Book Section:

Hadjikoumis, A. orcid.org/0000-0002-0831-1351 (2016) Every dog has its day: first glimpses into everyday life in Early Bronze Age Attica. In: Marom, N., Yeshurun, R., Weissbrod, L. and Bar-Oz, G., (eds.) Bones and Identity: zooarchaeological approaches to reconstructing social and cultural landscapes in southwest Asia. Oxbow , Oxford & Philadelphia , pp. 225-245. ISBN 9781785701726

https://doi.org/10.2307/j.ctvh1drw5.15

Bones and Identity

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Bones and Identity

Zooarchaeological Approaches to Reconstructing Social and Cultural Landscapes in Southwest Asia

Edited by

Nimrod Marom, Reuven Yeshurun,
Lior Weissbrod and Guy Bar-Oz

Paperback Edition: ISBN 978-1-78570-172-6
Digital Edition: ISBN 978-1-78570-173-3 (epub)

Oxford & Philadelphia
www.oxbowbooks.com

Published in the United Kingdom in 2016 by
OXBOW BOOKS
10 Hythe Bridge Street, Oxford OX1 2EW

and in the United States by
OXBOW BOOKS
1950 Lawrence Road, Havertown, PA 19083, USA

Paperback Edition: ISBN 978-1-78570-172-6
Digital Edition: ISBN 978-1-78570-173-3 (epub)

A CIP record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data

Names: Marom, Nimrod. | Yeshurun, Reuven. | Weissbrod, Lior. | Bar-Oz, Guy. | International Council for Archaeozoology. | International Symposium on the Archaeozoology of Southwestern Asia and Adjacent Areas (11th : 2013 : Universitat Hefah)
Title: Bones and identity : zooarchaeological approaches to reconstructing social and cultural landscapes in Southwest Asia / edited by Nimrod Marom, Reuven Yeshurun, Lior Weissbrod and Guy Bar-Oz.
Description: Oxford ; Philadelphia : Oxbow Books, 2016. | Includes bibliographical references.
Identifiers: LCCN 2016013174 (print) | LCCN 2016015405 (ebook) | ISBN 9781785701726 (paperback) | ISBN 9781785701733 (digital) | ISBN 9781785701733 (epub) | ISBN 9781785701740 (mobi) | ISBN 9781785701757 (pdf)
Subjects: LCSH: Animal remains (Archaeology)–Middle East–Congresses. | Excavations (Archaeology)–Middle East–Congresses. | Social archaeology–Middle East–Congresses. | Landscape archaeology–Middle East–Congresses. | Cultural landscapes–Middle East–History–To 1500–Congresses. | Group identity–Middle East–History–To 1500–Congresses. | Cooking–Social aspects–Middle East–History–To 1500–Congresses. | Livestock–Middle East–History–To 1500–Congresses. | Land use–Social aspects–Middle East–History–To 1500–Congresses. | Middle East–Antiquities–Congresses.
Classification: LCC CC79.5.A5 B66 2016 (print) | LCC CC79.5.A5 (ebook) | DDC 939.4/01–dc23
LC record available at https://lccn.loc.gov/2016013174

Printed in Exeter by Short Run Press

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Front cover: Wild sheep skull from the osteological collection of the Laboratory of Archaeozoology, Zinman Institute of Archaeology, University of Haifa. Photography and cover design by Anat Regev-Gisis.

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Chapter 11

Every Dog has Its Day: Cynophagy, Identity and Emerging Complexity in Early Bronze Age Attica, Greece

Angelos Hadjikoumis

Our knowledge of societies in transition from the Neolithic to the Early Bronze Age in Attica is almost non-existent on issues related to human-animal interactions. This constitutes the first study of three large faunal assemblages from southeast Attica that sheds light on a variety of previously unaddressed issues revolving around the notions of identity and social complexity. Zooarchaeological analyses reveal that the practice of cynophagy played an important role in Early Bronze Age Attica. Dogs were systematically reared and consumed as suggested by the abundance of their remains, the extensive butchery marks on them and other lines of evidence. Cynophagy occurred in Greece from as early as the Early Neolithic and there is evidence for it from various regions but the case of Koropi in Attica is perhaps currently the most characteristic example of an extensive and organized adherence to this practice in Early Bronze Age Greece. Moreover, this study produced evidence to support that cynophagy was not practiced for purely subsistence purposes and discusses the possible sociopolitical ramifications of this practice in the currently available archaeological context of Early Bronze Age Attica.

Introduction

Archaeological context

Despite intense archaeological interest in the Bronze Age of Greece, our knowledge remains patchy both in chronological and geographical terms. The Middle and Late Bronze Ages (*i.e.* 2nd millennium cal BC) with the impressive Minoan and Mycenaean civilizations are better-known than the preceding Early Bronze Age (*i.e.* 3rd millennium cal BC, hereafter “EBA”). For the EBA, some regions are well-covered by archaeological research, such as the Peloponnese and the Cyclades, while Attica, and especially its southeastern part (Fig. 11.1), remains poorly known

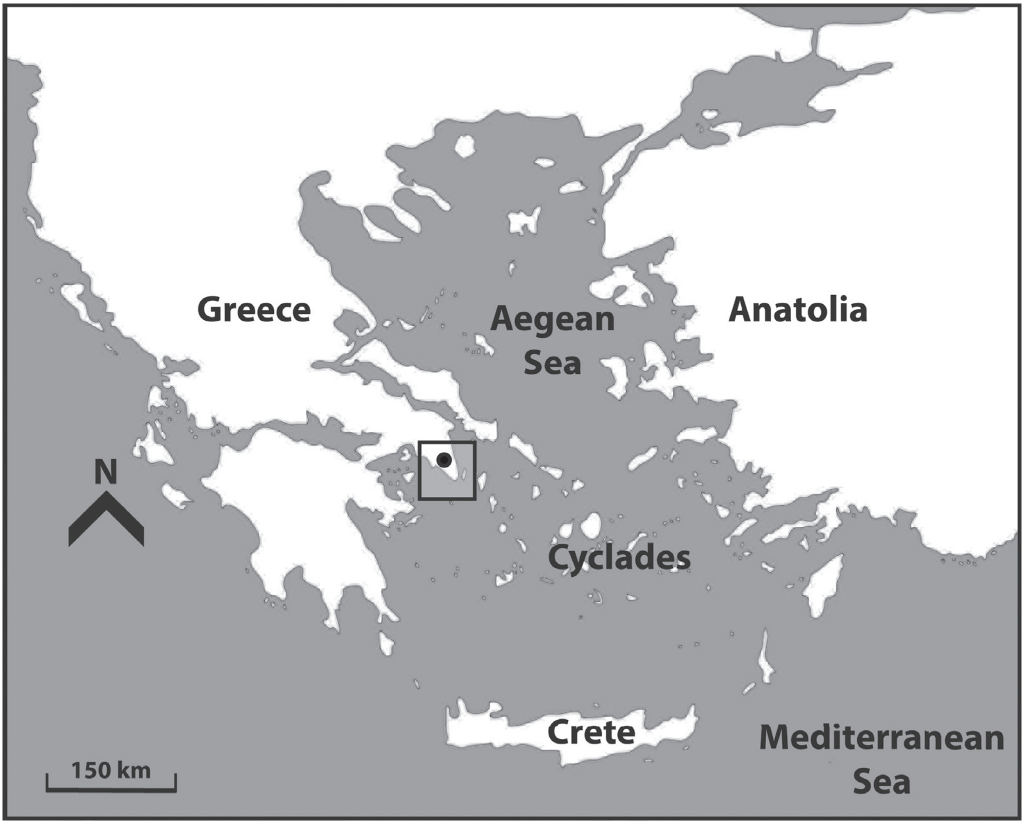

Fig. 11.1. Map of Greece and the Aegean with the area of study indicated by the black square and the cluster of Koropi sites by the black circle.

archaeologically and entirely unknown zooarchaeologically. During the preparations for the 2004 Olympic Games in Athens and prior developments in southeast Attica, extensive construction works brought to light many EBA, as well as later Neolithic, settlements. The large volume of material excavated within a few years and the dire financial straits, subsequently afflicted Greece, have delayed the study of many archaeological – especially zooarchaeological and archaeobotanical – assemblages.

The EBA in central and southern Greece appears to have been a period of settlement expansion, both in the number and distribution of sites and in the spatial extent of some of these (*e.g.* Rutter 1993, 2001). Moreover, several Late Neolithic and EBA sites in northern and central Greece have yielded evidence for large-scale consumption events (Halstead 2004, 2012), which imply greater socioeconomic complexity than in earlier Neolithic contexts (Pullen 1992, 2011). Similar patterns are observed in Crete (Isaakidou 2004), the Cyclades (Broodbank 2000) and increasingly in Attica, although different *circum*-Aegean areas followed distinct trajectories towards complexity (*e.g.*

Whitelaw 2004: Fig. 13.7). This dynamic context probably boosted contacts between Attica and other areas of southern mainland Greece, as well as between mainland Greece, the Cyclades and Crete.

Human–animal interactions are not as well-known as other lines of archaeological evidence, although some regions are represented by quite large assemblages. Large EBA faunal assemblages were recovered in the Peloponnese at Lerna (Gejvall 1969) and Tiryns (von den Driesch and Boessneck 1990), while that from Tsoungiza (Halstead 2011) is of modest size but has the advantage of more systematic recovery. At these sites, domestic animals form the overwhelming majority while wild species played a minor role with percentages well below 10%. The more fragmented state of the bones of wild animals at Lerna (Gejvall 1969) implies more intensive processing for consumption, one explanation for which has been increased reliance on hunting during times of restricted availability of domestic resources (Halstead 1987). Due to lack of sieving in the old excavations at Tiryns and Lerna, detailed comparisons between sites are unreliable but in broad terms the three sites appear to be similar with sheep/goat around 45% (with variable sheep *vs*. goat proportions), pig around 30% and cattle 15–20% (Halstead 2011: table 13.54). EBA Lerna also provides some of the earliest evidence for the introduction of domestic equids in Greece. The importance of each domestic species in these three Peloponnesian assemblages is broadly similar to that at EBA sites in central Greece such as Pevkakia (von den Driesch 1987) and Platia Magoula Zarkou (Becker 1991). The importance of hunting, however, seems to increase from south to north, with percentages of hunted species regularly exceeding 10% at sites in central and northern Greece (Halstead and Isaakidou 2013: table 7.4). EBA assemblages from the Cycladic islands (*e.g*. Emporio on Chios, Phylakopi on Melos and Zas cave on Naxos) exhibit an overwhelming majority (60–90%) of sheep and goat, which may be attributable to environmental constraints of limited land area, rugged terrain or low rainfall (for summary of assemblages see Halstead 1996: table 1 and references therein). In Crete there is a scarcity of EBA assemblages but the largest available from Knossos is more reminiscent of Cycladic than mainland Greek assemblages (Isaakidou 2004).

For southeast Attica, the geographical focus of this paper, recent rescue work has located and exposed several EBA settlements of varying sizes and, apparently, function (Andrikou 2013b, in press; Kakavogianni and Douni 2009; Kakavogianni *et al.* 2009a, 2009b), showing that a seemingly empty archaeological map represented lack of investigation rather than the absence of human habitation. From available excavation reports and a few specialist studies, evidence is now emerging from southeast Attica of settlement diversity, large-scale communal works (*e.g*. Andrikou 2013b; Kakavogianni 1986), rich material culture (*e.g*. Andrikou 2013a; K. Douni personal communication), trade with the wider Aegean world and extensive metallurgical activity (Kakavogianni *et al.* 2008). Although analysis and interpretation are at a preliminary stage, these new discoveries from EBA southeast Attica highlight the dynamic cultural context of the three faunal assemblages presented in this study.

Cynophagy in Greece

When exploring identity in past societies, zooarchaeologists usually focus on evidences of practices that are out of the ordinary. These differences in diet between regions or periods are frequently viewed as reflecting aspects of the identity of a particular cultural group or sub-groups. One such practice is cynophagy, for which ample evidence has been found in the three EBA assemblages discussed below. Since consumption of dogs (in contrast to cattle, pig and caprines) was not ubiquitous in Neolithic and Bronze Age Greece, abundant and regular evidence for this practice could be interpreted in terms of (sub-)group identity. Before proceeding to analysis of the data from EBA Koropi in Attica, it is useful to provide an overview of available information on cynophagy in prehistoric Greece.

Trantalidou's (2006 and references therein) study on the role of domestic dogs in Greece from the Aceramic Neolithic to the Classical period provides a good starting point. Before the Mycenean period, entire dog skeletons were absent from funerary contexts and most commonly excavated either in general settlement or refuse contexts. It is clear that the domestic dog was present, albeit in small numbers (below 1%) at all three listed Aceramic Neolithic sites from central Greece, the Peloponnese and Crete (Trantalidou 2006: table 1). In the Early Neolithic, for which evidence is available from more sites covering most of mainland Greece and Crete, the scarcity of dogs continues (below 2%). In the Middle Neolithic, percentages remain low, with the exception of the site of Dimitra in east Macedonia, where dogs make up 14.7% of an admittedly modest assemblage (NISP=319) in phase Ia and 5.3% in phase Ib (NISP=425) (Yannouli 1997: table 2a). Exact quantification of butchery marks on dog remains from Dimitra is not available but Yannouli (1997) confirms their presence and infers cynophagy at the site also on the basis of the similarity in contexts and state of fragmentation between dog and other domestic species. In the immediately subsequent Late Neolithic period at Dimitra (NISP=672), dog percentages remained relatively high (5.6%). Relatively high dog percentages have also been recorded at a few more Late or Final Neolithic sites, such as Thermi B (6.8%, Yannouli 1992) and Stavroupoli (4%, Yannouli 2002) in Macedonia and Dimini (4%, Halstead 1992) in Thessaly. Evidence for cynophagy at these sites is scarce (*e.g.* occasional butchery marks) or non-existent, however, and for some (*e.g.* Thermi B and Stavroupoli) it has been argued that dog was probably not consumed, mainly because its remains were found in a less fragmented state than those of other undoubtedly consumed species such as sheep, goat, pig and cattle (Yannouli 1992). In Trantalidou's study (2006: table 1), besides the sites mentioned above, 13 further Late Neolithic sites from northern, central, southern and insular Greece are listed with dog percentages consistently below 3% and usually below 1%.

During the EBA – the chronological focus of the present study – dog percentages remain steadily below 4% all over Greece. The early Middle Bronze Age sample from Nichoria produced an intriguing 8.6% of dog (based on MNI), but closer examination of its zooarchaeological study (Sloan and Duncan 1978) reveals that dog percentages may have been exaggerated in the calculation of MNI: although only 19 dog specimens were identified, these were translated into an MNI of 17 dogs. Despite the probable exaggeration of dog abundance for Middle Bronze Age Nichoria, evidence for cynophagy was reported in the form of "many burned and cut dog bones ..." (Sloan and Duncan 1978: 69).

Although the percentage of dog in a faunal assemblage alone neither confirms nor precludes cynophagy, it is indicative of its relative importance at each site. In the zooarchaeological literature on Neolithic and EBA Greece, cynophagy appears to have been relatively widespread in mainland Greece and the larger Aegean islands (*e.g.* Bökönyi 1989; Gejvall 1969; Isaakidou 2007; Trantalidou 1996; Yannouli 1997). Intriguingly, however, not all assemblages of these periods yielded evidence for cynophagy, suggesting that it was not ubiquitous. The importance of cynophagy varies from site to site and from period to period. Geographically, besides the presence or absence of evidence for cynophagy at each site, there is no clear regional pattern, other than higher dog percentages at some sites in northern Greece which might be attributable to the apparently greater frequency of hunting. Temporally, there is a trend towards higher dog percentages in Late/Final Neolithic and EBA sites.

Aims and objectives

The main aim of this study is to present the evidence for cynophagy in EBA southeastern Attica based on species composition, the age-at-death of dogs, the frequency and type of butchery marks on dog remains, as well as relevant aspects of their taphonomy and fragmentation. The data derive from the study of three faunal assemblages from southeast Attica. Beyond this main aim, a glimpse is provided of the previously unknown EBA animal economy in this area (to be discussed in greater detail elsewhere – Hadjikoumis *et al.* in prep.). An attempt is then made to place the evidence for human-dog interactions in EBA Attica in the context human-animal interactions and other archaeological trends for Attica and more generally for Greece.

Materials and methods

This study focuses on three EBA assemblages from the municipality of Koropi in southeast Attica (Fig. 11.1). Despite the fact that the three assemblages represent samples from different sectors of the same EBA settlement, they are treated separately in this study because they were excavated at different times by different excavators and research on most of the excavated materials as well as the integration of the data collected is still in progress. Moreover, the possibility of minor chronological or functional differences between them remains open. The three excavations are Koropi-Medical Center (hereafter "KMC"), Koropi-Papachristou ("KP") and Koropi-Thanou ("KT"). KMC (Kakavogianni 1986, 1989) constitutes the northeast and KP and KT (Andrikou in press, 2013a, 2013b) constitute the west sector of the EBA settlement at Koropi. The obvious spatial relationship between them is taken into account in the discussion of the results. The material from KMC was recovered from a series of five large subterranean chambers (1, 2, 3, 4–5, 6) and a well. The chambers are cut into the soft calcareous bedrock, are oval in shape and of monumental size by EBA standards (the largest being 10 m long × 6.50 m wide × 3 m deep), and contained large volumes of pottery and animal bones. The chambers have been interpreted as underground storage facilities that were subsequently filled with waste from the settlement (Kakavogianni 1986, 1989). Around the chambers, remains of a wide street and remnants of buildings were also uncovered, although the faunal remains recovered from these contexts were too sparse for any reliable analysis.

Excavation of KP and KT in the southwest of the settlement revealed roads and clusters of rectangular stone-built houses. Based on the typology of pottery and other material culture, all three assemblages are dated to the EBA (*i.e.* Early Helladic II, from 2,800 to 2,300 cal BC) (*e.g.* Andrikou 2013a; K. Douni pers. comm.). Minor chronological differences between the assemblages and also between contexts within each site cannot be excluded, but for the purposes of this study and not least because the analysis of many other materials is still in progress, the three assemblages may be considered broadly contemporary.

The anatomical units selected for systematic recording are: horncore bases; mandible/loose cheek teeth; atlas; axis; scapula; proximal and distal halves of humerus, radius, femur, tibia, metapodia (only III and IV in pigs, II–V in canids); proximal half of ulna; pelvis; astragalus; calcaneum and phalanges 1–3 (excluding lateral phalanges in pigs and phalanges of metapodium I in canids). These anatomical elements have been selected for their durability, identifiability and potential to provide information on the human-animal relationship. For the quantification of species composition, age-at-death and biometry the minimum numbers of anatomical units (MinAU) is used, while for butchery the maximum numbers of anatomical units (MaxAU) is preferred, both according to Halstead (2011). In the same publication, a definition of this quantification method is provided:

> "MinAU was estimated as follows. When two or more fragments might be derived from the same anatomical unit (e.g., a single left proximal tibia) of the same individual animal, only the most complete example contributes to the minimum number of anatomical units. Similarly, to simplify comparison between species with different numbers of foot bones, quantification of fragments of metapodial bones and phalanges has been standardized in terms of minimum numbers of feet: thus if two specimens of phalanx 2 of, say, sheep (or sheep/goat) could be derived from the same foot, only one contributes to the MinAU. Assessment of MinAU was based on visual comparison of specimens and involved the strewing of anatomical/taxonomic groups (e.g., pig humeri) into subgroups (left/right, proximal/distal, medial/lateral, fused/unfused, etc.)."

As with the calculation of minimum numbers of individuals, quantification in terms of MinAU requires an archaeological (rather than zooarchaeological) judgment as to which bone groups are sufficiently close in date of deposition to justify searching for notional "joins" between fragments (Halstead 2011: 749–740).

The MinAU/MaxAU method of quantification was preferred for several reasons. Most importantly, MinAU helps avoid an overestimation of certain species and anatomical elements due to extreme fragmentation (*e.g.* of sheep/goat mandibles or tibiae resulting in many easily identifiable fragments belonging to the same specimen). MinAU does not include two or more identified specimens which could potentially derive from the same unit (*e.g.* a left distal half of humerus). MaxAU is similar to NISP except that it does not include some parts of the skeleton (see above) and it divides long bones into proximal and distal halves. Quantification in terms of MinAU/MaxAU allows reliable comparison with several other zooarchaeological studies in Greece that have followed the same methodology.

Results

Overall species composition

In the largest assemblage of KMC (Fig. 11.2), sheep and goat are the most abundant (53.1%), with slightly more sheep than goat, while cattle (18.3%) and pig (17.5%) are both less frequent. A single equid maxillary tooth provides tentative evidence for the introduction of equids into Attica during the EBA. Perhaps the most surprising characteristic of the KMC assemblage, however, is the high percentage (10.4%) of dog. Dog remains are most abundant in chamber 1 (MinAU=588, 21.9%) and 6 (MinAU=719, 15.0%). The sparse remains of wild animals include several species: red deer, roe deer, fox, and possibly wild boar and wolf.

The species composition of KP is broadly similar to that of the KMC with slightly more than half of the assemblage belonging to caprines and with sheep slightly more abundant than goat within that category (Fig. 11.3). Cattle are slightly less and pigs slightly more abundant than in KMC, while wild species are again scarce. Most strikingly, dog remains are relatively infrequent (2.5%) in KP.

At KT (Fig. 11.4) species composition is similar to that at KP in the predominance of caprines (65.8%) and, lesser abundance of pig (16.4%) and cattle (9.3%), but in this case goats are slightly more abundant than sheep and higher percentages of wild species are also observed. Dog percentages are intermediate between those observed in the other two assemblages (4.6%).

Dog age-at-death

The age-at-death of dogs from the three assemblages is explored on the basis both of epiphyseal fusion and of dental eruption and wear. The dog is a relatively fast-maturing carnivore with most postcranial elements fusing before the end of the second year (Silver 1969) and the estimation of age at death based on dental wear

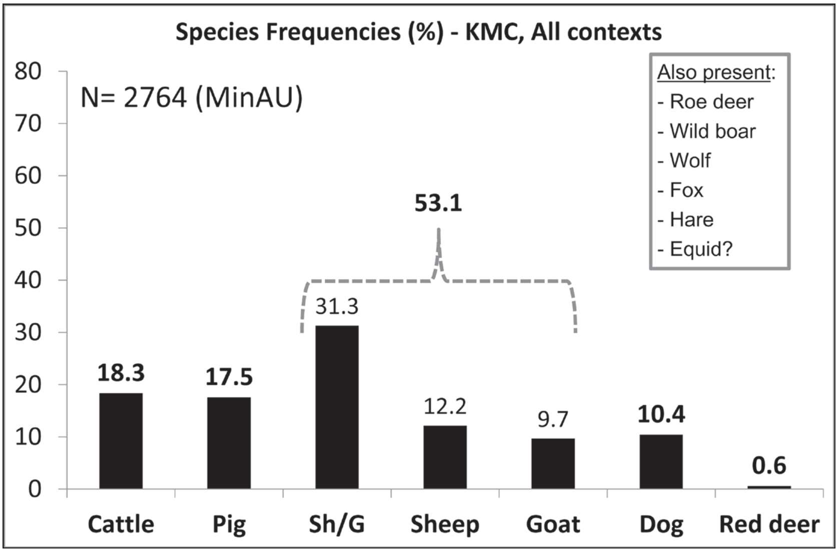

Fig. 11.2. Species composition at KMC, all contexts combined. Specimens belonging to species reported simply as present (see box to the right of graph) are excluded from the total MinAU and the calculation of frequencies for the more common species. Horncores and antlers have also been excluded to ensure comparability with species that lack those elements.

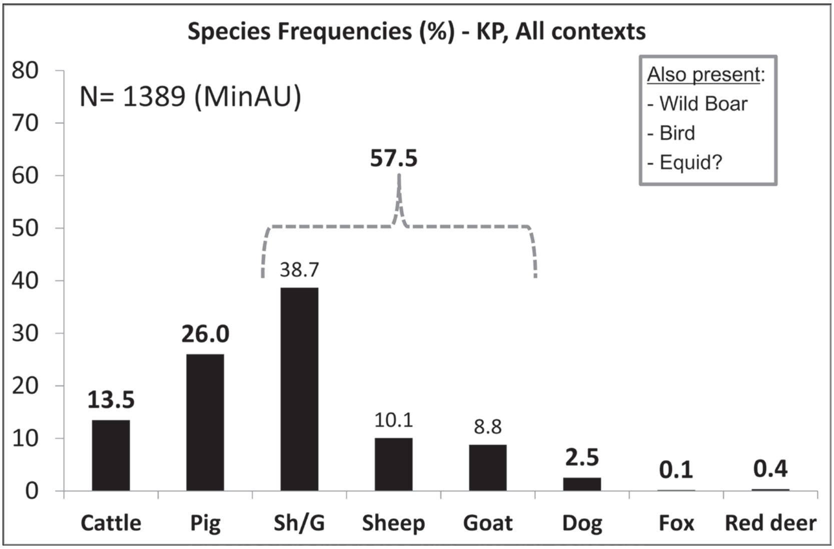

Fig. 11.3. Species composition at KP, all contexts combined. Specimens belonging to species reported simply as present (see box to the right of graph) are excluded from the total MinAU and the calculation of frequencies for the more common species. Horncores and antlers have also been excluded to ensure comparability with species that lack those elements.

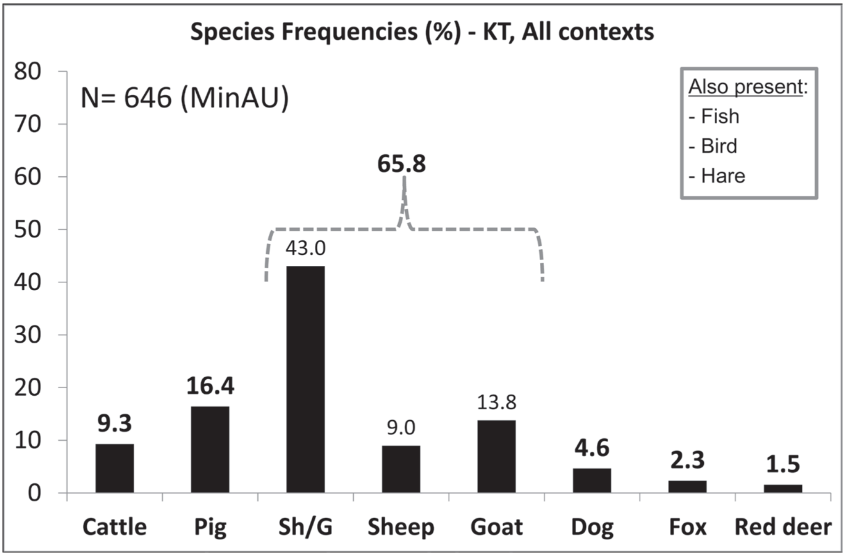

Fig. 11.4. Species composition at KT, all contexts combined. Specimens belonging to species reported simply as present (see box to the right of graph) are excluded from the total MinAU and the calculation of frequencies for the more common species. Horncores and antlers have also been excluded to ensure comparability with species that lack those elements.

is only approximate (Horard-Herbin 2000). Nevertheless, since dog was abundant at EBA Koropi and possibly consumed, it is important to explore the evidence for age at death. For the analyses, dog postcranial remains were divided into elements that fuse before 12 months of age and those that fuse within the second year.

Starting with the epiphyseal fusion data from the largest assemblage of KMC, it is clear that only 5% of dogs died during their first year with mortality rising to 27% in the second year (Fig. 11.5). Interestingly, there are differences in age at death of dogs between contexts. In chamber 6 (Fig. 11.6), there is a clear trend towards younger age at death with higher levels of mortality in both the first (11%) and the second year (44%). If chamber 6 is excluded from analysis, then mortality drops to 3% in the first year and 18% in the second.

At KP, dog remains were scarce and thus not amenable to reliable epiphyseal fusion analysis. Nevertheless, the scarce data suggest that most dogs survived their first (12/12 elements fused) and second (3/3 elements fused) years. The sample of aged dog postcranial remains from KT is slightly larger (N=18) and reveals a similar trend to that of the large sample from KMC, with no deaths in the first year but 27% mortality during the first half of the second year.

The abundant dog remains from KMC allow another approach to the age-at-death based on mandibular eruption and wear. The analyses were carried out based on the Horard-Herbin (2000) scheme, with an additional category for neonatal mandibles.

The results (Fig. 11.7) reveal a peak at stage D, which is the most common wear stage for dogs 15–24 months old according to Horard-Herbin (2000: table 1 and fig. 4). Most of the rest of the mandibles belong to earlier stages (A, B, C and neonatal) with only dogs belonging to the last two stages (F and G). Despite the well-known problems of assigning age to dog teeth due to the broad variability in the abrasiveness of their diet, the trend in this assemblage is clear. The vast majority of dogs died at a relatively young age (*i.e.* 1– 2 years). Very few dogs lived beyond the third (11.4%) or fourth (5.7%) year with an intriguing gap at stage E, which would represent dogs mostly of 2–3 years of age. In addition, some of the oldest specimens are also some of the largest and hence might represent wolves or dogs selected for particular purposes (*e.g.* protection against predators).

Basic biometry

The most abundant anatomical unit was the distal humerus and the scatterplot of its distal breadth and height of trochlea reveals a relatively tightly bound cluster of measurements and few distinctly large outliers (Fig. 11.8 and Table 11.1). This pattern suggests that the dog remains from the three assemblages at Koropi probably belonged to a single type (*i.e.* the majority of specimens clustered together) while the two particularly large specimens probably represent wolves. Some variability

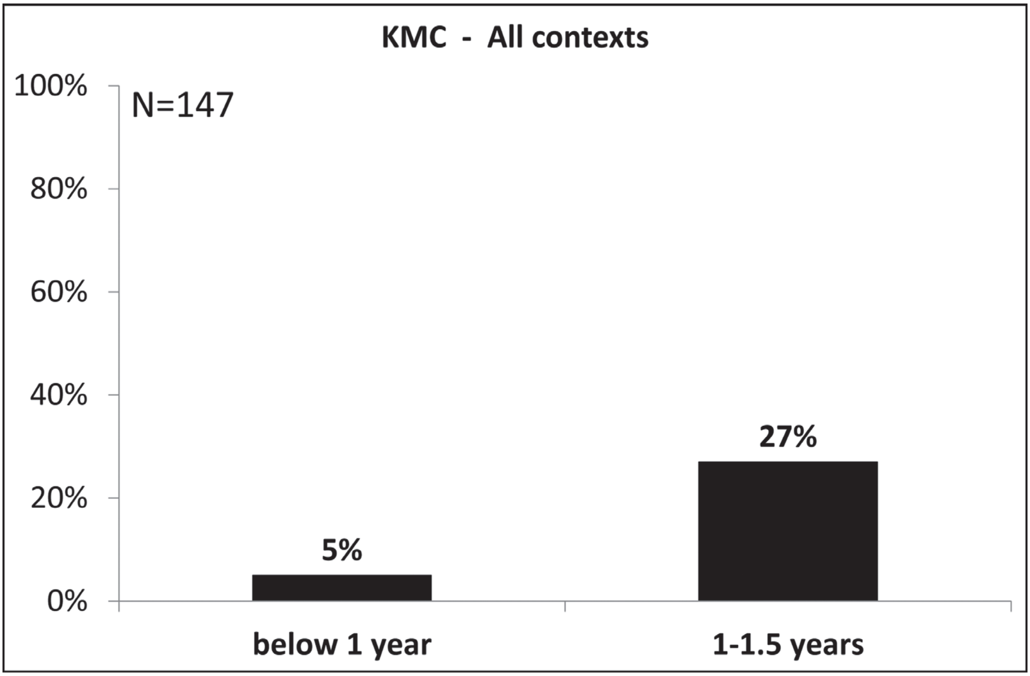

Fig. 11.5. Percentages of dog mortality at KMC based on epiphyseal fusion, all contexts combined.

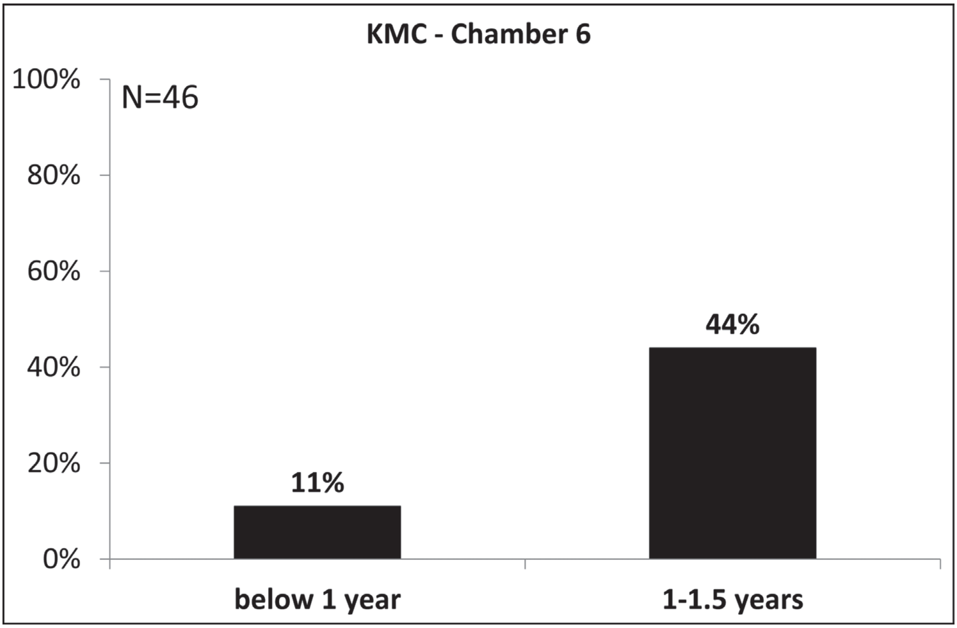

Fig. 11.6. Percentages of dog mortality at KMC based on epiphyseal fusion, only for Chamber 6.

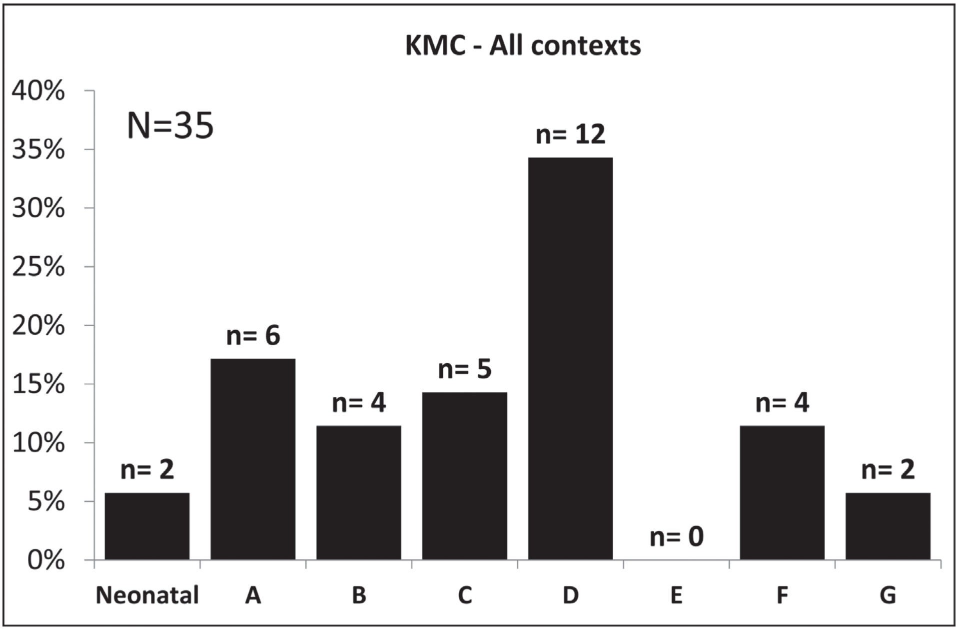

Fig. 11.7. Percentages of dog mortality at KMC based on mandibular eruption and wear. Wear stages are according to Horard-Herbin (2000) with the addition of the 'neonatal' category.

observed within the dog remains can be attributable to sexual, age-related or individual variability within this dog population. The withers height for the Koropi dogs, estimated (Harcourt 1974) from the greatest lengths (*sensu* von den Driesch 1976) of four humeri, three radii and one femur (Table 11.1), ranged between 47 cm and 54 cm.

Butchery

The last but crucial category of data presented comprises the butchery marks on dog remains. The percentages of remains that bear cutmarks show that dogs were butchered as intensively as the other domestic species (Fig. 11.9).

In terms of types of butchery marks recorded on dog remains, the only meaningful sample is that from KMC, where all main types of butchery (except working or sawing) are recorded for dog, as for the other common species (Fig. 11.10). The lower occurrence of chopping/hit marks and higher frequency of disarticulation marks compared to the other domesticates can be attributed to the smaller size of dogs, which renders less necessary any further butchering beyond disarticulation.

Discussion

The results presented in the previous section provide sound evidence for the practice of cynophagy in EBA Attica. Evidence for this practice has been previously reported from Neolithic and EBA sites in Greece, in the form of occasional butchery marks or high dog frequencies. Prior to this study, only a few sites in prehistoric Greece, mainly in the north of the country (*e.g.* Yiannouli 1997), have provided strong evidence for cynophagy, although small samples have hindered assessment of the extent and importance of the practice. The present study not only establishes that cynophagy was practiced in EBA Attica, but is based on samples large enough to shed light on its ramifications in that period and area.

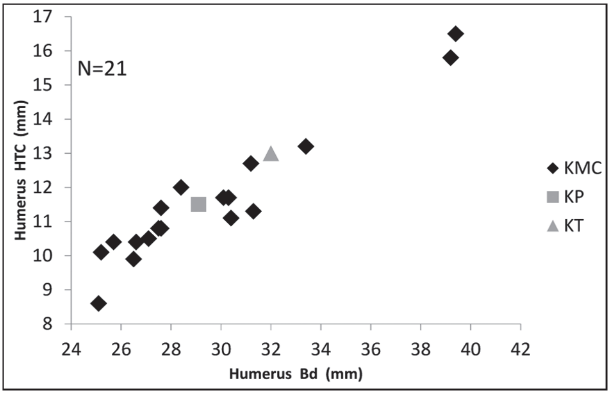

Fig. 11.8. Scatterplot of all measured fully fused canid distal humeri.

Table 11.1. Raw biometric data used in Figure 11.8 and the estimation of withers heights.

Site	*Humerus*			*Radius*	*Femur*
	Bd	*HTC*	*GL*	*GL*	*GL*
KMC	25.1	8.6		161.1	172.2
KMC	25.2	10.1		175.0	
KMC	25.7	10.4		176.0	
KMC	26.5	9.9			
KMC	26.6	10.4	146.2		
KMC	27.1	10.5	144.7		
KMC	27.5	10.8			
KMC	27.6	11.4	154.0		
KMC	27.6	10.8			
KMC	28.4	12.0			
KMC	28.4	12.0			
KMC	30.1	11.7			
KMC	30.3	11.7			
KMC	30.4	11.1	165.3		
KMC	31.2	12.7			
KMC	31.3	11.3			
KMC	33.4	13.2			
KMC	39.2	15.8			
KMC	39.4	16.5			
KP	29.1	11.5			
KT	32.0	13.0			

The notion that eating habits constitute an important component of cultural identity is well-established and extensively discussed in archaeology (*e.g.* Pollock 2012; Twiss 2007). Current zooarchaeological evidence from EBA sites in Greece suggests that cynophagy was not a ubiquitous practice (Trantalidou 2006). Even in cases where some evidence for dog consumption is attested in the form of higher-than-normal dog abundance or cut-marks on dog remains, the extent and intensity of the practice varies from site to site. Independent of the exact meaning of cynophagy for the inhabitants of EBA Attica and more broadly of Greece, the fact that it was not ubiquitous and varied in intensity probably means that it was perceived by both consumers and non-consumers as an aspect of identity. The inhabitants of specific settlements or sub-groups within settlements that did not consume dogs at all, must have viewed others who did as somewhat different and *vice versa*, much as certain

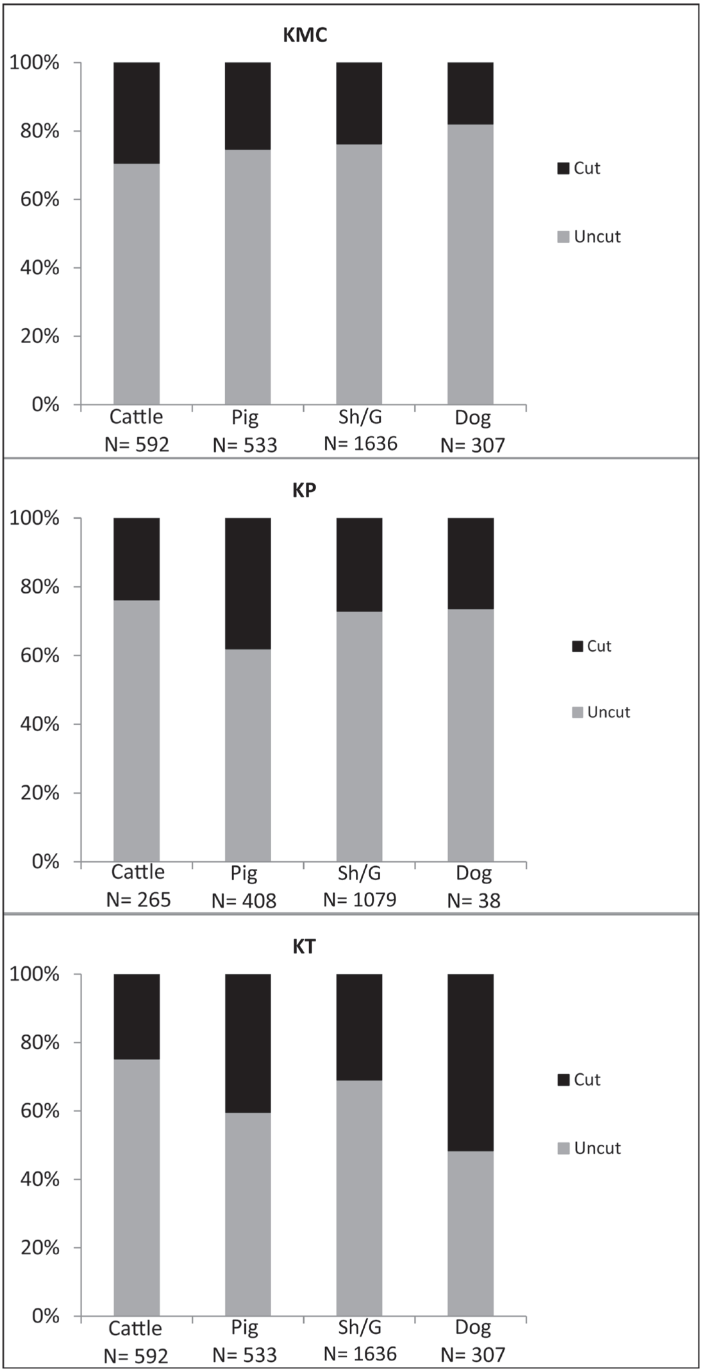

Fig. 11.9. Intensity of butchery on the remains of the most common species at KMC (top), KP (middle) and KT (bottom).

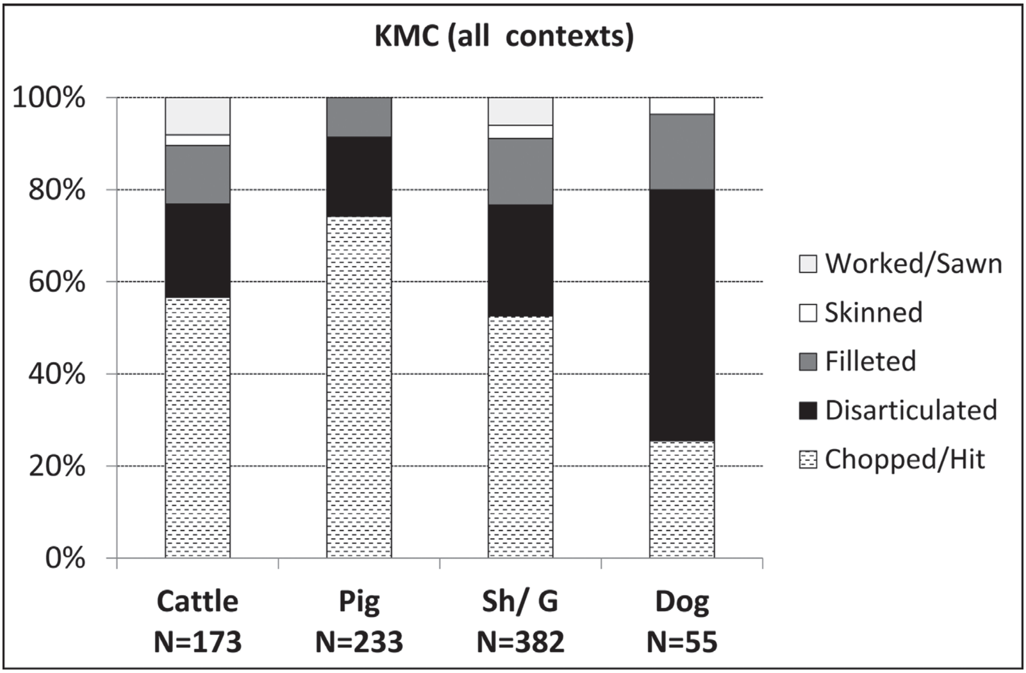

Fig. 11.10. Butchery types on the remains of the most common species.

food taboos (including the consumption of dogs) are viewed nowadays by those who do or do not adhere to them.

Species composition in the three assemblages showed considerable variation in the abundance of dog remains (Figs 11.2–11.4). Dogs were significantly better represented in KMC, the area of the subterranean chambers (>10%), and especially in chambers 1 and 6 (15–20%). All three assemblages are dated by pottery to the Early Helladic II period (*i.e.* 2,800–2,300 BC) and are thus at least roughly contemporary. Assuming contemporaneity, the differences in dog percentages may reflect variation within the settlement in the use of space for particular activities. Whatever the original purpose of the subterranean chambers in the northeast of the settlement (KMC), they were eventually filled with waste, especially pottery, animal remains and obsidian. In contrast to KP and KT, the identification of joining old breaks in the animal bones and pottery from the subterranean chambers, as well as the large volume of tableware (K. Douni, pers. comm.), are suggestive of periodic consumption of food by large groups of people. This suggestion must remain tentative until analysis of the faunal and ceramic assemblages is completed. If such events did take place at EBA Koropi, however, then the consumption of dogs might have been related to a particular type (timing, rationale, social scale) of commensal occasion. The young age profile of the dogs consumed at Koropi (Fig. 11.7) is arguably more compatible with periodic and planned consumption of dogs than with enforced cynophagy (*e.g.* due to a famine), in which case the inhabitants of EBA Koropi would probably have consumed dogs of all ages and without such clear contextual variation within the settlement. The zooarchaeological data presented here suggest a system of rearing dogs, many of which were consumed at between one and two years of age. Beyond providers of meat, dogs at Koropi probably played additional roles such as guarding livestock, of which the most common species at Koropi, sheep and goat, would have needed protection from wolves and foxes, which are also documented in the faunal assemblages.

The biometric analysis shows that the dogs consumed at Koropi probably belonged to a single breed (Fig. 11.8) with withers heights around 50 cm. Dogs of this size were the most common "breed" in Greece from the Neolithic period to at least the Late Bronze Age (*cf.* Trantalidou 2006: table 6) and the same seems to have been the case over most of Europe during Neolithic and Bronze Age times (Horard-Herbin *et al.* 2014). Iconographic representations of dogs from EBA Greece are relatively rare but the closest, both geographically and chronologically, is the engraved outline of a dog on a pithos from EBA Askitario-Rafina, around 20 km northeast of Koropi (Fig. 11.11). A dog of those proportions and the size observed at Koropi could probably provide several kilograms of meat, though significantly less than even the smallest pigs or caprines. If we exclude cynophagy as a response to severe famine, the small meat yield of a dog compared to that of the other domestic species further supports interpretation of cynophagy at Koropi as having a primarily cultural rather than practical significance. Whether it was considered a culinary delicacy or had a more symbolic meaning is impossible to distinguish with the available data.

The way that dog carcasses were prepared and consumed sheds additional light on the practice of cynophagy in EBA Attica. The location and types of butchery marks show that dogs were skinned, dismembered and even filleted before they were consumed (Fig. 11.10). Traces of burning were quite rare (Hadjikoumis in prep.), suggesting that dogs were cooked in pots or ovens rather than open fire. There is thus no reason to believe that the preparation of dogs for consumption was different from that of other mammals. That disarticulation marks are more frequent, and those of filleting less frequent, may be attributable to the dog's smaller size compared to other domesticates and not to a radically different way of cooking. The less fragmented state of dog remains may likewise attributable to body size and certainly argues against their consumption as a response to famine and in favor of cynophagy as a cultural choice under normal circumstances.

In the broader context of EBA Greece, the evidence for systematic and regular cynophagy in Attica and most probably other regions of the *circum*-Aegean world deserves closer attention and improved integration with other lines of zooarchaeological and archaeological evidence. The archaeological record of EBA Attica shows strong indications of extensive trading with other parts of the Greek mainland and also with the Cyclades (*e.g.* Kouka 2008; Nazou 2010), the introduction of

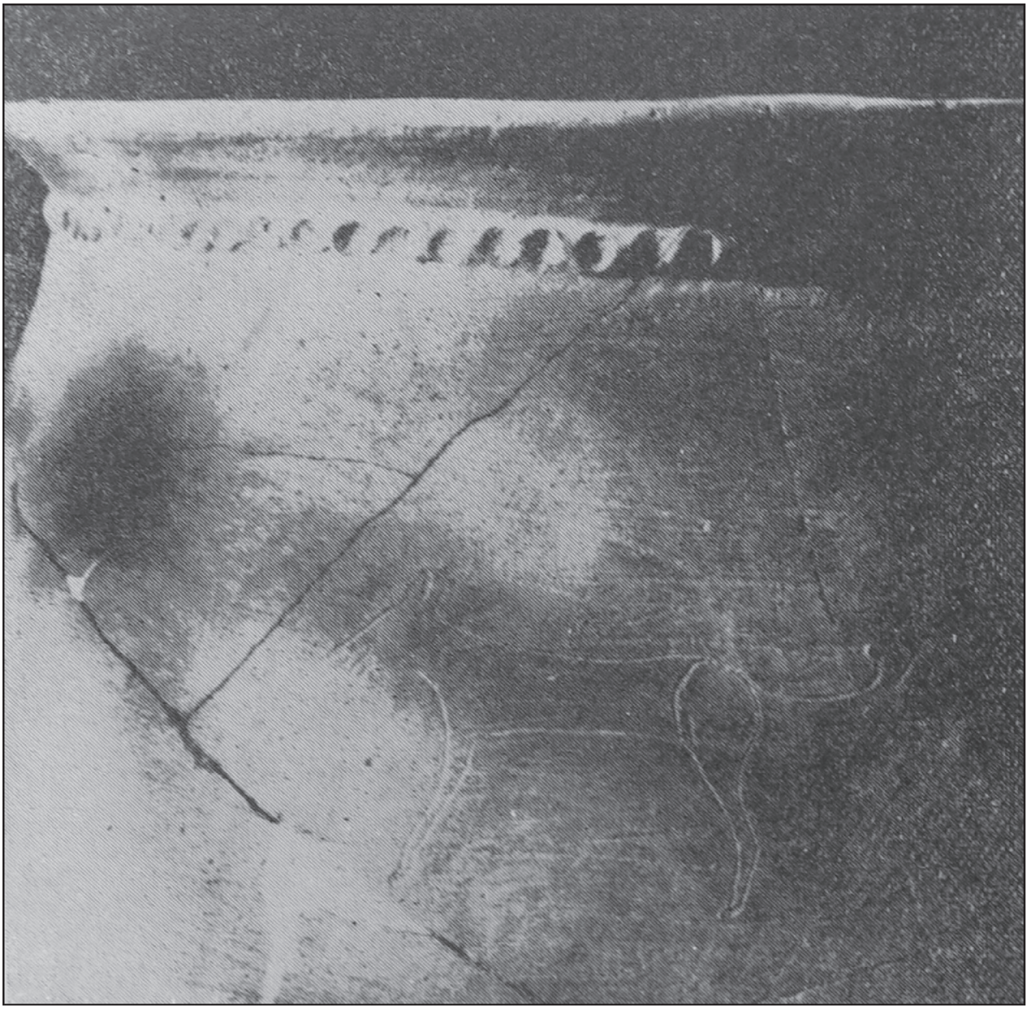

Fig. 11.11. Outline of a dog engraved on a pithos from EBA Askitario-Rafina (source: Theocharis 1954: fig. 8).

important technological innovations such as metallurgy (*e.g.* Gale and Stos-Gale 2002; Kakavogianni *et al.* 2008, 2009a), the emergence of larger settlements with communal spaces and streets accompanied by architectural innovations (*e.g.* Andrikou 2013b; Kakavogianni and Douni 2009; Kakavogianni *et al.* 2009a), as well as a more diverse and elaborate suite of mobile material culture such as pottery (*e.g.* K. Douni, pers. comm.). In such a context, it is easy to imagine how cynophagy, as a practice that was neither ubiquitous nor of uniform intensity between sites, may have become an attractive component of an emerging elite's 'choreography' of social life (Halstead 2012). The consumption of dog meat on a *supra*-household level, is supported zooarchaeologically by the large quantities of dog remains in specific contexts in the settlement at Koropi, by the non-intensive processing of dog carcasses and by the highly structured age profile of the dog population. What remains unknown based on currently available data is whether cynophagy at EBA Koropi was practiced at a community, *supra*-community or sub-community level. Whatever the answer, cynophagy may be considered an important aspect of local identity. In the future, additional data should help address more detailed issues concerning cynophagy in EBA Greece and elucidate the role that this practice played in the emerging complexity of the Aegean world in the 3rd millennium cal BC.

Conclusions

Cynophagy is a practice that deserves more attention and detailed study if we are to achieve an understanding of its origins, development and shifting significance through Greek prehistory. This study, based on sound evidence, establishes that cynophagy was relatively common in EBA Attica and more broadly in Greece. Moreover, the evidence strongly suggests that cynophagy was practiced in a systematic way and under 'normal' circumstances, instead of just being a survival response to extreme events such as famine. This practice, and most probably other social practices articulating with it, formed an important component of local identity at EBA Koropi. The evidence for emerging sociopolitical complexity, economic expansion and technological innovations in EBA Attica, combined with zooarchaeological evidence, suggest that cynophagy played a significant role in the negotiation of social relations between different groups of people on a local, regional or even supra-regional level.

Acknowledgements

This study would have not flourished without the support of many colleagues and institutions. First, I would like to thank the British School at Athens (BSA) for funding this research with a Fitch Laboratory Bursary Award (2011–2012) and a BSA Studentship (2012). The work was carried out in the Fitch Laboratory of the BSA with the support of its wonderful personnel who made my stay there both productive and pleasant. Moreover, I thank the B' Ephoreia of Prehistoric and Classical Antiquities of Greece for granting me study permits for the assemblages presented here, as well as the excavators of the sites Olga Kakavogianni (KMC) and Eleni Andrikou (KP, KT) for allowing access to the material and supporting my research throughout its course. I would like to especially thank Kerasia Douni for invaluable practical help during the study as well as generously sharing information and opinions from her doctoral research on the pottery from KMC. Paul Halstead is particularly thanked for generously handing to me the study of the KMC material, as well as providing valuable advice during data recording and analysis. To avoid lengthy acknowledgements I will resort to listing the rest of institutions and individuals that supported me in various ways during the project: The Wiener Lab (ASCSA), The Archaeological Museum of Brauron,

Angelos Serdaris, Valasia Isaakidou, Eftychia Yannouli, Simon Davis and the many colleagues who shared their opinions with me via the ZOOARCH mailing list.

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