<sup>39</sup> Mouton 2007.

<sup>40</sup> Mouton 2007.

<sup>41</sup> Mouton 2007.

<sup>42</sup> Mouton 2007.

dence for burning on any of the bones. Meat removal likely occurred prior to cooking. If the bones had been boiled it is likely the unfused epiphyseal ends would have become disarticulated, and this did not occur.

7) *Deposition*: Bones and other waste material were carefully deposited into the pit reflecting the sanctified nature of the entire animal (*šuppa*). It is important to remember the pit was within the Stele Building and the interment of the sheep in this location carries significance because it differentiates the deposit from common food refuse. The pit was covered.

8) *Offering*: The *šuppa*, made up of meat, offal and possibly fat, was taken into Room 3 and placed before the deity, perhaps represented by the stele if it is considered to be a *huwaša* stone. The *šuppa* was left for some period of time before the deity, possibly overnight. There is no zooarchaeological evidence for this action but the ritual associations of the Stele Building make it possible. On the other hand, if the deposition was the result of a foundation ritual the sheep may not have been offered to a deity at all but rather to an architectural element within the building or the building itself. It was not necessary to destroy the sacrifice by fire to transmit it to the deity, as was the case in ancient Greece, though complete immolation of sacrifices did occur, particularly in Kizzuwatna rituals.<sup>43</sup>

9) *Consumption*: The *šuppa* was taken from before the deity and consumed. It was not forbidden for humans to consume *šuppa* after it had been offered to the deity. The *šuppa* that was not offered to the deity would also be consumed at this stage. It is not clear who would have been able to participate in the feast. Texts describing feasts associated with religious holidays occurring in Hattuša indicate the feasts were restricted to elite members of society including the royal family, palace officials and priests.<sup>44</sup> Participants at Kilise Tepe, which was a great distance from the Hittite heartland, may have included other members of society.

The topic of how Hittites prepared meat derived from a sacrificial animal for consumption has been little explored, though Mouton has made an important effort in this direction.<sup>45</sup> While ritual immolation of entire animals is frequently described in Hittite ritual texts this practice would leave a very different zooarchaeological signature than that seen at Kilise Tepe so is not considered to be relevant for the case at hand. Cooking (*zanu-*) of the meat was done either in a pot (boiled) or by fire, in a hearth with an open flame. The two

techniques could be used together on different parts of the same animal. Examination of approximately 60 texts<sup>46</sup> indicates a clear separation of cooking technique preference dependant on the anatomical part involved (*Table 7*). The liver and the heart are the most frequently referred to anatomical units and are virtually always cooked with fire. This does not imply immolation of these elements as a method of transferring them to a god for consumption, but rather that this is a cooking method that often leads to consumption by humans. These two body parts may hold particular importance for Hittite ritual due to their association with the animal's blood, also a substance that features heavily in ritual practice. The two most obviously missing elements of the Kilise Tepe sheep are the shoulder joints and left ribs. Both of these are parts that are occasionally prepared by fire. It is possible that the reasons these bones were removed from the carcass was so that the associated meat could be prepared in a different fashion (cooked by fire) than the rest of the meat filleted from the body which was prepared in a pot. Both the cooking by fire and cooking by pot could have occurred at the central hearth in Room 3 of the Stele Building.

*Table 7. Hittite ritual meat cooking techniques. After Mouton 2007.*

<i>Anatomical part</i>	<i>Pot</i>	<i>Fire</i>
Head	5	0
Ear	0	1
Shoulder	1	2
Heart	0	23
Anterior leg (hand)	3	0
Chest	6	0
Bulge? (KURIDU)	2	0
Chops	4	1 (short chops)
Lung	1	0
Liver	1	26
Leg?	7	0
Posterior leg (foot)	2	0
Top of the fore and hind legs ( <i>kudur</i> )	3	0
<i>muh(ha)rai-</i>	2	0
<i>auli-</i>	1	0
pure bone ( <i>parkui haštai</i> )	1	0

<sup>43</sup> Mouton forthcoming.

<sup>44</sup> Mouton forthcoming.

<sup>45</sup> Mouton 2004; 2005; 2007.

<sup>46</sup> Mouton 2007, 7–8.



## Conclusions

This paper is a first step to integrating zooarchaeology with Hittite textual evidence to better understand LBA animal sacrifice. Intra-site, deposit specific zooarchaeological analyses are necessary to produce reconstructions of the process of animal sacrifice and consumption that are informed by, but not limited to, textual representations. This is particularly true at sites such as Kilise Tepe, located a long distance from the Hittite heartland where most of the texts were produced and recovered. Sites on the edge of empire likely engaged in regional ritual practices not officially recognized or recorded by centrally located scribes making the zooarchaeological evidence crucial to the determination of regional realities of ritual practice. This will prove helpful when considering cultural contact across the eastern Mediterranean basin. In addition, the butchery analysis performed may assist Hittitologists with the debatable definitions of verbs related to animal sacrifice, in particular *ark-* and *mark-*, by providing a better understanding of the physical process of Hittite ritual butchery.

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