Originalveröffentlichung in: Gastronomica: The Journal of Critical Food Studies 16, 3, 2016, S. 91-101

RESEARCH ESSAY | Philipp Stockhammer, Ludwig-Maximilians-University Munich

Past Food for Thought: The Potential of Archaeology

Abstract: Until recently, archaeologists have routinely connected a particular object with a certain function and meaning—especially with regard to eating and drinking practices—and have underestimated the transformative power of intercultural encounters. In my article, I explore the dynamic relationship between food "stuffs" and the objects and practices connected with their consumption. Adopting a transcultural perspective, I want to focus on the changeability of the relation between food "stuffs," objects, and practices and individual objects' biographies of usage. I will illustrate my methodological approach with case studies from the late second millennium BCE Eastern Mediterranean where objects for food consumption were widely distributed—and have thus far been interpreted as evidence for the spread of certain practices of consumption over the whole region. By analyzing regional processes of appropriation of these objects I will shed light on the astonishing transformations of their functions and meanings.

Keywords: archaeology, Bronze Age, object itineraries, appropriation, organic residue analysis

Archaeology and Food Studies

EVER SINCE VERE GORDON CHILDE (2003 [1936]) introduced the concept of the Neolithic Revolution, prehistorians have been aware of the crucial importance of food in all its social dimensions for the understanding of prehistoric developments. However, due to its perishable nature, the study of food and related practices of food production and consumption have long presented major difficulties to archaeologists and thus limited their contribution to the growing discipline of food studies. Following the dominant paradigms of modernity to postmodernity, leading eventually to current practice-oriented approaches, scholarship in food studies has shifted focus from food as mere nutrition to the symbolic potential of food and finally to food consumption as experience and social practice. Archaeological approaches to food, however, have not kept up with this development. Archaeologists have been studying food either with a focus on its nutritional aspect (e.g., calculating calorific values and evaluating subsistence strategies with regard to their food output) or have defined food as a way of symbolic communication. Therefore, most archaeological research on prehistoric food is still guided by research questions that were prevalent in the humanities from the 1960s to the 1980s. This is not only due to the lack of involvement in current discussions on food studies, but has also depended significantly on the potential of an archaeological approach to past food practices.

Until recently, archaeology's methodological approach has been dominated by archaeozoology and archaeobotany (Jacomet and Kreuz 1999; Pearsall 2000; Russell 2012). In the archaeological evaluation of an excavation—especially of settlement sites—plant and animal species are regularly determined and quantified on the basis of bone remains and charred seeds, thus shedding a light on, for example, subsistence strategies and slaughtering practices. It became clear how grain cultivation and animal husbandry developed through time and how their realization and development depended on different natural and cultural backgrounds. However, archaeological studies on food have been mostly unable to shed light on individual practices of food preparation (e.g., practices of cooking and spicing) or individual diets. As human individuals are almost exclusively preserved as skeletons (and only very rarely and due to specific burial practices and/or climatic conditions as mummies from the desert, ice, or bogs), the analysis of the skeletal remains is the only way to identify individual consumption patterns. In the last decades, the study of stable isotopes (nitrogen and carbon) from human bone material has afforded initial insights into individual diets (e.g., Knipper et al. 2015), but can only provide answers on a very broad scale (e.g., differentiating between diets with a higher and lower ratio of meat consumption). However, only a better understanding of specific individual diets and their change through space and time will enable archaeology to participate in current discourses in food studies and add

GASTRONOMICA: THE JOURNAL OF CRITICAL FOOD STUDIES, VOL. 16, NUMBER 3, PP. 91–101, ISSN 1529-3262, ELECTRONIC ISSN 1533-8622. DOI: 10.1525/GFC.2016.16.3.91.

the necessary diachronic perspective, which is essential to understanding local processes of appropriation and transformation of food and cuisines or the relationship between individual diets and age, gender, societal organization, and past worldviews. This long-term and global prehistoric perspective would complement and deepen present-day oriented approaches to the study of food.

Potential of Organic Residue Analyses

The regular approach used by archaeologists when it comes to analyzing vessels, bones, and plant remains for food production and consumption from prehistoric contexts is quite simple. The first step is purely descriptive and taxonomic, i.e., grouping the ceramic findings into particular types of vessel shapes such as bowls, cups, or jars in order to somewhat scheme the heap of shards with which we archaeologists are usually confronted. At the same time, animal bones are attributed to particular species and their body parts, and the age at which a particular animal was slaughtered is determined. Cut-marks on the bones tell us about slaughtering practices and the kind of tools used in this process, which also give clues as to the further butchering of the meat (Greenfield 2013). Plant macro remains are studied, classified, and quantified in order to determine the different species' importance for the diet via their quantity.

Having finished these taxonomic analyses, other questions arise; e.g., on the prehistoric functions and meanings of a certain type of vessel or the symbolic value of particular kinds of meat. Both the valuation of different animals and parts of their bodies, and the possible use of particular vessel shapes, are deeply influenced by archaeologists' lifeworlds. Whereas the perception of the quality of different kinds of meat might indeed be a timeless constant, the association of a particular type of vessel with a certain function is much more problematic. Until recently, it was mainly based on an archaeologist's everyday experience with the use of vessels in his or her household and additional information derived from ethnographic analogies. Only in rare cases have literary or pictorial sources provided us with additional information on the kind of food that was consumed and the associated practices. As my own discipline, prehistory and early history, is marked by the absence or rareness of literary sources, we prehistorians have not been able to decipher past culinary practices in most cases. However, the archaeology of consumption has recently gained an enormous impetus from the thriving field of organic residue analyses.

Since the 1990s, organic residue analyses have enabled crucial new insights into the study of past food practices. This approach has the potential to revolutionize deep historic approaches to the study of food. Organic residue analysis is increasingly employed to identify processed commodities used in culinary and nonculinary practices. With the help of organic residue analyses it is possible to characterize a wide range of animal fats (e.g., animal adipose, ruminant dairy fats, and marine oils), plant oils, honey mead, wine, and diverse resins and herbs (Heron and Evershed 1993) from food-related vessels from most distant times. Even if there are no literary sources and no traces of food visible to the human eye, residue analyses present a groundbreaking step in understanding past practices of food production and consumption. The basis for using this technique is that upon the application of heat, fatty and other components become absorbed within the walls of porous, unglazed ceramic vessels. The structure and hydrophobic nature especially of lipids impart a high preservation potential over archaeological timescales (Eglinton and Logan 1991; Evershed 1993).

The potential of organic residue analysis is enormous, as has been demonstrated by a wide range of studies—e.g., the successful analysis of lipid residues dated to 15,000–18,000 cal BP from the Japanese Jomon culture (Craig et al. 2013)—and in providing unequivocal evidence for the consumption of dairy products since the Early Neolithic (Evershed et al. 2008). Its potential for the study of food in the prehistoric Eastern Mediterranean has long been acknowledged and early results were considered to be a significant basis for the major exhibition, "Minoans and Mycenaeans: Flavours of Their Time," organized by the Greek Ministry of Culture in 1999 (Tzedakis and Martlew 1999; Tzedakis, Martlew, and Jones 2008). Most relevant for Eastern Mediterranean archaeology has been the more recent studies on transport and storage vessels (Serpico and White 2000), as well as bowl-shaped incense burners from the Southern Levant. Besides wine and animal fats, these vessels provided clear traces of cinnamon, nutmeg, and a wide range of other spices and resins (Gadot et al. 2014; Koh et al. 2014; Namdar et al. 2010; Namdar et al. 2013). This was the first evidence obtained for the use of these South and East Asian products in the Eastern Mediterranean, and presented a crucial contribution to the ongoing vibrant discussion on the spread of South and East Asian food to Africa and Europe (Fuller et al. 2011).

It has become clear that already long before modern times, food was exchanged on an almost global level—at least between East and Southeast Asia via South and Central Asia to the Near East and the Eastern Mediterranean. The intense worldwide exchange of food that we have been witnessing in the last centuries (cf. Wilk 2006) has its roots in the deep past: in the Late Bronze Age Southern Levant, it was already possible to import chicken from India and it could be spiced

with South Asian pepper and cinnamon (Fuller et al. 2011; Gadot et al. 2014; Koh et al. 2014). So far, our knowledge about the early Eastern Mediterranean cuisine is based on bits and pieces of information from different sites, e.g., the evidence for chicken has been found in the Mycenaean citadel of Tiryns in Late Bronze Age Greece (von den Driesch and Boessneck 1990), pepper was used for the mummification of Pharaoh Ramses II in the thirteenth century (Plu 1985), and all other spices have been identified with organic residue analyses in present-day Israel. The potential of an integrated archaeological and scientific approach to the study of past food is already indicated by novel insights regarding past food practices: nutmeg, for example, has thus far only been traced in Levantine incense burners and was obviously used as a hallucinogenic drug (like in many present-day prisons, cf. Hanson et al. 2009: 323) and not as a spice. However, there is still no comprehensive and systematic study of vessel contents from different regions and a diachronic perspective on the basis of a larger number of samples.

The connection between food remains and individual dietary practices still presents a major obstacle for food studies of the distant past. This is even more problematic, as current food studies is focusing on food as individual experience (Abbots and Lavis 2013). This challenge was solved only most recently by developing methods for the analysis of food residues in human dental calculus (Warinner et al. 2014a, 2014b).

With the help of an integrated approach, archaeology is not only able to determine the range and extent of early food trade, but can also demonstrate the dynamics of food preparation and consumption through time. Archaeology can help to abandon the myth of a past where disconnected people ate what they grew on their own or at least in their immediate vicinity—in contrast to the present, where producers and consumers of food are often assumed to be dissociated and the knowledge about origin and authenticity of food has been lost and must be (re-)constructed in the process of marketing. Of course, there is no doubt that most people in the past had a closer link to the producers of food than many have today or grew their own food. Moreover, it is clear that the present-day scale of interconnectedness and the present amount of food exchanged over long distances is at a completely different level in comparison to, for example, the Late Bronze Age Eastern Mediterranean. Nevertheless, our current globalized world is the result of long-term transformations and also of past global worlds (like in the Late Bronze Age Eastern Mediterranean). It is necessary to draw these past processes into account in order to supplement food studies' focus on modernity.

A New Archaeological Approach to Food

In addition to a new scientific basis for the establishment of food studies of the distant past, archaeology also needs a new understanding of the encounter between humans as well as between humans and things (e.g., food). In recent years, archaeologists have extensively published on the transformative potential of intercultural encounter (e.g., Maran and Stockhammer 2012; Stockhammer 2012a, 2012c) as well as the dynamic entanglement between humans and things (e.g., Hodder 2012; Miller 2010; Olsen 2010; Olsen et al. 2012; Stockhammer and Hahn 2015). The acknowledgment of these dynamics is necessary in order to overcome the still dominating assumption in archaeology that a specific vessel shape is always linked to a particular function. According to this line of thought, the identification of a particular residue in a certain vessel led to the conclusion that all other vessels of this type were used for the consumption of this particular foodstuff—irrespective of the context where the respective vessel was found. Maps showing the geographical distribution of vessels of a certain type were considered as indicators also for the distribution of a certain consumption practice of a particular foodstuff.

The assumption of a particular, stable, and singular meaning and function of an object or practice was basically linked to an essentialist notion of culture. For a long time, archaeologists have assumed intercultural contacts as taking place between different cultures, which were imagined as container-like entities. Objects from afar have therefore been considered to stay foreign in a new context, thus neglecting processes of appropriation and translation of the formerly foreign into one's own lifeworld. With regard to material culture, the myriad changes of functions and meanings of the objects during their life histories have not been adequately taken into consideration. Following a transcultural approach, cultures are neither stable nor self-existing entities, but in a continuous process of transformation triggered by cultural encounter and connectedness. In spite of the aforementioned innovative approaches to the study of intercultural encounter and human-thing entanglement, there remains hardly any convincing conceptualization of the power of things in these entanglements.

The potential of things has been mostly discussed in the framework of the notions of "agency" and "materiality," and it has been endlessly discussed if objects can possess agency or not. I would like to go beyond this current debate by conceptualizing the active role of objects; to do so, I replace the term "agency" of the object with the idea of "effectancy." The replacement of "agency" with "effectancy" is based on four considerations (cf. Stockhammer 2015): First, "agency" is generally associated with the power to exert intentional

action. This association can be solved neither by neglecting intentionality in the conceptualization of action (see Latour 2007) nor by the effort to dissolve "agency" and "intentionality" (see Knappett 2005: 22–23). Second, at least from an etic perspective, objects do not have the power to exert intentional action—and, therefore, cannot possess "agency." Third, objects influence human action and have an effect on humans' perceptions of the world, their emotions and actions. Due to this effect, I choose the term "effectancy." Fourth, "effectancy" shifts the focus from the action of things to human action that results from human-thing entanglement.

In my definition, effectancy of things is based on threefold changeability (Stockhammer 2015). The first changeability is due to the shifting perception of the object (cf. Merleau-Ponty 1966), which leads to the ever-new discovery of new features and potentials of the object. The first changeability is most visible in the disturbing moment, when a human actor realizes that his/her first categorization of an object was erroneous, because, for example, an object cannot be used the way it was previously assumed. As a consequence, the first changeability only refers to a virtual change of the object, as the respective changes only take place in our human perception. The second changeability refers to the ability of the object to change through the course of time without human interference. Walls of a building deteriorate and need to be restored. A particular piece of cloth loses a certain smell, which was associated with a particular memory and—as a consequence—the memory might also be lost. The second changeability is most important for food studies, as edible objects are most dynamic through time—they change their color, taste, smell, texture, and so on, can become inedible, even poisonous, or only acquire a desirable taste after a long period of time. My second changeability emphasizes the effect of the transformation of food through time for human actors. The third changeability results from traces of human practices that remain on an object and have the potential to serve either as a reminder of past practices and/or as an obstacle for future practices. This changeability is linked to the notion of objects' itineraries and their potential (cf. Hahn and Weiss 2013; Kopytoff 1986). A crack in a drinking glass can remind us of joyous past celebrations but also pose an obstacle to the future use of the vessel. It has a multidimensional effect on us.

The object's effectancy only gains momentum in the context of human practices with the object—e.g., when eating particular food from a particular dish. This dynamic approach to things also helps us to acknowledge an object as well as its functions and meanings as processes rather than states, which are continuously created through the practices with the object. The dynamics of shifting functions and meanings are omnipresent. However, they become very striking when an object was involved in intercultural exchange during its itinerary. And it is exactly these transformative dynamics of intercultural encounter that will be in the focus of my case studies.

Case Studies from the Eastern Mediterranean Late Bronze and Early Iron Age

In order to demonstrate the potential of an approach integrating contextual analysis with a transcultural approach as well as cutting-edge scientific methods, I will analyze several case studies from the Eastern Mediterranean Late Bronze and Early Iron Age. Between the fifteenth and twelfth centuries BC, the societies of the Eastern Mediterranean came into contact with a hitherto unknown intensity and the exchange of goods and mobility of people reached a globalized scale (e.g., Feldman 2006; Leidwanger et al. 2014). This has been extensively studied on the basis of widely distributed raw materials and objects—be they works of art, transport vessels, or feasting dishes. However, the focus has long been on the origin and distribution of these goods. Due to the general lack of preservation, the transportation and distribution of food has only played a minor role in these discussions. For a long time, most scholars have interpreted the appearance of objects of the same type over a wide region as indicators of a homogenization accompanying globalization.

Only recently, practice-oriented approaches, which also integrated insights from current globalization studies, have been able to produce revolutionary insights into the transformative dynamics of the appropriation of foreign objects and ideas in the Eastern Mediterranean Late Bronze Age (Feldman 2006; Knapp and van Dommelen 2014; Stockhammer 2012a, 2012b; Voskos and Knapp 2008). It is now time to strengthen and expand insights from contextual studies on practices with local and foreign pottery and related food practices in the Eastern Mediterranean Late Bronze Age by integrating them with cutting-edge scientific analyses, which can shed new light on local individual dietary practices. This approach could enable us to gain insights into past food practices in an early globalized world that might be relevant also for current discussions on the relationship between food and globalization. In the following, I will discuss selected processes of appropriation of foreign pottery at the Southern Levant in the fifteenth to twelfth century BCE, i.e., the Late Bronze and Early Iron Age in Levantine terminology (Stockhammer 2012a, 2012b, forthcoming). In the fifteenth and first half of the fourteenth century BCE, the earliest rare ceramic imports from Crete reached the Southern Levant. From the mid-fourteenth century BCE and well into

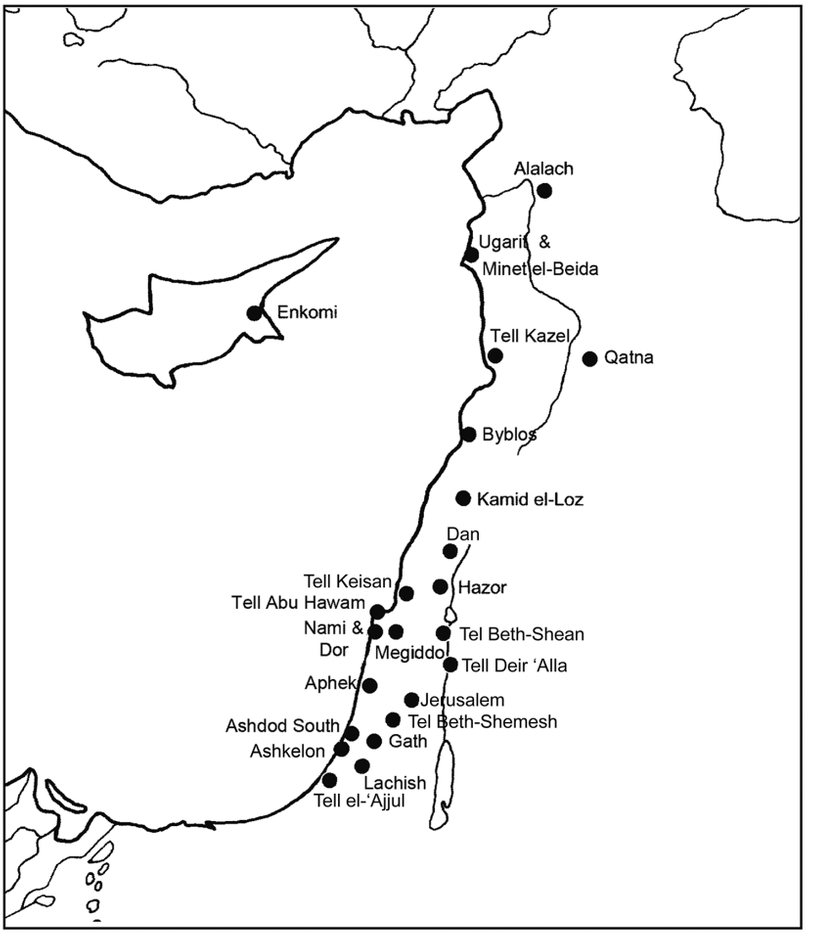

FIGURE 1: *The Levant in the Late Bronze and Early Iron Age.*
IMAGE AFTER FISCHER 2007: PL. 1

the thirteenth century BCE large quantities of fine ware pottery—tens of thousands of vessels—produced in workshops on the Greek Mainland were brought to the Southern Levant (Fig. 1).

In the following, I will select just three of the multitude of Aegean-type vessel forms imported to the Levant, namely the conical cup, the amphoroid krater, and a shallow, stemmed drinking bowl called a kylix by Aegean archaeologists (Figs. 2–4). Whereas amphoroid kraters are a commonly imported vessel form (together with small closed container vessels for oils and other liquids), open vessels of Aegean type such as cups and bowls were less frequently appropriated at the Levant. Nevertheless, these open vessels can provide interesting insights into the dynamic relation between humans, vessels, and food practices. The function and meaning of these types of vessels are beyond any doubt in Late Bronze Age Greece, where kraters were used to mix water and wine before this mixture was drunk from the cups or kylikes that were grouped into equal pairs to be used by pairs of drinkers. Thus, an Aegean feasting ensemble comprised one krater together with several pairs of cups or kylikes (Stockhammer 2008: 295–325). Residue analysis has clearly shown that wine—spiced with resin—was consumed with these vessels (Tzedakis and Martlew 1999). This consumption is depicted in frescoes from the palaces of the Aegean Bronze Age. Inventory lists of the Mycenaean palace of Pylos tell us that one needed 11 tables and 22 chairs for a feasting event, which obviously had some kind of bistro-like appearance (Palaima 2000: 237; Palaima 2004: 235; Wright 2004: 163, fig. 13; Stockhammer 2011a: 213).

The appearance of kraters, kylikes, and cups at the Southern Levant has long been taken as an indicator of the takeover of Aegean drinking practices in this region. The identity of vessel shapes in Mycenaean Greece and at the Levant was considered as proof of the identity of practices and meanings connected with the particular shapes. Form,

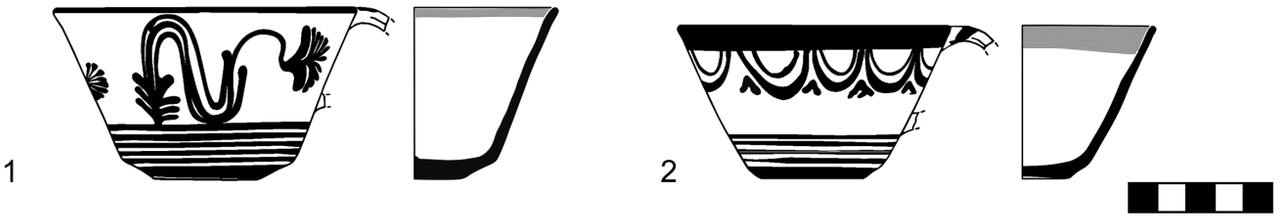

FIGURE 2: *Minoan conical cups from Tel Beth-Shemesh, Level 9.*
IMAGE FROM BUNIMOVITZ ET AL. 2013: 55, FIG. 3; 56, FIG. 4; WITH KIND PERMISSION OF THE AUTHORS.

function and meaning were virtually perceived as inseparable, transcultural constants. In the course of my recent studies of these vessels (Stockhammer 2012a, 2012b, forthcoming), I was especially focusing on in situ finds of Aegean-type vessels at the Southern Levant as these allow for a comprehensive analysis of the context. Moreover, I analyzed the quantitative relationship between these shapes in each of the settlements and the functions and meanings of vessels of Levantine type with a similar shape. Fortunately, for the latter's in situ contexts, some textual and pictorial sources and residue analyses are available.

CASE STUDY 1: CONICAL CUPS

The first group of Aegean-type imports, namely conical cups, is indeed a very small one—consisting only of two such vessels that were recently excavated at Tel Beth-Shemesh in the Judean hills in present-day Israel (Fig. 2). In the last few years, a fourteenth-century-BCE palace (Level 9; LB IIA) that can be attributed to the queen Bēlit-labi'at was excavated at the site (Bunimovitz et al. 2013).

The building was destroyed by fire, which resulted in the preservation of the nonorganic furnishing of the palace on the floors. In one of the rooms, two Cretan conical cups were found close to each other. The vessels were very probably produced in the area of the palace at Knossos on Crete in the early fourteenth century BC, thus enabling us to determine the exact place of origin as well. The excavators therefore interpreted them as royal gifts of the ruler of Knossos to the queen of Tel Beth-Shemesh (Bunimovitz et al. 2013). In the case of Tel Beth-Shemesh, there is a clear indication that early Aegean-type imports—most of them of Cretan origin—were appropriated by local elites and integrated among their feasting dishes. As I have already mentioned, in the Aegean, there are clear indications that drinkers sat in pairs opposite each other, consuming beverages from pairs of nearly identical drinking vessels. Thus, for the Aegean gift-giver, it was natural to send such a pair of vessels as a gift. The queen of Tel Beth-Shemesh obviously kept the cups together as a pair as well. Drinking from cups, however, was not a common practice during feasting in the Levant.

By examining the two cups closely, I was able to identify that on both cups the handle had been most probably chipped away. In other words, the users of the cups had transformed them into bowls. This fits very well with the common drinking practices in the Late Bronze Age Southern Levant, where drinking bowls were held in the palm of the hand (Yasur-Landau 2005: 172, 174; Yasur-Landau 2008: 356). Thus, the use of foreign drinking vessels and the idea to use a pair of almost identical vessels was appropriated by the users. The users manipulated vessels by transforming them from cups into bowls in order to fit more closely into what they perceived as the correct embodied social act of drinking.

CASE STUDY 2: AMPHOROID KRATERS

I continue my focus on the transformation of functions and meanings of objects in contexts of intercultural encounter with a second vessel type—amphoroid kraters. These kraters are mostly of Mainland Greek origin and reached the Southern Levant with the great number of imports in the second half of the fourteenth and during the thirteenth century BCE.

Researchers have long been convinced that also during the late fourteenth and thirteenth centuries BCE Levantine elites were the crucial consumers of the imported pottery in order to imitate Aegean feasting practices and, thereby, emphasize their status through the ostentatious use of foreign objects. My contextual analyses could show, however, that the Southern Levantine elite of the late fourteenth and thirteenth centuries BCE clearly refrained from using Aegean-type vessels, as the excavated palaces of this time—although containing hundreds of vessels in their storerooms (most prominently in Hazor: Zuckerman 2007, 2008)—did not contain one vessel of Aegean origin. The contemporaneous houses around the palace, however, frequently contained these vessels of Aegean type (Stockhammer 2012b: 91–92).

Despite their small number, the meaningful floor contexts with amphoroid kraters and quantitative analysis enable us to

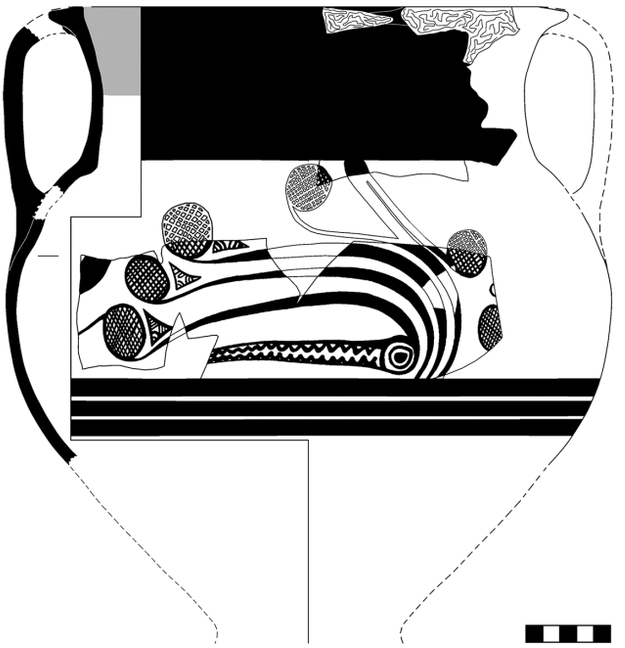

FIGURE 3: *Amphoroid krater from Megiddo, Area CC, Room 1817.*
ILLUSTRATION BY PHILIPP STOCKHAMMER

trace a perhaps particularly Southern Levantine appropriation of this vessel shape. The floor inventory of room 1817 (Area CC, Locus W=1817 and Locus 1817; see Stockhammer 2011b and 2012b for an extensive discussion of the archaeological context) in Megiddo (Fig. 1) is of special importance to my investigations (Fig. 3). There, at least one such krater was found in situ, yet without any other drinking vessels that could be also used for feasting. A comparable find distribution is known from Ugarit at the Northern Levant. Moreover, calculating the ratio between kraters and the Aegean-type drinking vessels at each of the Levantine sites gave surprising results: ten amphoroid kraters and only five Aegean-type drinking vessels were found in the settlement at Megiddo. In Tell eṣ-Ṣâfī/Gath (Fig. 1), I identified six amphoroid kraters and not a single Aegean-type drinking vessel. From Aphek, nine kraters and seven other Aegean-type feasting vessels are known; from Hazor, ten kraters and ten other feasting vessels of Aegean type. Already these numbers suggest that feasting practices with Aegean-type pottery in the Southern Levant and possibly in the Levant in total differed markedly from those in the Aegean (Stockhammer 2011b). In the Aegean, it seems that one krater was regularly combined with ten drinking vessels. The drinkers sat in pairs opposite each other and drank from almost identical vessels, especially kylikes.

The few depictions of drinking practices of the Canaanite elite of the thirteenth and twelfth centuries BCE, especially the images of drinking male rulers on ivories found in the palace of Megiddo, clearly indicate the consumption of wine from metal bowls (Yasur-Landau 2005). However, individuals with high status positions stopped using Aegean-type pottery in the Southern Levant from the late fourteenth century BCE onward. Thus, these images cannot be used for illustrating the practices with Aegean-type pottery. Those who are illustrated here never used Aegean-type pottery (Stockhammer 2012b). Moreover, the literary sources indicate that the consumption of wine was mostly reserved for the elites. However, if the elites did not use Aegean-type kraters for wine drinking, it seems that these vessels were not used for the mixing of water and wine in the Levant. This leads to the question: For what kind of feasting practices were the kraters actually used?

An illuminating object in terms of shedding light on how Aegean-type kraters may have been used is the depiction of a Canaanite mercenary on a stele from Tell el-Amarna from the fourteenth century BCE (Spiegelberg and Erman 1898), together with the great number of finds of strainer tips and sometimes also tube elbows for drinking straws. The ordinary people in whose houses the Aegean-type kraters were found obviously drank beer with straws from large vessels that were placed in the center of a circle of drinkers. The use of strainers was necessary to hold back residues in the beer. In contrast to the restricted consumption of wine, beer was consumed by the ordinary populace and elites alike.

It seems that for this purpose Aegean-type kraters were also used and were easily integrated into the local drinking practices. Drinking beer with straws from large vessels is a common habit since antiquity—documented also by Xenophon in his Anabasis (IV, 5, 26) when he speaks of the drinking habits of Armenian farmers. Even today, drinking beer with straws from a huge crater-like vessel is a common habit in Eastern Africa and Vietnam and even by tourists on Mediterranean islands (Haaland 2007)! Thus, there is considerable evidence that indicates a very particular use of Aegean-type kraters in the Southern Levant that differs markedly from what the Greek producers had originally conceived as their correct function. The beautifully painted, large open vessels were probably the centerpieces of beer feasting events for which a large open vessel was needed. The pictorial decoration of the Aegean-type krater certainly attracted the glances and attention of the drinkers. The motifs of the decoration—be they chariot scenes, bulls, or fantastic beings—might have been topics of discussions and will thus finally have exerted some influence on narration during feasting (Stockhammer 2012a, forthcoming).

An intricate process of appropriation can be determined. Of particular interest is that the vessel was not classified as a mixing vessel in the Aegean system, but as a drinking vessel

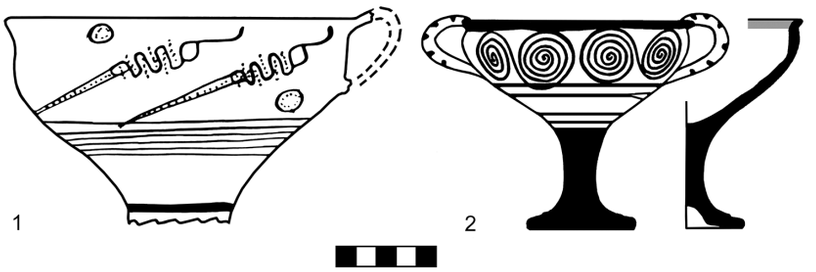

FIGURE 4: *Kylikes from (1) Lachish, Fosse temple, phase III and (2) Nahalat Ahim.*
IMAGE 1 FROM TUFNELL ET AL. 1940: PL. 46:219; IMAGE 2 FROM AMIRAN 1960: FIG. 1:1.

in the local taxonomy. This went along with the attribution of a different meaning. The similarity between amphoroid kraters and kraters of Canaanite-type has probably facilitated the appropriation of the foreign vessels.

CASE STUDY 3: KYLIKES

I now turn to the appropriation of the kylix as a third example of the transformative power of transcultural entanglement (Fig. 4). Thus far, this shape has never been found with kraters of Aegean production in the same context in the Southern Levant. In order to understand possible social practices with these Aegean-type vessels in the Southern Levant, it is first necessary to analyze the use of stemmed bowls of Canaanite type. Residue analyses on stemmed ceramic bowls of Canaanite type as well as pictorial images enable us to identify these vessels' function beyond any doubt: they were used for burning incense at certain events (Gadot et al. 2014; Namdar et al., 2010; Yoselevich 2006). The residue analyses of stemmed bowls from many different sites—especially harbor sites and temples, where these vessels concentrate (e.g., Fig. 4, 1)—all gave corresponding results.

Seventeen stemmed bowls from the, albeit slightly later, Tel Yavneh site allowed for particularly interesting insights: in one group of bowls, molecular traces of substances were found that point to a mixture of floral oils from several plants including probably jasmine (*Jasminun Gradiflora*) or nutmeg (*Myristica fragrans*) (Gadot et al. 2014; Namdar et al. 2010: 169). Until recently, nutmeg was not thought to be present in the Levantine Late Bronze and Iron Age, as this plant only grew in Southeast Asia at this time. Therefore, the stemmed bowls were used to vaporize plant oils with a hallucinogenic effect that definitely enabled a very particular perception of the performed rituals when consumed in combination.

The depiction of the conquest of Ashkelon by the troops of Pharaoh Merenptah on a stone relief in Karnak shows a priest standing over the roofs of the city and holding a stemmed bowl, from which smoke is rising, toward the sky (Stager 1985: 57, fig. 2). Wall paintings in the tomb of Kenamun in Thebes, which illustrate the arrival of Canaanite ships in Egypt, show the captains of two ships each holding a stemmed, bowl-shaped incense burner with their hands toward the sky (Davies and Faulkner 1947: pl. 8). The vessel's stem was an important prerequisite for holding the vessel during the burning of incense, as its bowl heated up very quickly. As carrying and raising bowl-shaped incense burners—made either out of clay or out of bronze—seems to have been a crucial part of the offering practices in the Southern Levant, a stem was an absolute necessity for an incense burner. As the stem is the only feature that connects all the different types of Canaanite bowl-shaped incense burners, this part of the vessel was probably decisive for the individual perception and classification of a vessel as such. Stemmed bowls obviously played an important role for mariners as well as priests in the context of ritual incense burning on ships and in temples of the Late Bronze and Early Iron Age in the Southern Levant.

This suggests a similar use of the Aegean kylix in the Levant. As there are still no scientific analyses of residues, their functional interpretation can only be based on a contextual analysis. Two-thirds of the approximately fifty Aegean-type kylikes from the Levant were found at the major harbor centers along the coast and the Late Bronze Age temples in the hinterland (Stockhammer 2012a, forthcoming; Yoselevich 2006; Fig. 4, 1). The distribution of kylikes corresponds significantly with places where ceramic or bronze stemmed bowls of Canaanite type were very commonly used as incense burners. All this evidence indicates that Canaanite-type stemmed bowls and Aegean-type kylikes were used in the context of the same social practices—i.e., as incense burners—in the Levant. The use of kylikes, which were the most common drinking vessel in the Aegean in the thirteenth century BC, for the burning of pungent incense was definitely far from

the imagination of an Aegean potter with regard to the function of those vessels. The similarity of their shape to Canaanite incense burners was probably crucial to the decision of Canaanite mariners and temple personnel who decided to appropriate kylikes of Aegean type and integrate them into their incense burning practices. It is possible that the original function as drinking vessels was known to these actors. However, this possible knowledge obviously did not play a major role in the process of appropriation.

In my opinion, it is highly probable that the identification of the kylikes as incense burners already took place in the context of the first perception of the objects. Thus, it would be misleading to speak of reinterpretation, because this requires the knowledge of the Aegean function as a drinking vessel as a prerequisite. This implies that kylikes were possibly never perceived as drinking vessels when first encountered, but were immediately viewed as incense burners. Maybe a possible usage as a drinking vessel was never considered at all or only secondarily. Why in some cases consumers decided to acquire Aegean-type stemmed bowls instead of Canaanite-type ones has to remain open. Aesthetic reasons or affection for the exotic may have been of relevance. By no means would I suggest that Aegean-type kylikes were never used as drinking vessels in the Southern Levant. The function and meaning of a certain vessel could have easily been determined in new and very different ways.

Entangling the Lines of Thought

My specific aim in this article has been to emphasize the dynamic relationship among objects, functions, and meanings in the framework of the consumption of food. These insights should prevent not only us archaeologists from too quickly attributing a uniform meaning or function to a specific vessel shape—in my particular case Aegean-type vessels in the Southern Levant. It has become clear that there has been a vibrant entanglement between human and things in the context of food consumption even long before the modern era. At the same time, early globalized societies had the ability to consume food transported over large distances. In my view, one should give up on the idea of authentic, locally bound cuisines of the past in contrast to a present global mixture. Humans, food, and objects used to consume food are dynamically entangled with each other, and the potential of this entanglement unfolds through human practices with food and food-related objects. Within this entanglement, food and food-related objects have an important effect on human action and human perception of the world. They have an effectancy in the sense of shaping our practices, emotions, and finally also lifeworlds. The shifting perception of the images on kraters could influence narrations during feasting events. Handles or stems were seen as hindering and removed or helpful to optimize the handling of the vessel while consuming food or hallucinogenic substances. Integrating recently developed scientific analyses, contextual archaeological studies, and an innovative, transcultural approach will enable us to shed a completely new light on past practices with food and add a most important deep historical perspective to current food studies.

Acknowledgments

This contribution is part of my postdoctoral research at the Cluster of Excellence "Asia and Europe in a Global Context" initiative financed by the Deutsche Forschungsgemeinschaft and within my project "BEFIM: Bedeutungen und Funktionen mediterraner Importe im früheisenzeitlichen Mitteleuropa" financed by the German Federal Ministry of Education and Research—both situated at Heidelberg University. I would like to thank Cynthianne Debono Spiteri for her invaluable coaching with regard to the current state of research on organic residues. Moreover, I would like to thank the organizers and participants of the Lampeter conference. The discussions at the conference have been a major inspiration when it came to the transformation of my presentation into the current article. Finally, I would like to thank Jelena Radosavljevic for taking over the correction of the bibliography and the design of the illustrations and Vanessa Schmidt for correcting my English text.

REFERENCES

Abbots, Emma-Jayne, and Anna Lavis, eds. 2013. *Why We Eat, How We Eat: Contemporary Encounters between Foods and Bodies*. Ashgate: Routledge.

Amiran, Ruth. 1960. "A Late Bronze Age II Pottery Group from a Tomb in Jerusalem." *Eretz-Israel* 6: 25–37. [Hebrew].

Bunimovitz, Shlomo, Zvi Lederman, and Eleni Hatzaki. 2013. "Knossian Gifts? Two Late Minoan IIIA1 Cups from Tel Beth-Shemesh, Israel." *Annual of the British School at Athens* 108: 51–66.

Craig, Oliver E., Hayley Saul, Alexandre Lucquin, Yastami Nishida, Karine Taché, Leon Clarke, Anu Thompson, et al. 2013. "Earliest Evidence for the Use of Pottery." *Nature* 496: 351–54.

Davies, Norman de G., and Raymond O. Faulkner. 1947. "A Syrian Trading Venture to Egypt." *Journal of Egyptian Archaeology* 33: 40–46.

Driesch, Angela von den, and Joachim Boessneck. 1990. "Die Tierreste von der mykenischen Burg Tiryns bei Nauplion/Peloponnes." In *Die Keramik von Talioti*, ed. Hans-Joachim Weißhaar and Ingrid Weber-Hiden, Tiryns XI, 87–164. Mainz: Philipp von Zabern.

Eglinton, Geoffrey and Graham A. Logan. 1991. "Molecular preservation." *Philosophical Transactions of the Royal Society of London, B*, 333: 315–328.

Evershed, Richard P. 1993. "Biomolecular Archaeology and Lipids." *World Archaeology* 25: 74–93.

——, Sebastian Payne, Andrew G. Sherratt, Mark S. Copley, Jennifer Coolidge, Duska Urem-Kotsu, Kostas Kotsakis, et al. 2008. "Earliest Date for Milk Use in the Near East and Southeastern Europe linked to Cattle Herding." *Nature* 455: 528–31.

Feldman, Marian H. 2006. *Diplomacy by Design: Luxury Arts and an "International Style" in the Ancient Near East, 1400–1200 BCE*. Chicago and London: University of Chicago Press.

Fischer, Erika. 2007. *Ägyptische und ägyptisierende Elfenbeine aus Megiddo und Lachish. Inschriftenfunde, Flaschen, Löffel*, Alter Orient und Altes Testament 47. Münster: Ugarit-Verlag.

Fuller, Dorian Q., Nicole Boivin, Tom Hoogervorst, and Robin G. Allaby. 2011. "Across the Indian Ocean: The Prehistoric Movement of Plants and Animals." *Antiquity* 85: 544–58.

Gadot, Yuval, Israel Finkelstein, Mark Iserlis, Aren M. Maeir, Pirhiya Nahshoni, and Dvory Namdar. 2014. "Tracking Down Cult: Production, Function and Content of Chalices in Iron Age Philistia." *Tel Aviv: Journal of the Institute of Archaeology of Tel Aviv University* 41(1): 55–76.

Gordon Childe, Vere. 2003. *Man Makes Himself*. Published by Mark R. Edmonds. Nottingham: Spokesman. First published in 1936.

Greenfield, Haskel J. 2013. "'The Fall of the House of Flint': A Zooarchaeological Perspective on the Decline of Chipped Stone Tools for Butchering Animals in the Bronze and Iron Ages of the Southern Levant." *Lithic Technology* 38(3): 161–78.

Haaland, Randi. 2007. "Porridge and Pot, Bread and Oven: Food Ways and Symbolism in Africa and the Near East from the Neolithic to the Present." *Cambridge Archaeological Journal* 17: 165–82.

Hahn, Hans P., and Hadas Weiss, eds. 2013. *Mobility, Meaning and Transformations of Things: Shifting Contexts of Material Culture through Time and Space*. Oxford: Oxbow.

Hanson, Glen R., Peter J. Venturelli, and Annette E. Fleckenstein. 2009. *Drugs and Society*. Tenth edition. Sudbury: Jones and Bartlett.

Heron, Carl, and Richard P. Evershed. 1993. "The Analysis of Organic Residues and the Study of Pottery Use." In *Archaeological Method and Theory* 5, ed. Michael B. Schiffer, 247–84. Tucson: University of Arizona Press.

Hodder, Ian. 2012. *Entangled: An Archaeology of the Relationships between Humans and Things*. Chichester: Wiley-Blackwell.

Jacomet, Stefanie, and Angela Kreuz. 1999. *Archäobotanik: Aufgaben, Methoden und Ergebnisse vegetations- und agrargeschichtlicher Forschung*. Stuttgart: Ulmer.

Knapp, Arthur B., and Peter van Dommelen, eds. 2014. *The Cambridge Prehistory of the Bronze and Iron Age Mediterranean*. New York: Cambridge University Press.

Knappett, Carl. 2005. *Thinking through Material Culture: An Interdisciplinary Perspective*. Philadelphia: University of Pennsylvania Press.

Knipper, Corina, Petra Held, Marc Fecher, Nicole Nicklisch, Christian Meyer, and Hildrun Schreiber. 2015. "Superior in Life—Superior in Death, Dietary Distinction of Central European Prehistoric and Medieval Elites." *Current Anthropology* 56(4): 579–89.

Koh, Andrew J., Assaf Yasur-Landau, and Eric H. Cline. 2014. "Characterizing a Middle Bronze Palatial Wine Cellar from Tel Kabri, Israel." *PLOS ONE* 9(8): e106406 (accessed March 14, 2015).

Kopytoff, Igor. 1986. "The Cultural Biography of Things: Commoditization as Process." In *The Social Life of Things, Commodities in Cultural Perspective*, ed. Arjun Appadurai, 64–91. Cambridge: Cambridge University Press.

Latour, Bruno. 2007. *Eine neue Soziologie für eine neue Gesellschaft. Einführung in die Akteur-Netzwerk-Theorie*. Frankfurt a.M.: Suhrkamp.

Leidwanger, Justin, Carl Knappett, Pascal Arnaud, Paul Arthur, Emma Blake, Cyprian Broodbank, Tom Brughmans, et al. 2014. "A Manifesto for the Study of Ancient Mediterranean Maritime Networks." *Antiquity+* 342, http://journal.antiquity.ac.uk/projgall/leidwanger342 (accessed March 14, 2015).

Maran, Joseph, and Philipp W. Stockhammer, eds. 2012. *Materiality and Social Practice: Transformative Capacities of Intercultural Encounters. Papers of the Conference, Heidelberg, 25–27 March 2010*. Oxford: Oxbow.

Merleau-Ponty, Maurice. 1966. *Phänomenologie der Wahrnehmung*. Phänomenologisch-Psychologische Forschungen 7. Berlin: de Gruyter.

Miller, Daniel. 2010. *Stuff*. Cambridge and Malden, MA: Polity Press.

Namdar, Dvory, Ronny Neumann, and Steve Weiner. 2010. "Residue Analysis of Chalices from the Repository Pit." In *Yavneh I: The Excavation of the "Temple Hill" Repository Pit and the Cult Stands*, ed. Raz Kletter, Irit Ziffer, and Wolfgang Zwickel. Orbis Biblicus et Orientalis 30, 167–173. Freiburg and Göttingen: Vandenhoeck and Ruprecht.

Namdar, Dvory, Ayelet Gilboa, Ronny Neumann, Israel Finkelstein, and Steve Weiner. 2013. "Cinnamaldehyde in Early Iron Age Phoenician Flasks Raises the Possibility of Levantine Trade with South East Asia." *Mediterranean Archaeology and Archaeometry* 12(3): 1–19.

Olsen, Bjørnar. 2010. *In Defense of Things: Archaeology and the Ontology of Objects*. Lanham, MD: AltaMira Press.

——, Michael Shanks, and Timothy Webmoor. 2012. *Archaeology: The Discipline of Things*. Berkeley: University of California Press.

Palaima, Thomas G. 2000. "The Pylos Ta Series: From Michael Ventris to the New Millennium." *Bulletin of the Institute of Classical Studies of the University of London* 44: 236–237.

——. 2004. "Sacrificial Feasting in the Linear B Documents." *Hesperia* 73: 217–46.

Pearsall, Deborah M. 2000. *Paleoethnobotany: A Handbook of Procedures*. San Diego: Academic Press.

Plu, A. 1985. "Bois et grains." In *La momie de Ramsès II: Contribution scientifique à l'égyptologie*, ed. Lionel Balout and Colette Roubet, 166–74. Paris: Editions Recherches sur les Civilisations.

Russell, Nerissa. 2012. *Social Zooarchaeology: Humans and Animals in Prehistory*. New York: Cambridge University Press.

Serpico, Margaret, and Raymond White. 2000. "The Botanical Identity and Transport of Incense during the Egyptian New Kingdom." *Antiquity* 74(286): 884–97.

Spiegelberg, Wilhelm, and Adolf Erman. 1898. "Grabstein eines syrischen Söldners aus Tell Amarna." *Zeitschrift für Ägyptische Sprache und Altertumskunde* 36: 126–29.

Stager, Laurence E. 1985. "Merenptah, Israel and Sea Peoples: New Light on an Old Relief." *Eretz-Israel* 18: 56–64.

Stockhammer, Philipp W. 2008. *Kontinuität und Wandel: Die Keramik der Nachpalastzeit aus der Unterstadt von Tiryns*. PhD diss., University of Heidelberg, www.ub.uni-heidelberg.de/archiv/8612/.

——. 2011a. "Household Archaeology in LH IIIC Tiryns." In *Household Archaeology in Ancient Israel and Beyond*, ed. Assaf Yasur-Landau, Jennie R. Ebeling and Laura B. Mazow, Culture and History of the Ancient Near East 50, 207–36. Leiden und Boston: Brill.

——. 2011b. "An Aegean Glance at Megiddo." In *Our Cups Are Full: Pottery and Society in the Aegean Bronze Age. Papers Presented to Jeremy B. Rutter on the Occasion of his 65th*

Birthday, ed. Walter Gauss, Michael Lindblom, R. Angus, K. Smith, and James C. Wright, 282–96. Oxford: Archaeopress.
——. 2012a. "Performing the Practice Turn in Archaeology." *Transcultural Studies* 1: 7–42.
——. 2012b. "Entangled Pottery: Phenomena of Appropriation in the Late Bronze Age Eastern Mediterranean." In *Materiality and Social Practice. Transformative Capacities of Intercultural Encounters, Papers of the Conference, Heidelberg, 25–27 March 2010*, ed. Joseph Maran and Philipp W. Stockhammer, 89–103. Oxford: Oxbow.
——, ed. 2012c. *Conceptualizing Cultural Hybridization: A Transdisciplinary Approach. Papers of the Conference, Heidelberg, 21–22 September 2009. Transcultural Research. Heidelberg Studies on Asia and Europe in a Global Context*. Berlin and Heidelberg: Springer Verlag.
——. 2015. "Archäologie und Materialität." In *Lost in Things—Fragen an die Welt des Materiellen*, ed. Philipp W. Stockhammer and Hans P. Hahn, Tübinger Archäologische Taschenbücher 12, 25–40. Münster: Waxmann.
——. forthcoming. *Materielle Verflechtungen – Zur lokalen Einbindung fremder Keramik in der ostmediterranen Spätbronzezeit*. Vorgeschichtliche Forschungen 26. Rahden/Westf.: Marie Leidorf.
——, and Hans P. Hahn, eds. 2015. *Lost in Things—Fragen an die Welt des Materiellen*. Tübinger Archäologische Taschenbücher 12. Münster: Waxmann.
Tufnell, Olga, Charles H. Inge, and Gerald Lankester Harding. 1940. *The Fosse Temple*. Bd. 2. Wellcome-Marston Archaeological Research Expedition to the Near East. Oxford: Oxford University Press.
Tzedakis, Yannis, and Holly Martlew. 1999. *Minoans and Mycenaeans: Flavours of Their Time*. Athens: Greek Ministry of Culture and General Directorate of Antiquities.
Tzedakis, Yannis, Holly Martlew, and Martin K. Jones, eds. 2008. *Archaeology Meets Science: Biomolecular Investigations in Bronze Age Greece. The Primary Scientific Evidence 1997–2003*. Oxford: Oxbow Books.
Voskos, Iannis, and Arthur B. Knapp. 2008. "Cyprus at the End of the Late Bronze Age: Crisis and Colonization or Continuity and Hybridization?" *American Journal of Archaeology* 112: 659–84.
Warinner, Christina, Joao F. Mtias Rodrigues, Rounak Vyas, Christian Trachsel, Natallia Shved, Jonas Grossmann, Anita Radini, et al. 2014a. "Pathogens and Host Immunity in the Ancient Human Oral Cavity." *Nature Genetics* 46: 336–44.
Warinner, Christina, J. Hendy, C. Speller, E. Cappellini, R. Fischer, C. Trachsel, J. Arneborg, et al. 2014b. "Direct Evidence of Milk Consumption from Ancient Human Dental Calculus." *Scientific Reports* 4(7104): 1–6.
Wilk, Richard. 2006. *Home Cooking in the Global Village: Caribbean Food from Buccaneers to Ecotourists*. Oxford and New York: Berg.
Wright, James C. 2004. "A Survey of Evidence for Feasting in Mycenaean Society." *Hesperia* 73: 133–78.
Yasur-Landau, Assaf. 2005. "Old Wine in New Vessels: Intercultural Contact, Innovation and Aegean, Canaanite and Philistine Foodways." *Tel Aviv: Journal of the Institute of Archaeology of Tel Aviv University* 32(2): 168–91.
——. 2008. "Hard to Handle: Aspects of Organization in Aegean and Near Eastern Feasts." In *DAIS: The Aegean Feast. Proceedings of the 12th International Aegean Conference University of Melbourne, Centre for Classics and Archaeology, 25–29 March 2008*, ed. Louise A. Hitchcock, Robert Laffineur, and Janice Crowley, Aegaeum 29, 353–58. Liège: Université de Liège.
Yoselevich, Noga. 2006. "The Utilization of Chalices as Incense Burners on Boats and in Coastal Sites." *R.I.M.S. News* (University of Haifa, Leon Recanati Institute for Maritime Studies) 32: 27–28.
Zuckerman, Sharon. 2007. "'Slaying Oxen and Killing Sheep, Eating Flesh and Drinking Wine': Feasting in Late Bronze Age Hazor." *Palestine Exploration Quarterly* 139(3): 186–204.
——. 2008. "Fit for a (not-quite-so-great) King: A Faience Lion-Headed Cup from Hazor." *Levant* 40(1): 115–25.