

LEUVEN UNIVERSITY PRESS Reprint from Herom, volume 6.1 - © Leuven University Press

# **CONTENTS**

New Light on the Early Days of Sagalassos and its Surroundings John Lund	7
Late Achaemenid and Early Hellenistic Pisidian Material Culture from Düzen Tepe (SW Anatolia) Dries Daems, Dennis Braekmans, Jeroen Poblome	11
The Pottery of Late Achaemenid Sagalassos: An Overview Dries Daems and Jeroen Poblome	49
A Taste of Time. Foodways and Cultural Practices in Late Achaemenid-Early Hellenistic Düzen Tepe (SW Anatolia) Sam Cleymans, Dries Daems, Bea De Cupere, Elena Marinova, Jeroen Poblome	63
Hellenistic and Italic Amphorae from Sagalassos Patrick Monsieur, Dries Daems and Jeroen Poblome	97
Instructions to Authors	119

# A TASTE OF TIME

# FOODWAYS AND CULTURAL PRACTICES IN LATE ACHAEMENID-EARLY HELLENISTIC DÜZEN TEPE (SW ANATOLIA)

Sam Cleymans<sup>(1)</sup>, Dries Daems<sup>(1)</sup>, Bea De Cupere<sup>(2)</sup>, Elena Marinova<sup>(1)(2)</sup>, Jeroen Poblome<sup>(1)</sup> (1) UNIVERSITY OF LEUVEN, (2) ROYAL BELGIAN INSTITUTE OF NATURAL SCIENCES

## Abstract

During the last two decades studies focusing on food consumption and related cultural practices have become increasingly popular in archaeology. In this paper we contribute to this body of research by examining the foodways at Düzen Tepe. This late Achaemenid-early Hellenistic site in the ancient region of Pisidia (SW Anatolia) was discovered, excavated and studied by the Sagalassos Archaeological Research Project (KU Leuven). This resulted in extensive datasets which allow for a detailed reconstruction on the diet and food practices at this settlement. Wine consumption, examined via ceramic drinking vessels and archaeobotanical remains, seemingly took place in an Anatolian sphere under Achaemenid influence. Dining culture, in turn, is best characterized as a simple cuisine mainly serving 'wet meals' such as stews, soups and porridges which were ladled out of an incurved rim bowl with a spoon or piece of flat bread. As food consumption is considered being a significant aspect of cultural practices, this paper will look into the diet and foodways to deduce to which culture the inhabitants of Düzen Tepe belonged.

## Keywords

Foodways, cultural practices, Düzen Tepe, Sagalassos, diet reconstruction

# A TASTE OF TIME

## FOODWAYS AND CULTURAL PRACTICES IN LATE ACHAEMENID-EARLY HELLENISTIC DÜZEN TEPE (SW ANATOLIA)

Sam Cleymans<sup>(1)</sup>, Dries Daems<sup>(1)</sup>, Bea De Cupere<sup>(2)</sup>, Elena Marinova<sup>(1)(2)</sup>, Jeroen Poblome<sup>(1)</sup> (1) UNIVERSITY OF LEUVEN, (2) ROYAL BELGIAN INSTITUTE OF NATURAL SCIENCES

## Introduction

Food studies traditionally play an important role in archaeology, especially in discussing the production and subsistence value of foods. During the last two decades, mostly postmodernist discussions of food consumption and its social and cultural dimensions were *en vogue* in archaeology<sup>1</sup>, history<sup>2</sup> and social sciences<sup>3</sup> alike.

In this paper, we contribute to this body of research by examining the food practices and foodways at the late Achaemenid-early Hellenistic site of Düzen Tepe (SW Anatolia). Düzen Tepe is located 1.8 km to the South-West of the archaeological site of Sagalassos, and both sites formed part of the ancient region of Pisidia, in the Western Taurus mountains. The settlement of Düzen Tepe is situated on two promontories of a combined *c*. 50 ha, situated at an altitude of 1400 and 1450 above sea-level<sup>4</sup> (FIG. 1). Based on the ceramic evidence, corroborated by numismatics and radiocarbon dating, the period of occupation of Düzen Tepe was dated between the later 5th and 2nd

- 1. Parker Pearson 2003, pp. 2-3.
- 2. Scholliers 2012, pp. 17-41
- 3. Albala 2014, pp. xv-xvi
- 4. Vanhaverbeke et al. 2010, pp. 105-106; Vyncke et al. 2011, p. 2275.



FIG. 1. Map of Düzen Tepe in Pisidia (SW Anatolia), based on different survey techniques. Mapping by S. Aydal and H. Vanhaverbeke.

centuries BC.<sup>5</sup> Following a political framework of periodization relevant for an Anatolian context, the site was inhabited during the Achaemenid (546-333 BC) and Hellenistic (333-25 BC) periods.<sup>6</sup> Its location in relative proximity to the Pamphylian coastal zone showing many Greek influences, and to the Achaemenid centres in Anatolia makes Düzen Tepe an excellent case study to examine cultural influences in its foodways.

Düzen Tepe was discovered by the Sagalassos Archaeological Research Project, then directed by Marc Waelkens and multi-disciplinary surveying campaigns coordinated by Hannelore Vanhaverbeke in 2005 and 2006, followed by excavations between 2006 and 2011, coordinated by Hannelore Vanhaverbeke and Kim Vyncke.<sup>7</sup> Apart from approaching the settlement as such, this programme focused on a large housing unit, dubbed the 'courtyard building', the local defence system, a bakery, a potter's workshop and one presumed public building – the so-called 'big building.'<sup>8</sup> The excavations, mate-

- 6. Following the chronology in Marek 2010, pp. 865-869.
- 7. Vanhaverbeke *et al.* 2010, pp. 106-110.
- 8. Vyncke 2013.

<sup>5.</sup> Vanhaverbeke *et al.* 2010, pp. 118-119; Waelkens *et al.* 2011, 30-31; Poblome *et al.* 2013b, 531; Daems *et al.*, this issue.

rial and interdisciplinary studies provided extensive datasets which make it possible to make a detailed reconstruction of the diet and food practices, as will be done in this paper.

In order to approach cultural practices through the study of ancient diets, three premises need to be considered: 1) that food consumption has a symbolic meaning next to its utilitarian function, 2) that eating practices are varied enough to recognize differences in meaning and 3) that foodways show themselves in material culture and can be linked with specific traditions. As Barry W. Higman argues in his study on 'How Food Made History'9, not all edible food products which are present in our environs are necessarily consumed, setting the first premise. Elizabeth Reitz and Elizabeth Wing<sup>10</sup> make a similar distinction between 'menus', defined as all the foods present for a specific population and which are safe to eat, and 'diet', which are these foods effectively eaten by the community. All different plant and animal species go through a process of cultural, social and political negotiation, in which specific choices are made. Food consumption, therefore, serves as a mirror of society, dependent on many different aspects such as gender, age, social status and cultural identity, resulting in gendered cuisines, class-consumption and national kitchens among other things." Food, as a consumer good, can therefore reflect the cultural practices in a society or community.<sup>12</sup> The second premise is partly detailed by Claude Fischler,<sup>13</sup> who introduced the term 'the omnivores paradox'. As Homo sapiens are omnivores, they have the freedom to choose what to eat, but are constrained in this freedom by the fact that we cannot survive on a single source of food, as specialized eaters do. For studies in cultural practices, this concept implies that our species is compelled on a daily basis to make choices related to their food intake. Additionally, humans are not only forced to consume different foods, but also to prepare them in a variety of ways. As pointed out by Richard Wrangham in his book 'Catching Fire. How Cooking Made us Human,<sup>14</sup> Homo sapiens need so much energy for their brain, that the digestion of raw foods would compete with the energy supply of the brain. Humans thus preferably need to cook most of their foodstuffs, before consuming them.<sup>15</sup> Therefore, these biological factors, forcing us to eat a broad variety of foods and the need of preparing these, raise the amount of choices that need to be made in human food practices. Moreover,

- 9. Higman 2011, p. 3.
- 10. Reitz and Wing 1999, p. 239.
- 11. E.g. Ashley *et al.* 2004; Counihan 1999.
- 12. Bourdieu 1984; Miller 1987; Warde 1997.
- 13. Fischler 1988, pp. 275-291.
- 14. Wrangham 2009; see also Aiello and Wheeler 1995, pp. 199-221; Aiello 2007, pp. 17-29.
- 15. Wrangham 2009, pp. 55-77.

food practices are often materialized in a broad range of objects, ranging from cooking pots to drinking cups, and from furnaces to milling stones.<sup>16</sup> This material culture is not only linked in more or less direct ways to which foods were consumed,<sup>17</sup> but is often considered to form part of specific traditions and practices (i.e. cuisine) too.<sup>18</sup> One way or the other food practices are embedded within social and cultural frameworks, which can be made visible through material culture.

Building on the above-mentioned premises, this paper aims at reconstructing food practices at the late Achaemenid-early Hellenistic site of Düzen Tepe. Meals, however, cannot be studied directly - as is the case with a fibula, an urn or a building - because these are eaten, digested and excreted.<sup>19</sup> Instead, archaeologists are forced to study meals through their waste products and/or the tools used in producing, preparing, serving and consuming these. This paper will focus on two specific consumption practices, the wining and the dining at Düzen Tepe, using an interdisciplinary approach. First, practices of drinking will be looked in to, with a specific focus on wine consumption. In a paper on the archaeology and anthropology of alcohol consumption, Michael Dietler<sup>20</sup> wrote that "the consumption of alcohol is usually enveloped by a set of cultural rules and beliefs that is even more emotionally charged than with other foods and drinks," which makes the study of wine drinking interesting for approaching cultural practices. For the purpose of this paper, ceramological, archaeobotanical and palynological evidence will be considered for documenting wining practices. As for dining, an evaluation is made of the faunal and botanical consumption waste and of the material culture related to the preparation and consumption of foods, to reconstruct the general food consumption and foodways of the inhabitants of Düzen Tepe. By reconstructing the everyday fare, a better understanding of the local community and some of its cultural practices can be obtained.

## Wining

In his well-known book '*Ancient wine. The Search for the Origins of Viniculture*', Patrick McGovern, traced wine culture back to Neolithic times and studied

- 17. Urem-Kotsou and Kotsakis 2007, p. 226.
- 18. *Ibidem*; Dusinberre 2013, p. 125.
- 19. Caple 2006, pp. 16-17.
- 20. Dietler 2006, p. 232.

<sup>16.</sup> Bergier 1998, p. 3; in case of ceramics: Sinopoli 1991, p. 122; also see Rice 1987, pp. 208-210; Mills 1999, p. 100; Orton 2005, p. 217.

the further spread throughout the ancient world.<sup>21</sup> In the Persian and Greek worlds too, wine consumption was a common practice and by far the most popular alcoholic beverage in most Mediterranean cultures in antiquity. Is this also true for a small-scale Pisidian community such as Düzen Tepe?

#### THE ARCHAEOBOTANICAL REMAINS

During the Düzen Tepe excavations, 515 identifiable charred plant remains were found in 36 samples with a total volume of 876 litres of floated sediment. After cereal grains (55% of the assemblage) and pulses (16%), remains of *Vitis vinera* were the most abundant (n=42, 8%; FIG. 2). The grape remains consisted of pips, fragments of charred pulp with attached skin and few stalks. No specific concentrations of grape were found, but here it should be mentioned that due to the specific deposition conditions of the site and poor preservation, no accidentally charred layers with concentrations of plant remains were preserved and the average concentration of plant remains, *c*. 1-1.5 identifiable items per litre, is very low. The remains were found distributed in all excavated areas of the site and this frequent occurrence is indicative for the relative importance of the grape for the economy of the site. This fact should be considered also in the light of the rather poor preservation of charred plant remains at the site and the strong fragmentation of the plant material. Therefore, such relatively large quantities of *Vitis vinera* provide evidence



FIG. 2. Graph of the identified archaeobotanical remains from Düzen Tepe.

#### 21. McGovern 2003.

for the cultivation and processing of grapevines in late Achaemenid-early Hellenistic times in (the neighbourhood of) Düzen Tepe. The cultivation of vine has also been attested in the palynological evidence. The pollen core G99 from Gravgaz, a marshy area located *c*. 25 km southwest of Düzen Tepe, dated the appearance of viticulture between 390-365 calBC and 89 calBC-5 calAD (subzone G-2a).22 The pollen of Vitis vinera represented only 0.3% of the total sample, but since grapevine is a self-pollinating plant, this was considered a large percentage.<sup>23</sup> In the pollen core taken in the later, Eastern Suburbium of Sagalassos (PQ01), the Hellenistic zone (zone 1) contained up to 2% of Vitis vinera pollen.<sup>24</sup> Marleen Vermoere argued that the pollen core from the Eastern Suburbium was only representative for a radius of 500 meters.<sup>25</sup> Therefore, neither these results nor those of the Gravgaz core can be extrapolated to Düzen Tepe. Nevertheless, the presence of viticulture in the environs of this archaeological site, as well as the regular and frequent occurrence of grape remains in the excavation contexts indicate that vine products were consumed and processed on site.

The presence of grapes and derivatives having been attested at Düzen Tepe and its environs, their use needs discussing. In general, grapes can be used for the production of wine or they can be consumed in fresh or dried – raisins – state.<sup>26</sup> The leaves are edible too and today continue to be an ingredient in Turkish dishes such as *dolma*. Kim Vyncke, in her doctoral dissertation on Düzen Tepe, interpreted the relatively large quantities of grape remains as the result of local wine production.<sup>27</sup> Yet, when the state of the remains is compared with the experimental paper of Evi Margaritis and Martin Jones<sup>28</sup> this interpretation seems incorrect. Indeed, the majority of grape remains consisted of grape stones (30 out of 42) and were found distributed over the different excavations, which is consistent with interpretation C of Margaritis and Jones, stating that: "If small quantities of grape pips are found loose, they probably represent the by-products of eating whole grapes or raisins."<sup>29</sup> Nevertheless, the presence of 12 pulp parts of the grapes as well as some grape peduncles suggests the use of waste products of the process of wine

- 23. Vermoere 2004, p. 138.
- 24. *Ibidem*, pp. 180-187.
- 25. Ibidem, pp. 171-173.
- 26. Wilkins and Hill 2006, pp. 166-184; Margaritis and Jones 2006, p. 784; Curtis 2001, pp. 294-295; Brothwell and Brothwell 1969, pp. 146-147.
- 27. Vyncke 2013, p. 226.
- 28. Margaritis and Jones 2006, pp. 784-805.
- 29. Ibidem, p. 800.

<sup>22.</sup> Bakker et al. 2012, pp. 253-259; Vermoere et al. 2002, pp. 578-579; Vermoere 2004, p. 133, pp. 136-139; Vermoere et al. 2000, pp. 580-589; Vermoere et al. 2001, 37, pp. 54-55.

making or wine must as fuel or fertilizer.<sup>30</sup> Given the bad preservation of plant remains at Düzen Tepe and the taphonomic processes at the site, larger quantities of these pulp parts must have entered the archaeological record than are represented in the excavated assemblage. Therefore, these finds suggest that grapes were important for the economy of the site and it cannot excluded that it was utilized for wine production.

#### THE CERAMICS

One of the characteristic pottery types related to wine consumption during the discussed time frame was the so-called Achaemenid bowl (A120; FIG. 3).<sup>31</sup> Elspeth R.M. Dusinberre, in her study of these drinking vessels at ancient Sardis, defined the Achaemenid bowl as having "a shallow body and a small base, sometimes flat and sometimes with an omphalos (...) An everted rim rises from a carination that may be more or less well defined."<sup>32</sup> A similar definition was given by Sedef Çokay-Kepçe and Matthias Recke studying the Hellenistic ceramic material in a 2nd century BC *bothros* at Perge in the neighbouring region of Pamphylia: "The Achaemenid bowl itself



FIG. 3. Collection of some Achaemenid bowls from Düzen Tepe.

- 30. Ibidem, pp. 799-800.
- 31. For a detailed description of the ceramic typology, see Daems et al., this issue.
- 32. Dusinberre 1999, p. 76; 2003, p. 176.

has a narrow body and an everted rim, which makes a groove on the junction with the emphasized shoulder."<sup>33</sup> Both descriptions are consistent with some of the bowls found at Düzen Tepe. So far, 11% of the ceramic material was identified as fragmented Achaemenid bowls.<sup>34</sup> The fabrics used for these vessels belonged mainly to a range of finer wares.<sup>35</sup> The majority of the attested fragments consisted of locally produced fabrics, mainly buff wares (Fabric 237) and occasionally orange-red fabrics (Fabric 239). One fragment was made from a coarser common ware (Fabric 227). Additionally, a small number of fragments were found produced with specifically selected clays collected from the North-Western parts of the nearby Çanaklı valley (Fabric 11), at around 5 km from Düzen Tepe. Finally, a few fragments were found imported from a more distant, hitherto unknown source.

Ceramic Achaemenid bowls are published from sites such as Perge,<sup>36</sup> Sardis,<sup>37</sup> Kelainai,<sup>38</sup> Gordion,<sup>39</sup> Kale Tepe,<sup>40</sup> Seyitömer Höyük,<sup>41</sup> Persepolis,<sup>42</sup> and Pasargadae.<sup>43</sup> The majority of Achaemenid bowls in the Düzen Tepe assemblage are characterized by straight flaring collars, with only a few exceptions having a curved collar. Furthermore, most of the Düzen Tepe examples range between 12 and 23cm in diameter, and can be characterized as shallow, while some bowls with a smaller diameter are deeper. The difference in shape can possibly be explained in chronological terms – in parallel with those from Sardis<sup>44</sup> – rather than by cultural choice. As the broad range of published Achaemenid bowls indicates, this vessel was quite common throughout Achaemenid Anatolia. The Achaemenid bowl continued to be used in later Hellenistic Sagalassos<sup>45</sup> in its own Hellenistic tableware (Fabric 11).<sup>46</sup> These clays would come to be used systematically in Hellenistic and Roman imperial Sagalassos for the production of tablewares.<sup>47</sup> In Roman imperial times,

- 33. Çokay-Kepçe and Recke 2007, p. 84.
- 34. Material studies of pottery from Düzen Tepe identified 97 possible fragments of Achaemenid bowls on a total of 835 diagnostic sherds, roughly 11% of the total study assemblage, that could be linked to a minimum number of 35 distinct bowls.
- 35. Daems et al., this issue.
- 36. Çokay-Kepçe and Recke 2007.
- 37. Dusinberre 1999; 2003, pp. 172-195.
- 38. Summerer et al. 2011, Pl. 3, nr. 26 a-b; Lungu 2016.
- 39. Stewart 2010, Fig. 26A.
- 40. Hürmüzlü et al. 2009, Fig. 10.
- 41. Coşkun 2011, Fig. I-II-III.
- 42. Schmidt 1957, Plate 72, no. 1.
- 43. Stronach 1978, pp. 242-243 no. 13.
- 44. Dusinberre 1999, pp. 91-92.
- 45. Poblome *et al*. 2013a, p. 199.
- 46. Daems and Poblome, this issue.
- 47. Neyt et al. 2012.

when Sagalassos Red Slip Ware (SRSW) was launched, this bowl is still represented as type 1A120,<sup>48</sup> as one of the latest examples of Achaemenid bowls remaining in production, until the 2nd century AD.

In general, Achaemenid bowls are thought to have been wine drinking cups,<sup>49</sup> although other beverages such as water, milk or beer could have been drunk out of these as well.<sup>50</sup> According to Xenophon (Cyr. 1.3.8) Achaemenid bowls were filled with wine and rested on three fingers, a practice which is iconographically attested in Achaemenid Anatolia.51 The Persian tradition of wine consumption is different from the Greek symposion, where wine was drunk from a *kalyx* or *skyphos*, cups with a handle and a flat or ring base, which allowed the cup to be placed back on the table. Another difference between Greek and Persian wine consumption was that Persian palm or grape wine was not diluted with water, as was the Greek custom.52 This was mentioned by Aristophanes (Acharneis 72-73): "And those pitiless Persian hosts! They compelled us to drink sweet wine, wine without water, from gold and glass cups." Aristophanes mentioned glass and gold cups, as did other classical authors.53 In fact, ceramic bowls, such as the ones found at Düzen Tepe, are a skeuomorphic emulation of precious metal prototypes, which were mainly found in the political centres of Persian rule.<sup>54</sup> Dusinberre concluded, based on the morphological standardization of the Achaemenid bowls at Sardis and the similarities in iconographic representations of wine drinking in Achaemenid Anatolia, that, within this part of the Persian empire, the traditions in wine consumption were very congruent.55

The Greek and Lydian tradition of mixing wine with water resulted in the frequent occurrence of mixing vessels, such as *kraters*, in the material record throughout the Greek world. For Düzen Tepe two possible fragments of large basins/*kraters* were identified, one made from a fine Çanaklı fabric (Fabric 11), and one tentatively identified in a common ware fabric (Fabric 232; FIG. 4). The presence of one or two possible *kraters* should not necessarily imply the consumption of diluted wine: these mixing bowls could also have served to temper the wine with spices and herbs. The pres-

- 48. Poblome 1999, p. 304.
- 49. Dusinberre 2003, p. 132; Çokay-Kepçe and Recke 2007, pp. 86-87.
- 50. Dusinberre 1999, p. 96.
- 51. Miller 2011, pp. 97-120.
- 52. Laudan 2013, pp. 63 and 69.
- 53. Herodotos, Hist. VII .190 and IX.80; Xenophon, Cyr. V.2.7; Anab. IV.2.27 and IV.4.21.
- 54. Simpson 2005, pp. 104-108; Dusinberre 2013, pp. 128-136.
- 55. Dusinberre 2013, pp. 139-140; see also Miller 2011, pp. 97-120 for the iconography of wine drinking.



FIG. 4. Handle of one of the *kraters*/basins.

ence of just two fragments at any rate indicates that mixing practices of any kind were in general not very common. Moreover, these basins could have served completely different purposes.

When it comes to serving wares, such as jugs, the majority of the material is characterized by simple rims, slightly thickened and everted to facilitate the pouring of liquids. A clear distinction can be made between vessels with a narrow opening (H100/110; *c*. 8% of the ceramic material), probably intended for serving more precious liquids such as wine, and those with broader necks (H101/111; *c*. 8.5%) likely used for serving water. In addition to the variety of jugs with fairly simple rims, some more distinct types can be recognized. One of those is the jug with trefoil-shaped rim (H102/122), of which only 5 examples were recorded at Düzen Tepe (FIG. 5). This type is characterized by an S-curved profile and cloverleaf-shaped mouth. The ceramic versions are believed to have resulted from skeuomorphism of metal prototypes. Both in the Persian east and the Greek west, trefoil jugs appeared around the 5th century BC and continued to exist in Athens into the late 2nd to early 1st century BC.<sup>56</sup>

Equally interesting as the pottery types present at Düzen Tepe are those that remained absent. First, there is a lack of Greek world drinking cups – *kantharoi, skyphoi* and *mastoi* – at Düzen Tepe. The only possible ref-

56. Sparkes and Talcott 1970, p. 204; Rotroff 2006, p. 71.



FIG. 5. The most completely preserved trefoil jug.

erence to such cups is one body sherd which could have belonged to a kantharos.57 The lack of mastoi seems to be specific to Düzen Tepe, since this cup is documented in Hellenistic Sagalassos as observed in the control excavations on the Upper Agora.58 Other wine-related pottery from a Greek sphere of influence – such as the table amphora, *lagynos*, *chous* and olpe - are also missing, as well as West Slope Ware which was frequently attested throughout the contemporary eastern Mediterranean coastlands.<sup>59</sup> One body sherd might be attributable to a *lagynos*, but this is uncertain as well.<sup>60</sup> Other typical Persian drinking vessels such as the *rython* and roundbottom bowls, often found together in Achaemenid Anatolia,61 were not recorded at Düzen Tepe either. Transport vessels for wine, such as amphorae, are completely absent from Düzen Tepe. The lack of amphorae can be interpreted in three ways: first, these containers might all have been dumped in a specifically designated location which is not yet identified. A second option is that wine was imported in perishable containers, such as wooden barrels or leather bags. Finally, it is possible that long distance transportation of wine did not occur at Düzen Tepe but that the inhabitants relied on a local or regional viticulture.

- 57. Poblome et al. 2013b, p. 531.
- 58. On these excavations: Talloen and Poblome 2016.
- 59. Rotroff 2002.
- 60. *Ibidem*, pp. 117-118.
- 61. Dusinberre 2013, pp. 129-130; Lungu 2016, p. 456.

#### Wine consumption at Düzen Tepe

As the ceramic and archaeobotanical material shows, the evidence for wine consumption is rather scarce and mostly circumstantial. Although Achaemenid bowls clearly served as wine drinking vessels in the Persian heartland and the elite-culture in Achaemenid Anatolia, for the inhabitants at Düzen Tepe this connotation was all but absent. The same is true for the small openings of some jug types. These can point to a function in wine serving, but other beverages or condiments can be poured from these as well. The few pulp parts and grape peduncles are the only proxies for wine production in or near Düzen Tepe and alternative hypotheses can be formulated too (e.g. the eating of grapes and raisins or the making of grape juice). Nevertheless, when combining the available evidence some degree of wine consumption at Düzen Tepe can be postulated. If alcoholic beverages were consumed in this settlement, wine is the most likely candidate as it was the only one which could be preserved beyond several days in antiquity.<sup>62</sup> The lack of amphorae furthermore suggests that wine was not imported from longer distances, even though the wine trade flourished at that time in the Eastern Mediterranean.<sup>63</sup> Possibly the remoteness and scale of settlement are at play here as well. Therefore, the wine which was drunk at Düzen Tepe was most probably brought in from places nearby the settlement or was even processed on site, as the palynological data and the presence of relatively large amounts of archaeobotanical grape remains corroborates. The waste products then could have been used at Düzen Tepe as fuel, which is sustained by the fact that the remains were charred. The nearby Ağlasun and Basköy valleys, both having very fertile soils, as well as the southwards oriented slopes in the area are the best candidates for viniculture.

The popular use of Achaemenid bowls for the consumption of wine, as well as the lack of *symposium* wares such as *kantharoi* and *skyphoi*, which were popular in the Greek world, seemingly points to a tradition à *la Perse*. A comparison between the Persian court banqueting, as described by classical authors<sup>64</sup>, and the wine consumption in the small Pisidian settlement of Düzen Tepe is irrelevant, however. The study of Margaret C. Miller on the Achaemenid *symposion* in Anatolia also exclusively focuses on the elite

<sup>62.</sup> Dietler 2006, p. 238.

<sup>63.</sup> Foley et al. 2012, p. 397.

<sup>64.</sup> Herodotos I.133; Polyaenus IV.3.32; Heracleides of Cumae, *Persica* (FGrH 689 F2); Athenaeus XIII, 607f-608a, 781a-782f, 784a-b. See Kuhrt 2010, pp. 604-615 for an overview.

culture, as her main sources are iconographic representations.<sup>65</sup> Her characterization of Achaemenid Anatolian wining culture as 'diacritical drinking', meant to "naturalize and reify concepts of ranked differences in the status of social orders or classes"<sup>66</sup> does not hold true for Düzen Tepe, where no indications for elite culture have been observed so far. In contrast, Vasilica Lungu, studying the Achaemenid bowls from Kelainai, interpreted these drinking cups not as an *imitatio regis*, but as being an Anatolian product which became fashionable under Persian rule.<sup>67</sup> Indeed, wining at Düzen Tepe is best characterized in an Anatolian sphere under Achaemenid influence. Here, specific material culture, such as the Achaemenid bowl, and maybe even certain traditions, like the holding of the bowl on three fingers, were adopted yet adapted to local practices.

## Dining

In his paper on food and identity, anthropologist Claude Fischler wrote "in *Homo sapiens* food not only nourishes, but also signifies."<sup>68</sup> With this thought, we will attempt the reconstruction of the food practices at Düzen Tepe by focusing on the variety of foods consumed and the related dining practices, based on the faunal and floral data, supplemented by the ceramic material. The order in which the material is discussed follows the production process of the foods at Düzen Tepe, starting from the basic ingredients, after which they got processed, cooked, served and finally consumed.

The faunal and archaeobotanical evidence

The archaeozoological study of the faunal remains collected at Düzen Tepe concluded that the majority of the bones can be interpreted as consumption refuse and belonged to domesticates. Among these, sheep/goat were best represented (72%), followed by cattle (19%) and pig (9%) (FIG. 6).<sup>69</sup> Sheep and goat were equally important, although goats were better adapted to the climate and vegetation around Düzen Tepe. Other domesticates were represented by much smaller quantities, and included chicken, dog, and equids. The absence of cut marks on the canine and equid remains indicated that these animals were most likely not consumed. The share of wild mammals and wild fowl was very low

- 66. Dietler 2001, p. 85.
- 67. Lungu 2016, p. 467.
- 68. Fischler 1988, p. 276.
- 69. De Cupere et al. forthcoming; De Cupere unpublished data.

<sup>65.</sup> Miller 2011.



FIG. 6. Graph showing the percentages of identified cattle, sheep/goat and pig remains and their milk yield.

(<1%). Hunting played a minor role in the local food economy. According to their slaughtering pattern (a combination of age and sex ratios), sheep and goat were mainly raised for their milk and wool, and ultimately, their meat.<sup>70</sup> Equally, cattle were most likely kept for both their milk and meat, while pigs were reared for their meat only. Considering the possible meat yield of these domesticates<sup>71</sup>, it is clear that cattle were the main meat provider. Indeed, cattle produces more meat than pig, which in its turn will provide more meat than sheep and goat. Also, the relative amount of milk produced by cattle must have been much higher (60%) than for sheep (14%) and goat (25%).<sup>72</sup>

Stable isotope analysis ( $\delta^{13}$ C and  $\delta^{15}$ N) was carried out on four human bone samples of skeletal remains excavated at Düzen Tepe,<sup>73</sup> showing a mean  $\delta^{13}$ Cvalue of -19.4‰ ± 0.4‰ and a mean  $\delta^{15}$ N-value of -9.7‰ ± 0.7‰. The  $\delta^{15}$ Nvalue serves as a proxy for the intake of animal proteins. The raised ratio means that, although scholarly tradition has it that meat was only rarely consumed in antiquity,<sup>74</sup> animal products seem to have been consumed on a regular basis at Düzen Tepe.<sup>75</sup>

- 70. De Cupere et al. forthcoming.
- 71. See for example Vigne 1991.
- 72. Calculated based on the numbers published by John Robb 2007, p. 138; 350 kg/year of milk for cattle, 45 kg/year for sheep and 77kg/year for goat.

- 74. Moreno 2007, pp. 18-19; Garnsey 1999, pp. 16-17; Von Reden 2007, pp. 394-396; Ekroth 2007, pp. 249-272.
- 75. Fuller et al. 2012, pp. 160-165.

<sup>73.</sup> Fuller et al. 2012.

Of the collected identifiable plant remains, 55% belonged to cereal grains. After removing the inedible plant portion from the archaeobotanical dataset, the percentage of grain found at Düzen Tepe increases to c. 66%. As expected for antiquity,<sup>76</sup> grains were the most consumed plant species at Düzen Tepe. The most important cereal crop is free threshing wheat (Triticum aestivum -43%), followed by barley (Hordeum vulgare - 27%). The remaining 23% was non-determinable cereal grains reflecting the bad preservation at the site. Pulses stood for 16% of the archaeobotanical finds, of which over 62% were cultivated pulses that were not further determinable. The following species were identified: bitter vetch (Vicia ervilia, 30%), peas (Pisum sativum, 5%), lentils (Lens culinaris, 2%) and chick peas (Cicer arrietinum, 1%). Because pulses are easily storable for long periods and because they are complementary to grains in their nutritional values,77 these plant foods were very popular in antiquity.<sup>78</sup> As an important source of proteins, they can serve as a meat substitute.79 The abundance of bitter vetch (Vicia ervila) can be explained by the fact that it is a very drought resistant crop, useable on poor quality fields,<sup>80</sup> such as the Düzen Tepe promontories. The disadvantage, however, is that vetch requires a lot of processing, because left unprocessed it is poisonous.<sup>81</sup> Various fruits were present as well: as mentioned, grapes were the most abundant (8% of all identified at the site plant remains), but also single finds of olive (Olea europaea) and fig (Ficus carica) occurred. Two fragmented stone pits of the genus Prunus to which cherry, plum, almond or apricot could belong, were identified. Most of these fruits could have been collected from the wild. Their cultivated forms were introduced and grown on a larger scale in Asia Minor under Roman rule.<sup>82</sup> One seed of the genus Rubus was found. To this genus belong many berries such as raspberries and blackberries. Three seeds of the Lallemantia iberica were recorded as well. This plant was already used in the Bronze Age for the extraction of oil.<sup>83</sup> The remaining 13% of plant remains were identified as weeds, ruderal plants and such growing in meadows.

The cereal crops, quite common at Düzen Tepe, can be used in a variety of ways. Bread, porridges and groats added to stews and soups are among the possibilities. Additional information on the use of grain is given by the

78. Wilkins and Hill 2006, pp. 114-115; Garnsey 1998, pp. 214-225; Garnsey 1999, p. 15.

81. Papathanasiou et al. 2013, p. 25; Megaloudi 2006, p. 55.

83. Jones and Valamoti 2005, pp. 571-575; Megaloudi 2006, p. 57.

<sup>76.</sup> Garnsey 1999, pp. 17-19.

<sup>77.</sup> Robb 2007, p. 132; McGee 2013, pp. 482-484; Zohary et al. 2012, pp. 75-76.

<sup>79.</sup> Zohary et al. 2012, p. 75.

<sup>80.</sup> Valamoti et al. 2011, p. 389; Zohari et al. 2012, p. 92.

<sup>82.</sup> Zohary et al. 2012.



FIG. 7. The most complete preserved hopper mill from Düzen Tepe.

presence of two types of mill stone. A total of five hopper rubbers (FIG. 7), mostly fragmented, were found in the Düzen Tepe excavations.<sup>84</sup> These Olynthian mills probably originated in the 7th century BC in the Levant,85 spread throughout the Mediterranean world and remained popular into the 1st century BC.<sup>86</sup> At Sagalassos they were still in use in late antiquity. These millstones could process large quantities of grain, but needed an architectural set-up.<sup>87</sup> The Düzen Tepe examples were cut from a non-local volcanic stone. Another type of mill stone at Düzen Tepe is the saddle guern. This smaller type - convex on top and flat on the bottom, which makes it suitable for rubbing it manually over a flat stone - was found in the so-called courtyard building.<sup>88</sup> Saddle querns were already present in Egypt in the second millennium BC, but the type which the one from Düzen Tepe shows the most resemblance to, originated around the 6th century BC.<sup>89</sup> Hopper rubbers are more expensive and less transportable than the saddle querns; the latter were, therefore, more likely being used in households, while the former were meant for more professional or communal purposes.90

The flour from the hopper rubber is ideal to make bread. The dominant cereal crop on site, *Triticum aestivum/durum*, has the best qualities to produce bread products. The archaeobotanical record from the site also shows

- 84. Vyncke 2013, pp. 208-211.
- 85. Frankel 2003, pp. 7-11.
- 86. Curtis 2001, pp. 286-287.
- 87. Frankel 2003.
- 88. Vyncke 2013, p. 209.
- 89. Ibidem, pp. 280-281; Moritz 1958, pp. 18-21 and pp. 29-41.
- 90. Curtis 2001, p. 284.

charred crusts consisting of porous matter, inside of which fragments of cereal grains are visible (FIG. 8.A). Those crusts possibly represent remains of food preparation as the cereal grain traces point to remains of charred porridge (for example bulgur) or even the remains of bread baking. The rather porous consistency of the matter most probably corresponds to a certain kind of fermentation (for example leavening of dough). Further analyses of the crusts under high magnification showed that these contained numerous small (grinded) fragments of wheat pericarps and other tissues of cereal grains (FIG. 8.B). The overall evidence gives strong arguments to interpret the find as remains of bread baking.<sup>91</sup>



- FIG. 8.A. Charred porous matter with traces of cereal grains; 8.B. Scanning electron images of part of the same crust: remains of wheat (*Triticum*) pericarp and underlying aleuron layer indicated with arrow (left, scale 100  $\mu$ m) and porous matter in close view containing cross section of cereal pericarp with aleurone layer indicated with arrow (right, scale 270  $\mu$ m).
- 91. Hansson 1994; Heiss 2013, pp. 48-49.

#### The ceramics

Cooking pots (Q200/210) represent 19% of the total ceramic assemblage of Düzen Tepe (FIG. 9). Although some minor variations occur in the rim, they can be grouped under one general description. A typical cooking pot in Düzen Tepe has an ellipsoid-shaped body. The larger specimens tend more towards a globular shape and the smaller ones often show an S-curved profile. The collar can be slightly out-turned, which mainly occurs with the smaller pots, but is often absent or very short. Raised bases are most common, but flat bases are present too. The handles consist mostly of straps, sometimes ribbed, placed on the shoulder and connected to the collar. Rounded handles only appear on the smaller cooking vessels. Furthermore, sherds of cooking vessels can be easily recognized by fire clouding and burn marks on the outside. These vessels were most commonly produced in a distinct cooking ware fabric, characterized by a gritty light brown to red brown matrix and frequent quartz, pyroxene, biotite, and amphibole inclusions<sup>92</sup> (Fabric 230). The concept of a cooking pot is, by nature, specifically functionally oriented. The potter tries to find a combination of a receptacle able to survive thermal shock, which is light, yet robust, and is adapted to the available cooking technologies and preferred menus. This resulted in only minor variations in details such as the handles, base or rim, "but the general shape and proportions were difficult to improve,"93 which makes it more difficult to trace similar morphological traditions.



FIG. 9. Two of the cooking pots from Düzen Tepe.

- 92. Braekmans 2010, p. 134.
- 93. Stewart 2010, p. 167.

The function of cooking vessels seems rather easy to describe: a receptacle in which food is cooked or heated. Nevertheless, it is possible to define the function in more detail. As Paul Arthur suggested, deep, closed cooking pots were more suitable for boiling and stewing, which resulted in (semi-)liquid meals.94 This hypothesis is supported by many ceramologists dealing with these kinds of vessels.95 Archaeological experiments led to the conclusion that cooking pots with a volume of c. 3 litres were best suited for savoury dishes such as stews and soups, while the smaller vessels of about 1 litre were more often used for cooking milk and porridges.<sup>96</sup> For roasting large pieces of meat or fish, these cooking pots are less useful, but open casseroles would serve the purpose well.<sup>97</sup> Open cooking vessels and pans have not been documented in the archaeological record of Düzen Tepe. The raised and flat bases which are a typical attribute of the Düzen Tepe pots make it possible to place these next to the hearth or above the fire on a grate.98 However, as the fire clouding suggests, the cooking pots still came into direct contact with the fire, suggesting a position next to the flames. Yet, two fragments of presumed braziers (FIG. 10) provide some additional information on the cooking practices. If the pots were placed on top of these, they would still show fire clouding around and on the bottom of the base, which was attested for some better preserved cases. As hearths are the most likely option, the two brazier fragments are most likely an underrepresentation, as the fire clouding on the cooking vessels indicates.



FIG. 10. A brazier fragment.

- 94. Arthur 2007, p. 18.
- 95. Rotroff 2006, pp. 165-167; Jackson and Tidmarsh 2011, p. 92; Stewart 2010, pp. 168-169.
- 96. Curta 2001, p. 286.
- 97. Arthur 2007, p. 18; Jackson and Tidmarsh 2011, p. 92.
- 98. Pellegrino 2007, p. 229; Dusinberre 2013, p. 127.

As the variation in design of a cooking pot is limited, parallels need to be sought in the attributes. The most distinctive attributes here are the bases. Flat bases are known in Achaemenid Sardis<sup>99</sup> and in middle Hellenistic Gordion.<sup>100</sup> The cooking pots of the latter site in particular show high similarities with the cooking pots found at Düzen Tepe, not only in having similar bases, but similar body shapes and rims as well. According to Elspeth Dusinberre<sup>101</sup> cooking pots with flat bases were introduced in Anatolia under Achaemenid rule. Raised bases in turn, appear in a sounding at Xanthos<sup>102</sup> dated to the early 5th century BC, in the Hellenistic material of Salamine on Cyprus<sup>103</sup> and a 4th century context in Troy.<sup>104</sup> In contrast, the Greek mainland and the Levant<sup>105</sup> preponderantly made use of round base cooking pots. The cooking vessels at Düzen Tepe thus seem to be part of a broader Anatolian tradition in Achaemenid times.



FIG. 11. Incurved rim bowls from Düzen Tepe.

The *echninus* bowls (B170; FIG.11), a simple spherical recipient on a ring foot and with an incurving rim, is the most frequently represented table ware type

99. Dusinberre 1999, pp. 94-95.

- 100. Stewart 2010, Fig. 92 F, 96 A, 101 C, 115 A, 189-191 and 215-217.
- 101. Dusinberre 2013, p. 127; Dusinberre 1999, pp. 94-95.
- 102. Yener-Marksteiner 2007, pp. 97-98 and Abb. 11, 12.
- 103. Diederichs 1980, Pl. 5, no. 55-58
- 104. Berlin 2002, Plate 19, no. 117-123
- 105. Rotroff 2006, Fig. 71-81; Edwards 1975, plate 27-28; Hayes 1991, Fig. XXVIII-XXXVI; Jackson and Tidmarsh 2011, Fig. 81-83.

found at Düzen Tepe (about 13% of the total amount of diagnostic material). Shannan M. Stewart in her study of the Hellenistic pottery from Gordion defined incurved rim bowls as "a small open vessel with an incurving rim, a deep interior with the maximum diameter near the upper quarter of the wall, and a ring or false ring foot."<sup>106</sup> Susan I. Rotroff's definition in her volumes on the Hellenistic ceramics from the Athenian Agora is more concise and describes *echinus* as "bowls with incurved rims."<sup>107</sup> The most frequent fabrics used in Düzen Tepe for producing this type are 'orange-red table wares' (Fabric 239), 'buff wares' (Fabric 237) and different types of 'lime-tempered common wares' (Fabrics 227, 228, 229 and 232). This type remained in use at later Hellenistic Sagalassos and lived on in Sagalassos Red Slip Ware as type 1B170 until late antiquity.<sup>108</sup>

Defining the function of the incurved rim bowl is not as straightforward as it is for the Achaemenid bowl. The functional propositions vary between wine<sup>109</sup> and food<sup>110</sup> consumption, although the majority of scholars refer to these as bowls for the latter. Indeed, as Stewart pointed out with some experiments, drinking out of a bowl with an incurved rim is very hard to do without spilling.<sup>111</sup> Apparently, soups, stews, porridges and side dishes such as greens, fruit and nuts were quite easily consumed from an *echinus*; the (often high) standing ring and incurved rim make it possible to hold the bowl in one hand while scooping out the meal with a piece of bread or a spoon.<sup>112</sup>

Incurved rim bowls became very popular in Anatolia by the end of the 4th and during the 3rd centuries BC, while in the 4th century BC they were already commonly found in the Aegean.<sup>113</sup> However, as pointed out by Elspeth Dusinberre, the shape was represented originally in the 7th century BC in Iran and Media. At Sardis the *echinus* seemed to appear together with the Achaemenid bowl under Achaemenid rule.<sup>114</sup> During both the Achaemenid and the Hellenistic periods, the incurved rim bowl was present in large numbers on sites such as Pasargadae,<sup>115</sup> Nea Paphos,<sup>116</sup> Palaipaphos,<sup>117</sup> Dülük Baba

- 106. Stewart 2010, p. 195.
- 107. Rotroff 1997, p. 161.
- 108. Van der Enden *et al.* 2014.
- 109. Schäfer 1968, pp. 37-38.
- 110. Rotroff 1997, p. 161; Stewart 2010, p. 196; Jackson and Tidmarsh 2011, p. 13.
- 111. Stewart 2010, p. 196.
- 112. Ibidem; Jackson and Tidmarsh 2011, p. 13.
- 113. Rotroff 1997, p. 161; Dusinberre 1999, p. 95; Çokay-Kepçe and Recke 2007, p. 93.
- 114. Dusinberre 1999, p. 95.
- 115. Stronach 1978, pp. 248-249 no. 5-16.
- 116. Hayes 1991, pp. 158-159 and Fig. XIV and LVII.
- 117. Lund 1993, Fig. 40 c-44 c-54.

Tepesi,<sup>118</sup> Xanthos,<sup>119</sup> and Jebel Khalid.<sup>120</sup> Since these bowls were abundant in the Eastern Mediterranean and often produced locally, resulting in minor variations, it is quite difficult to find exact parallels. Morphological resemblance of the Düzen Tepe material is mainly found with the early Hellenistic shallow *echinus* bowls from Gordion,<sup>121</sup> with the partially glazed echinus bowls from Sardis<sup>122</sup>, the simple incurving rim bowls of Pergamon<sup>123</sup> and Troy,<sup>124</sup> with the *echinus* bowls in burnished grey ware from Hellenistic Jebel Khalid<sup>125</sup>, and with the 'Hellenistic bowl' and 'Hellenistic slipped incurved rim bowl' from Paphos.<sup>126</sup> Especially with Paphos, Jebel Khalid, Sardis and Gordion, the parallels are morphologically coherent. The morphological execution at Düzen Tepe thus shows resemblances to other Anatolian and Northern Levantine sites in early Hellenistic times.



FIG. 12. A ledge rim bowl.

Another common type at Düzen Tepe is a bowl or dish with a flattened plain rim (5% of diagnostic material), sometimes with a small carination in the upper part of the wall (B140; FIG. 12). Because of this carination, the type is also called a ledge rim bowl or dish. Shannan M. Stewart described this

- 118. Strothenke 2013, p. 277.
- 119. Lemaître 2010, Fig. 8.7.
- 120. Jackson and Tidmarsh 2011, pp. 12-14.
- 121. Stewart 2010, Fig. 201.
- 122. Rotroff and Oliver 2003, plate 7 and 8, no. 32-47.
- 123. Schäfer 1968, tafel 4, no. C13-19.
- 124. Berlin 2002, no. 70-76.
- 125. Jackson and Tidmarsh 2011, p. 409.
- 126. Hayes 1991, Fig. XIV and LVII.

type as "an open vessel with a projecting ('ledge') rim, an upper wall with some degree of carination, and a ring foot or flat base."<sup>127</sup> At Düzen Tepe, the rim sometimes turns slightly outwards, resulting in a soft S-curve. Since the depth and diameter of the ledge rim bowl and the incurved rim bowl at Düzen Tepe are fairly similar,<sup>128</sup> a corresponding function is suggested. The most important difference is that the rim of the ledge rim bowl is turned outward, so eating wet meals out of it would have caused spilling, which makes this bowl relatively more suitable for the consumption of dry foodstuffs, such as nuts, greens, dried fruits and pieces of meat.<sup>129</sup> A drinking function can be excluded, as these are too shallow to serve as a drinking cup.

No studies on the distribution of the ledge rim bowl are published so far. At Gordion this shape was present in large amounts from the early Phrygian period (950-800 BC) onwards, when it was referred to as 'carinated bowl', until the early Hellenistic period, when it was the only pottery type which did not go through a process of standardization as the other types did. In the middle Hellenistic period, the ledge rim bowl was replaced by a new shape which was highly different from its predecessors.<sup>130</sup> The Gordian ledge rim bowl thus seems to have been the subject of a local evolution. Yet, especially at this site, the Achaemenid period was marked by a change in ceramic morphology, mimicking metal Persian wares, most notably in the vessels related to wine serving and consumption.<sup>131</sup> In this regard, Stewart mentions that she could not find any parallels in contemporary Anatolia.<sup>132</sup> Yet, a similar type can be found in Pasargadae during the late and post-Achaemenid periods<sup>133</sup> and in Altın Tepe under Achaemenid rule.<sup>134</sup> Some examples were also found in the slipped wares of Xanthos.<sup>135</sup> The strongest morphological analogy stems from 4th century BC Troy,136 when this site was part of the Persian empire. Again this type was Achaemenid in origin and seemingly quite widespread in Anatolia during the late Achaemenid and early Hellenistic periods.

- 127. Stewart 2010, p. 176.
- 128. E.g. diameter ledge rim bowl: 18.3-21.3 cm; incurved rim bowl: 18.3-20.6, Braekmans 2010, p. 131.
- 129. Stewart 2010, p. 178.
- 130. Sams 1994, p. 44; Stewart 2010, pp. 176-177.
- 131. Dusinberre 2013, pp. 125-126.
- 132. Stewart 2010, p. 177.
- 133. Stronach 1978, pp. 246-247 no. 1-3.
- 134. Summers 1993, pp. 101-104.
- 135. Yener-Marksteiner 2007, Abb. 10: no. 5-7.
- 136. Berlin 2002, plate 11.

#### Food consumption at Düzen Tepe

Most foods are organic materials and therefore subject to decay. Food products were not harvested or slaughtered all year round.<sup>137</sup> As a result, longterm storage of edible products was needed. At Düzen Tepe, the majority of plant based foods, such as grain and pulses, are known for being relatively easy to store for long periods of time and can be kept easily in large storage vessels and cisterns. Fruits can also be stored easily by drying or processing them. It therefore seems that the inhabitants of Düzen Tepe had to put effort in to preserving their foods, as did all pre-industrial communities. The animal products were less easily stored. Milk has a tendency to decay very quickly, a process which can be slowed down by fermenting or coagulating it, with yoghurt and cheese as respective end products. These derivatives have the additional advantage that they contain less lactose. Finally, meat products rot quite quickly too, which can be decelerated by smoking, drying, fermenting, pickling, salting or candying it. Each of these techniques were already known in Neolithic times or were developed in antiquity.<sup>138</sup>

Paul Arthur proposed that closed cooking pots are associated with most of cattle and pig in the archaeozoological record, while casseroles or open cooking pots are linked with a majority of ovicaprines.<sup>139</sup> For Düzen Tepe, however, this relationship did not hold true, since only closed cooking pots were recognized, in combination with a majority of sheep and goat. Nonetheless, additional association by Arthur<sup>140</sup> between closed cooking vessels and so-called 'wet' meals, such as soups, stews and porridges, is very likely for Düzen Tepe for the following reasons. Firstly, preserved meat, pulses and grains seem to have been the most commonly consumed food. These ingredients needed to be prepared and often cooked with large amounts of water for a long time to become tender. Secondly, the most popular bowl for consumption is the incurved rim bowl, which serves very well for the consumption of 'wet' meals.<sup>141</sup> Thirdly, the flat round breads, discussed above, are ideal for spooning stews or soups from these Echinus bowls. Finally, the lack of other cooking vessels implies that almost exclusively one-pot meals were consumed. Side dishes are not excluded, because of the presence of the ledge rim bowls, which were useful for the serving of dried fruits, raw vegetables,

- 137. E.g. Munson 2000, p. 396; Thevenin 2011, p. 8; Hodkinson 1988, p. 50.
- 138. Curtis 2001, pp. 171-172 and pp. 396-398; Robb 2007, p. 145.
- 139. Arthur 2007, pp. 15-28.
- 140. Ibidem, p. 18.
- 141. Stewart 2010, p. 196; Jackson and Tidmarsh 2011, p. 13.

yoghurt, nuts and seeds. Shannan M. Stewart<sup>142</sup> came to a similar conclusion for the ceramic assemblages of Hellenistic Gordion, while she assumed *meze* style dining, by which a selection of small dished is served. In this respect, it is important to notice that at Gordion, as opposed to Düzen Tepe, casseroles were equally popular as the closed cooking pots, indicating that one-pot meals were less frequently consumed compared to Düzen Tepe. Moreover, the incurved rim bowls in Düzen Tepe rather point to the consumption of individual portions that were ladled out of the cooking pot.

### Foodways and cultural practices

Archaeologists and historians have frequently attempted to study cultural identities in the past.<sup>143</sup> Here we can ask ourselves whether we can study these at all. Cultural identity is a communal or individual feeling of belonging to some group or another, politically and socially negotiated within the community.<sup>144</sup> Since they are dead, it is impossible to ask the people of Düzen Tepe to which culture they belonged. Moreover, the material manifestation is seldom a direct reflection of these cultural identities, as they are influenced by other factors too, such as the technological capabilities, the available raw materials and the effects of the market. The material culture and ecofacts in the Düzen Tepe archaeological record therefore are to be understood as proxies for the local food practices and not as indicators for specific cultural identities. Therefore, a focus on practices, instead of on identities, is the preferred option here.

Some of the scholarly endeavours to study cultural identities in antiquity focussed on Persianization or Hellenization, looking for cultural traits of the overlords adopted and adapted by local communities. As Düzen Tepe was subsequently part of both empires and kingdoms, a similar exercise could be attempted for this settlement. Two papers, by Maria Brosius<sup>145</sup> and Christopher Tuplin<sup>146</sup> respectively, have stressed that, although the Achaemenids had no clear policy to enforce their cultural identity on the communities in their empire, that some specific cultural aspects were nevertheless adopted. The cultural traits listed by them – the manner of appearance, the adherence to court etiquette, and certain forms of entertainment such as banqueting,

<sup>142.</sup> Stewart 2010, pp. 229.

<sup>143.</sup> E.g. Gruen 2011; Hales and Hodos 2010.

<sup>144.</sup> Hall and du Gay 1997, pp. 2-16; Assmann 1995, pp. 128-133; Meskell 2007, p. 24.

<sup>145.</sup> Brosius 2011.

<sup>146.</sup> Tuplin 2011.

hunting and archery in iconography, as well as personal names, language, clothing and food culture – mostly relate to Persian court culture, emulated by the satrapal elites. These cannot be applied to the context of Düzen Tepe, however, representing a small and local Pisidian community. Indeed, we cannot expect the inhabitants of this settlement to participate in court-style *symposia*, nor in lion hunts in the royal hunting gardens of Kelainai,<sup>147</sup> the capital of Greater Phrygia, a little over 50km from Düzen Tepe.

The foodways of Düzen Tepe and related material culture indicate that most of their food choices were locally and regionally embedded. The menu consisted mainly of local products which were the result of a combination of the restrictions set by the environment and the available agricultural technology. Food imports are limited to some rare specific goods, such as the olives, marine fish and shellfish.<sup>148</sup> Most of the pottery too, is of local manufacture.<sup>149</sup> Further on, the food practices corresponded with other sites in Anatolia, as indicated by the pottery. Moreover, the ceramic Achaemenid bowls were quite common throughout contemporary Anatolia and reflected a widespread wine-culture.<sup>150</sup> The standard way of cooking – (semi-)wet, grain-based, one-pot meals - even appears to be part of a broader Eurasian, pre-industrial phenomenon.<sup>151</sup> Parallels with the Persian heartland should, therefore, not be understood as if Düzen Tepe had direct contacts with the Achaemenid east or 'felt' Persian. As the settlement was part of the empire, it is quite normal that they adopted certain practices, without regarding them as foreign. This is in agreement with the academic consensus that the Achaemenid empire did not pursue a strict cultural policy,<sup>152</sup> but that, when it comes to wining and dining, cultural practices spread throughout the Achaemenid empire<sup>153</sup> in dialectical translation with local possibilities, habits and customs.

Contacts with the Greek world via the Pamphylian cities along the Anatolian south coast, or through the conquest of Alexander the Great in 333 BC<sup>154</sup> cannot be excluded at Düzen Tepe. Yet, in the food practices Greek or Hellenistic cultural traits are completely absent – no traces of practices of the Greek *symposion*, no bulbous cooking pots and plates *etc*. This was not necessarily

- 147. Xenophon, Anabasis, 1.2.7.
- 148. De Cupere et al. forthcoming.
- 149. Daems et al., this issue; Poblome et al. 2013b, p. 531.
- 150. Miller 2011; Dusinberre 2013, pp. 139-140; Lungu 2016.
- 151. Laudan 2013, p. 9ff.
- 152. Brosius 2011, pp. 136; Dusinberre 2013, pp. 266-271.
- 153. Dusinberre 2013, p. 268.
- 154. Arrian, Anabasis Alexandri I, 27-28.

a conscious process, forming an opposition against the 'other', but can be explained from the point of view that food consumption is a very conservative, and in this case mostly localized and traditional practice. *Bon appetit*!

### Acknowledgements

This research was supported by the Research Foundation Flanders (FWO), the Belgian Programme on Interuniversity Poles of Attraction and the Research Fund of the University of Leuven. The authors wish to thank the reviewers for their insightful comments and Heather Rosch for proofreading the text. From 1990 to 2013, the fieldwork activities and research programme of the Sagalassos Archaeological Research Project were directed by Marc Waelkens and from 2014 onwards by Jeroen Poblome.

### References

- Aiello and Wheeler 1995 = L.C. Aiello, P. Wheeler, *The expensive-tissue hypothesis brain and digestive system in human and primate evolution*, "*Current Anthropology*", 36/2, pp. 199-221, https://doi.org/10.1086/204350.
- Aiello 2007 = L.C. Aiello, Notes on the Implications of the Expensive Tissue Hypothesis for Human, in W. Roebroeks, ed., Guts and Brains: An Integrative Approach to the Hominin Record, Amsterdam, 2007, pp. 17-28.
- Albala 2014 = K. Albala, ed., *Routledge International Handbook of Food Studies*, New York, 2014.
- Arthur 2007 = P. Arthur, Pots and boundaries. On cultural and economic areas between late antiquity and the early middle ages, in M. Bonifay, J.-C. Tréglia, eds., LRCW 2. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean. Archaeology and Archaeometry, (BAR International Series S1662), Oxford, 2007, pp. 15-27.
- Ashley *et al.* 2004 = B. Ashley, J. Hollows, S. Jones, B. Taylor, *Food and cultural studies*, London, 2004.
- Assmann 1995 = J. Assmann, *Collective Memory and Cultural Identity*, "*New German Critique*", 65, pp. 125-133, https://doi.org/10.2307/488538.
- Bakker et al. 2012 = J. Bakker, E. Paulissen, D. Kaniewsky, G. Verstraeten, V. De Laet, M. Waelkens, Man, vegetation and climate during the Holocene in the territory of Sagalassos, Western Taurus Mountains, SW Turkey, "Vegetation history and archaeobotany", 21/4-5, pp. 249-266, https://doi.org/10.1007/s00334-011-0312-4.
- Bergier 1998 = J.-F. Bergier, *Food and Material Culture*, in M.R. Schärer, A. Fenton, eds., *Food and material culture: proceedings of the fourth symposium of the International commission for research into European food history*, East Linton, 1998, pp. 1-7.
- Berlin 2002 = A.M. Berlin, Ilion before Alexander: a Ritual Deposit of the Fourth Century BC, "Studia Troica", 12, pp. 131–165.

- Bourdieu 1984 = P. Bourdieu, *Distinction: a social critique of the judgement of taste*, Cambridge MA, 1984.
- Braekmans 2010 = D. Braekmans, *The Archaic, Classical and Hellenistic Ceramics in the Later Territory of Sagalassos and Düzen Tepe*, Unpublished Ph.D. dissertation, University of Leuven, 2010.
- Brosius 2011 = M. Brosius, *Keeping Up with the Persians: Between Cultural identity and Persianization in the Achaemenid Period*, in E. Gruen, ed., *Cultural Identity in the Ancient Mediterranean*, Los Angeles, 2011, pp. 135-149.
- Brothwell and Brothwell 1969 = D.R. Brothwell, P. Brothwell, *Food in antiquity: a survey of the diet of early peoples*, Baltimore, 1969.
- Caple 2006 = C. Caple, Objects: reluctant witnesses of the past, London, 2006, https:// doi.org/10.4324/9780203409060.
- Çokay-Kepçe and Recke 2007 = S. Çokay-Kepçe, M. Recke, Achaemenid bowls in Pamphylia, in İ. Delemen, O. Casabonne, eds., The Achaemenid impact on local populations and cultures in Anatolia, Ankara, 2007, pp. 83-96.
- Coşkun 2011 = G. Coşkun, Achaemenid Bowls from Seyitömer Höyük, "Olba", 19, pp. 57-79.
- Counihan 1999 = C.M. Counihan, *The anthropology of food and body: gender, meaning and power*, London, 1999.
- Curta 2001 = F. Curta, *The making of the Slavs: history and archaeology of the Lower Danube Region, c. 500-700,* Cambridge, 2001, https://doi.org/10.1017/CBO9780511496295.
- Curtis 2001 = R.I. Curtis, Ancient food technology, Leiden, 2001.
- De Cupere *et al.* forthcoming = B. De Cupere, W. Van Neer, K. Vyncke, H. Vanhaverbeke, *Animal exploitation during the Classical/Hellenistic period at Tepe Düzen (SW Turkey): preliminary results,* forthcoming.
- Diederichs 1980 = C. Diederichs, *Céramiques hellénistiques, romaines et byzantines* (*Salamine de Chypre* IX), Paris, 1980.
- Dietler 2001 = M. Dietler, *Theorizing the feast: Rituals of consumption, commen*sal politics, and power in African contexts, in M. Dietler, B. Hayden, eds., *Feasts: Archaeological and ethnographic perspectives on food, politics, and power*, Tuscaloosa, 2001, pp. 65-114.
- Dietler 2006 = M. Dietler, *Alcohol: anthropological/archaeological perspectives*, *"Annual Review of Anthropology"*, 35, pp. 229-249, https://doi.org/10.1146/annurev. anthro.35.081705.123120.
- Dusinberre 1999 = E.R.M. Dusinberre, Satrapal Sardis: Achaemenid bowls in an Achaemenid capital, "American Journal of Archaeology", 103/1, pp. 73-102, https://doi.org/10.2307/506578.
- Dusinberre 2003 = E.R.M. Dusinberre, *Aspects of empire in Achaemenid Sardis*, Cambridge, 2003.
- Dusinberre 2013 = E.R.M. Dusinberre, *Empire, Authority, and Autonomy in Achaemenid Anatolia*, Cambridge, 2013, https://doi.org/10.1017/CBO9781139087551.
- Edwards 1975 = G.R. Edwards, *Corinthian Hellenistic pottery*, (*Corinth: Results of Excavations Conducted by the American School of Classical Studies at Athens* 7/3), Princeton, 1975, pp. iii-254, https://doi.org/10.2307/4390663.
- Ekroth 2007 = G. Ekroth, *Meat in ancient Greece: sacrificial, sacred or secular? "Food and History*", 5.1, pp. 249-272, https://doi.org/10.1484/J.FOOD.1.100193.

- Fischler 1988 = C. Fischler, *Food, self and identity*, "Social Science Information", 27/2, pp. 275-292, https://doi.org/10.1177/053901888027002005.
- Foley *et al.* 2012 = B.P. Foley, M.C. Hansson, D.P. Kourkoumelis, T.A. Theodoulou, *Aspects of ancient Greek trade re-evaluated with amphora DNA evidence, "Journal of Archaeological Science*", 39/2, pp. 389-398, https://doi.org/10.1016/j.jas.2011.09.025.
- Frankel 2003 = R. Frankel, *The Olynthus mill, its origin, and diffusion: Typology and distribution, "American Journal of Archaeology"*, 107/1, pp. 1-21, https://doi.org/10.3764/ aja.107.1.1.
- Fuller et al. 2012 = B.T. Fuller, B. De Cupere, E. Marinova, W. Van Neer, M. Waelkens, M.P. Richards, Isotopic reconstruction of human diet and animal husbandry practices during the Classical-Hellenistic, imperial, and Byzantine periods at Sagalassos, Turkey, "American Journal of Physical Anthropology", 149/2, pp. 157-171, https://doi. org/10.1002/ajpa.22100.
- Garnsey 1998 = P. Garnsey, *Cities, peasants and food in classical antiquity: Essays in social and economic history*, Cambridge, 1998, https://doi.org/10.1017/CBO9780511585395.
- Garnsey 1999 = P. Garnsey, *Food and society in classical Antiquity*, Cambridge, 1999, https://doi.org/10.1017/CBO9780511612534.
- Gruen 2011 = E.S. Gruen, ed., *Cultural Identity in the Ancient Mediterranean*, Los Angeles, 2011.
- Hales and Hodos 2010 = S. Hales, T. Hodos, eds., *Material culture and social identities in the ancient world*, Cambridge, 2010.
- Hall and du Gay 1997 = S. Hall, P. du Gay, eds., Questions of cultural identity, London, 1997.
- Hansson 1994 = A.-M., Hansson, *Grain-paste*, *porridge and bread*. *Ancient cereal-based food*, "*Laborativ arkeologi*", 7, pp. 5-20.
- Hayes 1991 = J.W. Hayes, *Paphos III: The Hellenistic and Roman Pottery*, Nicosia, 1991.
- Heiss 2013 = A.G. Heiss, Korn und Mehl, Brei und Brot Besonderheiten der Getreide und ihre Spuren in der Vergangenheit, in H. Etzlstorfer, M. Pfaffenbichler, C. Rapp and F. Regner, eds., Brot & Wein. Niederösterreichische Landesausstellung 2013, Schallaburg, 2013, pp. 42–49.
- Higman 2011 = B.W. Higman, *How food made history*, West Sussex, 2011, https://doi. org/10.1002/9781444344677.
- Hodkinson 1988 = S. Hodkinson, Animal husbandry in the Greek polis, in C.R. Whittaker, ed., Pastoral economies in classical antiquity, Cambridge, 1988, pp. 35-74.
- Hürmüzlü et al. 2009 = B. Hürmüzlü, A. De Giorgi, P. Iversen, New Research in Northwestern Pisidia: Ancient Konane (Conana) and its Territory, "Colloquium Anatolicum", 7, pp. 235-256.
- Jackson and Tidmarsh 2011 = H. Jackson, J. Tidmarsh, *Jebel Khalid on the Euphrates*. *Vol.* 3: *the pottery*, Sidney, 2011.
- Jones and Valamoti 2005 = G. Jones, S.M. Valamoti, *Lallemantia, an imported or introduced oil plant in Bronze Age northern Greece, "Vegetation history and archaeobotany*", 14/4, pp. 571-577, https://doi.org/10.1007/s00334-005-0004-z.
- Kuhrt 2010 = A. Kuhrt, *The Persian Empire: a corpus of sources from the Achaemenid period*, London, 2010.
- Laudan 2013 = R. Laudan, *Cuisine & Empire. Cooking in world history*, Berkeley, 2013.
- Lemaître 2010 = S. Lemaître, Contribution à l'étude du mobilier céramique des époques archaïque et classique du Létôon de Xanthos, in S. Lemaître, ed., *Céramiques*

*antiques en Lycie: VIIe s. a.C-VIIe s. p.C.: les produits et les marchés (Ausonius Etudes* 16), Bordeaux, 2010, pp. 115-136.

- Lund 1993 = J. Lund, Pottery of the Classical, Hellenistic and Roman Periods, in L. Sørensen, D. Rupp, ed., The Land of the Paphian Aphrodite: Vol. 2. The Canadian Palaipaphos Survey Project—Artifact and Ecological Studies, (Studies in Mediterranean Archaeology 104/2), 1993, pp. 79-156.
- Lungu 2016 = V. Lungu, The "Achaemenid bowls" from Celaenae: an introduction, in A. Ivantchik, L. Summerer, A. von Kienlin, eds., Kelainai-Apameia Kibotos, Une metropole achéménide, héllénistique et romaine, Eine achämenidische hellenistische und römische Metropole, Bordeaux, 2016, pp. 453-471.
- Marek 2010 = C. Marek, Geschichte Kleinasiens in der Antike, München, 2010.
- Margaritis and Jones 2006 = E. Margaritis, M. Jones, *Beyond cereals: crop processing and Vitis vinifera L. Ethnography, experiment and charred grape remains from Hellenistic Greece, "Journal of Archaeological Science*", 33/6, pp. 784-805, https://doi. org/10.1016/j.jas.2005.10.021.
- McGee 2013 = H. McGee, Over eten & koken: wetenschap en cultuur in de keuken, Amsterdam, 2013.
- McGovern 2013 = P.E. McGovern, *Ancient wine: the search for the origins of viniculture*, Princeton NJ, 2013, https://doi.org/10.1515/9781400849536.
- Megaloudi 2006 = F. Megaloudi, *Plants and diet in Greece from Neolithic to Classic periods: the archaeobotanical remains*, (*BAR International Series* S1516), Oxford, 2006.
- Meskell 2007 = L. Meskell, *Archaeologies of Identity*, in T. Insoll, ed., *The Archaeology of Identities: a reader*, London, 2007, pp. 23-43.
- Miller 1987 = D. Miller, Material culture and mass consumption, Oxford, 1987.
- Miller 2011 = M.C. Miller, "*Manners Makyth Man*": *Diacritical Drinking in Achaemenid Anatolia*, in E.S. Gruen, ed., *Cultural Identity in the Ancient Mediterranean*, Los Angeles, 2011, pp. 97-134.
- Mills 1999 = B.J. Mills, *Ceramics and the social contexts of food consumption in the Northern Southwest*, in J.M. Skibo, G.M. Feinman, eds., *Pottery and people: A dynamic interaction*, Salt Lake City UT, 1999, pp. 99-114.
- Moreno 2007 = A. Moreno, *Feeding the democracy: the Athenian grain supply in the fifth and fourth centuries BC*, Oxford, 2007, https://doi.org/10.1093/acprof: 0s0/9780199228409.001.0001.
- Moritz 1958 = L.A. Moritz, Grain mills and Flour in classical antiquity, Oxford, 1958.
- Munson 2000 = P.J. Munson, Age-correlated differential destruction of bones and its effect on archaeological mortality profiles of domestic sheep and goats, "Journal of Archaeological Science", 27/5, pp. 391-407, https://doi.org/10.1006/jasc.1999.0463.
- Neyt et al. 2012 = B. Neyt, D. Braekmans, J. Poblome, J. Elsen, M. Waelkens, P. Degryse, Long-term clay raw material selection and use in the region of Classical/Hellenistic to Early Byzantine Sagalassos (SW Turkey), "Journal of Archaeological Science", 39/5, pp. 1296-1305.
- Orton *et al.* 2005 = C. Orton, M. Hughes, M. Hughes, *Pottery in archaeology*, Cambridge, 2005.
- Papathanasiou *et al.* 2013 = A. Papathanasiou, T. Theodoropoulou, S.M. Valamoti, *The quest for prehistoric meals: towards an understanding of past diets in the Aegean: integrating stable isotope analysis, archaeobotany and zooarchaeology*, in S. Voutsaki,

S.M. Valamoti, eds., *Diet, Economy and Society in the Ancient Greek World: Towards a Better Integration of Archaeology and Science. Proceedings of the International Conference held at the Netherlands Institute at Athens on 22-24 March 2010, (Pharos Supplement 1), Leuven, 2013, pp. 19-32.* 

- Parker-Pearson 2003 = M. Parker-Pearson, *Food, culture and identity: an introduction and overview*, in M. Parker-Pearson, ed., *Food, culture and identity in the Neolithic and early Bronze Age*, (*BAR International Series* S1117), Oxford, 2003, pp. 1-30.
- Pellegrino 2007 = E. Pellegrino, *Présentation des céramiques à pâte rouge orangée granuleuses de Xanthos. Une production de céramique culinaire locale sur le long terme*, (*Actes de la table-ronde de Poitiers* 16), Bordeaux, 2007, pp. 225-260.
- Poblome 1999 = J. Poblome, *Sagalassos red slip ware*. *Typology and chronology*, (*Studies in Eastern Mediterranean Archaeology* 2), Turnhout, 1999.
- Poblome *et al.* 2013a = J. Poblome, D. Braekmans, B. Mušič, M. van der Enden, B. Neyt,
  B. De Graeve, P. Degryse, A pottery kiln underneath the Odeon of ancient Sagalassos. The excavation results, the table wares and their archaeometrical analysis, in N. Fenn,
  C. Römer-Strehl, eds., Networks in the Hellenistic World, (BAR International Series 2539), Oxford, 2013, pp. 175-185.
- Poblome *et al.* 2013b = J. Poblome, D. Braekmans, N. Fırat, B. Neyt, E. Kaptijn, H. Vanhaverbeke, F. Martens, K. Vyncke, M. Waelkens, P. Degryse, *How did Sagalassos come to be? A ceramological survey*, in M. Tekocak, ed., *Festschrift for Levent Zoroğlu*, Antalya, 2013, pp. 527-540.
- Reitz and Wing 1999 = E.J. Reitz, E.S. Wing, *Zooarchaeology*, Cambridge, 1999.
- Rice 1987 = P. Rice, *Pottery analysis*, Chicago, 1987.
- Robb 2007 = J.E. Robb, *The Early Mediterranean Village: Agency, Material Culture and Social Change in Neolithic Italy*, Cambridge, 2007, https://doi.org/10.1017/CBO9780511499647.
- Rotroff 1997 = S.I. Rotroff, *Hellenistic pottery: Athenian and imported wheel made table ware and related material*, (*The Athenian Agora* 29), Princeton NJ, 1997.
- Rotroff 2002 = S.I. Rotroff, West slope in the east, "Travaux de la Maison de l'Orient méditerranéen", 35/1, pp. 97-115.
- Rotroff 2006 = S.I. Rotroff, *Hellenistic Pottery: The Plain Wares*, (*The Athenian Agora* 33), Princeton NJ, 2006.
- Rotroff and Oliver 2003 = S. Rotroff, A. Oliver, *The Hellenistic Pottery from Sardis: The Finds through 1994 (Archaeological exploration of Sardis. Monographs* 12), Cambridge, 2003.
- Sams 1994 = G.K. Sams, *The Early Phrygian Pottery*, (*The Gordion Excavations, 1950-1973: Final Reports* 4), Philadelphia, PA, 1994.
- Schäfer 1968 = J. Schäfer, *Hellenistische Keramik aus Pergamon*, (*Pergamische Forschungen* 2), Berlin, 1968.
- Schmidt 1957 = E.F. Schmidt, Persepolis, Chicago IL, 1957.
- Scholliers 2012 = P. Scholliers, *Ten Years of "Food & History": "la sfida è partita", "Food & History", 10/2, pp. 27-41, https://doi.org/10.1484/J.FOOD.1.103304.*
- Simpson 2005 = J. Simpson, *The royal table*, in J. Curtis, J. Simpson, eds., *Forgotten empire: The world of ancient Persia*, Berkeley CA, 2005, pp. 104-131.
- Sinopoli 1991 = C.M. Sinopoli, *Approaches to Archaeological Ceramics*, Dordrecht, 1991, https://doi.org/10.1007/978-1-4757-9274-4.

- Sparkes and Talcott 1970 = B.A. Sparkes, L. Talcott, *Black and Plain Pottery of the 6th*, *5th, and 4th Centuries BC*, (*The Athenian Agora* 12), Princeton NJ, 1970.
- Stewart 2010 = S.M. Stewart, *Gordion After the Knot: Hellenistic Pottery and Culture*, Ph.D. Dissertation, University of Cincinnati, 2010.
- Stronach 1978 = D. Stronach, *Pasargadae: a report on the excavations conducted by the British Institute of Persian Studies from 1961 to 1963*, Oxford, 1978.
- Strothenke 2013 = E. Strothenke, Hellenistische Keramik im nordsyrischen Hinterland - Funde vom Dülük Baba Tepesi, in N. Fenn, C. Römer-Strehl, eds., Networks in the Hellenistic World, (BAR International Series 2539), Oxford, 2013, pp. 273-282.
- Summerer et al. 2011 = L. Summerer, A. Ivantchik, A. von Kienlin (eds.), Kelainai-Apameia Kibotos: Développement urbain dans le contexte anatolien. Stadtentwicklung im anatolischen Kontext (Actes du colloque international Munich, 2-4 avril 2009 / Akten des Internationalen Kolloquiums, München, 2-4 April 2009), Bordeaux, 2011.
- Summers 1993 = G.D. Summers, Archaeological evidence for the Achaemenid period in eastern Turkey, "Anatolian studies", 43, pp. 85-108, https://doi.org/10.2307/3642966.
- Talloen and Poblome 2016 = P. Talloen, J. Poblome, *The 2014 and 2015 Control Excavations on and around the Upper Agora of Sagalassos*, "Anatolica", 42, 111-150.
- Thevenin 2011 = M. Thevenin, *Kurdish Transhumance: Pastoral practices in South-east Turkey*, "*Pastoralism: Research, Policy and Practice*", 1/1, pp. 1-24.
- Tuplin 2011 = C. Tuplin, The Limits of Persianization: Some Reflections on Cultural Links in the Persian Empire, in E.S. Gruen, ed., Cultural Identity in the Ancient Mediterranean, Los Angeles, 2011, pp. 150-182.
- Urem-Kotsou and Kotsakis 2007 = D. Urem-Kotsou, K. Kotsakis, *Pottery, cuisine and community in the Neolithic of North Greece*, in C. Mee, J. Renard, eds., *Cooking up the Past: food and culinary practices in the Neolithic and Bronze Age Aegean*, Oxford, 2007, pp. 225-246.
- Valamoti et al. 2011 = S.M. Valamoti, A. Moniaki, A. Karathanou, An investigation of processing and consumption of pulses among prehistoric societies: archaeobotanical, experimental and ethnographic evidence from Greece, "Vegetation history and archaeobotany", 20/5, pp. 381-396, https://doi.org/10.1007/s00334-011-0302-6.
- van der Enden et al. 2014 = M. van der Enden, J. Poblome, P. Bes, From Hellenistic to Roman Imperial in Pisidian tableware: The genesis of Sagalassos Red Slip Ware, In H. Meyza, K. Domżalski, eds., Late Hellenistic to Mediaeval Fine wares of the Aegean Coast of Anatolia. Their production, imitation and use, Warschau, 2014, pp. 81-93.
- Vanhaverbeke et al. 2010 = H. Vanhaverbeke, M. Waelkens, K. Vyncke, V. De Laet, S. Aydal, B. Mušič, B. De Cupere, J. Poblome, D. Braekmans, P. Degryse, El. Marinova, G. Verstraeten, W. Van Neer, B. Šlapšak, I. Medarič, H.A. Ekinci and M.O. Erbay, 'Pisidian' culture? The Classical-Hellenistic site at Düzen Tepe near Sagalassos (southwest Turkey), "Anatolian Studies", 60, pp. 105-128, https://doi.org/10.1017/S0066154600001046.
- Vermoere 2004 = M. Vermoere, *Holocene vegetation history in the territory of Sagalassos* (southwest Turkey): a palynological approach, (Studies in eastern Mediterranean archaeology 6), Turnhout, 2004.
- Vermoere et al. 2000 = M. Vermoere, E. Smets, M. Waelkens, H. Vanhaverbeke, I. Librecht, E. Paulissen, L. Vanhecke, *Late Holocene environmental change and the*

record of human impact at Gravgaz near Sagalassos, southwest Turkey, "Journal of Archaeological Science", 27/7, pp. 571-595, https://doi.org/10.1006/jasc.1999.0478.

- Vermoere *et al.* 2001 = M. Vermoere, L. Vanhecke, M. Waelkens, E. Smets, *Modern* pollen studies in the territory of Sagalassos (Southwest Turkey) and their use in the interpretation of a Late Holocene pollen diagram, "Review of palaeobotany and palynology", 114/1, pp. 29-56, https://doi.org/10.1016/S0034-6667(00)00072-5.
- Vermoere et al. 2002 = M. Vermoere, S. Bottema, L. Vanhecke, M. Waelkens, E. Paulissen, E. Smets, Palynological evidence for late-Holocene human occupation recorded in two wetlands in SW Turkey, "The Holocene", 12/5, pp. 569-584, https://doi.org/10.1191/0959683602hl568rp.
- Vigne 1991 = J.D. Vigne, *The meat and offal weight (MOW) method and the relative proportion of ovicaprines in some ancient meat diets of the north-western Mediterranean*, *"Rivista di studi liguri"*, 57/1-4, pp. 21-47.
- Von Reden 2007 = S. Von Reden, Classical Greece: Consumption, in W. Scheidel, I. Morris, R.P. Saller, eds., The Cambridge economic history of the Greco-Roman world, Cambridge, 2007, pp. 362-384.
- Vyncke 2013 = K. Vyncke, Düzen Tepe: the potential of contextual analysis and functional space analysis by means of an interdisciplinary archaeological and archaeometric research at a Classical-Hellenistic site, Unpublished Ph.D. dissertation, University of Leuven, 2013.
- Vyncke et al. 2011 = K. Vyncke, P. Degryse, E. Vassilieva, M. Waelkens, *Identifying* domestic functional areas. Chemical analysis of floor sediments at the Classical-Hellenistic settlement at Düzen Tepe (SW Turkey), "Journal of Archaeological Science", 38/9, pp. 2274-2292, https://doi.org/10.1016/j.jas.2011.03.034.
- Waelkens *et al.* 2011 = M. Waelkens, J. Poblome, K. Vyncke, *Indigenous versus Greek identity in Hellenistic Pisidia. Myth or reality?*, in J. Gates-Foster, ed., *Hellenes and Non-Hellenes/Beyond Identity in the Hellenistic East*, Rome, 2011, pp. 19-54.
- Warde 1997 = A. Warde, *Consumption, food and taste: culinary antinomies and commodity culture*, London, 1997.
- Wilkins and Hill 2006 = J.M. Wilkins, S. Hill, *Food in the ancient world*, New York, 2006.
- Wrangham 2009 = R. Wrangham, *Koken: Over de oorsprong van de mens*, Amsterdam, 2009.
- Yener-Marksteiner 2007 = B. Yener-Marksteiner, *Fundkeramik aus Sondage West 3* and der Ringmauer im Westbereich von Xanthos, in S. Lemaître, ed., Céramiques antiques en Lycie: VIIe s. a.C-VIIe s. p.C.: les produits et les marchés (Ausonius Etudes 16), Bordeaux, 2007, pp. 77-113.
- Zohary et al. 2012 = D. Zohary, M. Hopf,, E. Weiss, *Domestication of Plants in the Old World: The origin and spread of domesticated plants in Southwest Asia, Europe, and the Mediterranean Basin*, Oxford, 2012, https://doi.org/10.1093/acprof:os obl/9780199549061.001.0001.