More than a pile of sherds: functional analysis and social behaviour during Iron Age Alalakh

MARIACARMELA MONTESANTO

Department of Archaeology, Durham University

Abstract

Recent excavations at the site of Tell Atchana, ancient Alalakh, have clarified the presence of Iron Age periods. Despite being at the centre of these changes, the Late Bronze-Iron Age transition at Alalakh and in the Amuq remains poorly understood in terms of chronology and its social impact. A key question is the degree to which changes evident in the archaeological records should be credited to population movements or to the reorganization of social, economic and political structures by the local population. This paper considers the assemblage from a functional point of view to discuss any change or continuity in habits and actions evident from the Late Bronze Age to the Iron Age and during the Iron Age. In particular, this article aims to be a first attempt to propose a functional study of pottery from the Amuq Valley, thus linking the documentation of Northern Syria with that of Southern Anatolia. Furthermore, it will try to establish a set of morphological and physical characteristics of pottery vessels that, within limits, can be used to define how well suited particular vessels are to perform particular tasks.

Keywords

Pottery, Iron Age, Northern Levant, Archaeological theory, functional analysis, Tell Atchana/Alalakh, Amuq Valley

1. Alalakh in the Iron Age

The site of Tell Atchana, ancient Alalakh is located in the Amuq Valley, modern province of Hatay, Turkey.[1] Recent excavations on the site have clarified the presence of Iron Age periods.[2] While it was previously thought that the city was abandoned towards the end of the Late Bronze Age, new research revealed a prolonged period of occupation into the Iron Age.

Recent excavations in square 42.10 (fig. 1) yielded a number of contexts dated to the Iron Age I and Iron Age II period (ca. 12th-9th century BC). Excavations in this square uncovered a sequence of three architectural phases (local phases 3-1) dated to the Iron Age I and II. This paper will focus on the functional analysis of pottery vessels retrieved from these phases to offer a deep understanding of changes in social habits during the Iron Age at Alalakh.

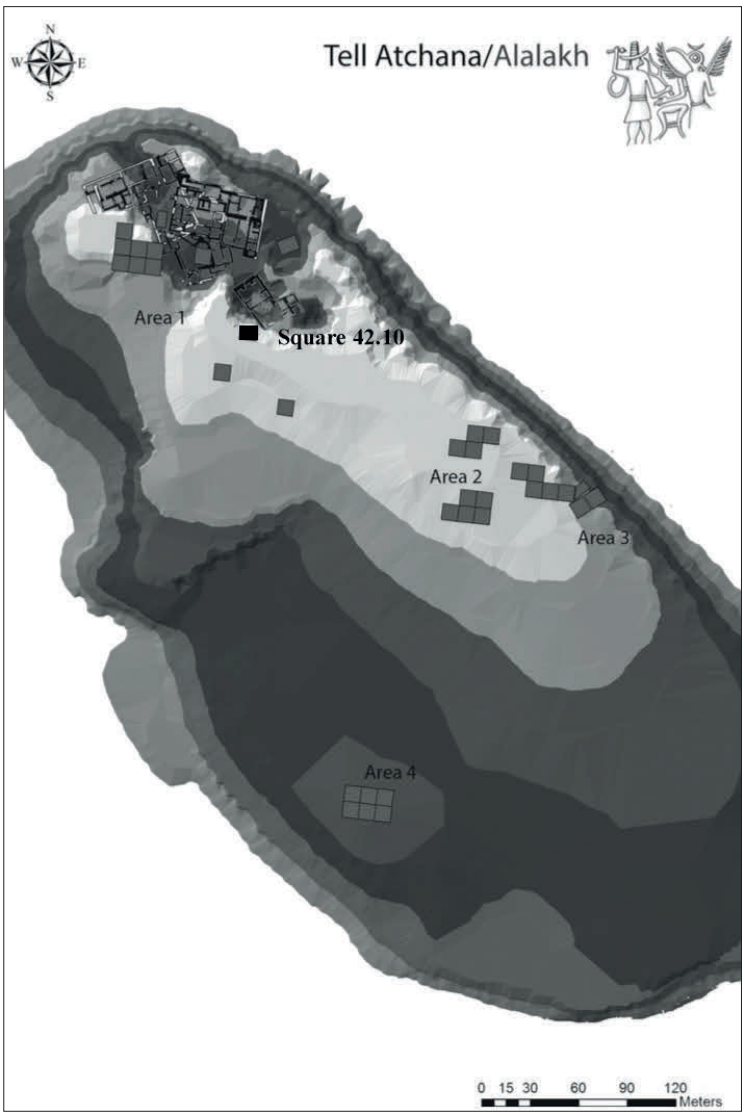

Figure 1
Map of Tell Atchana with location of square 42.10
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[1] Yener (ed.) 2010; Yener 2013.

[2] Yener 2013; Yener, Akar 2013.

Square 42.10 is an open area with very few architectural features that has been identified as an area related with food preparation and consumption and it is supported by the finding of objects such as grinding slabs, querns, handstones, mortars and basins, related to the processing of foodstuff, by the presence of vessels linked to the processing (cooking pots), and consumption (plates and bowls) and by the recovery of a pyrotechnical installation interpreted as a circular oven in phase 3 and of rounded stone structures interpreted as potsherds hearths. The square yielded three phases that have been dated from the Iron Age I to the Iron Age II on the base of the pottery recovered. Phases 3a-b have been dated to the Iron Age I (mid-12th century BC), phases 2a-b have been dated to the late Iron Age I and phase 1 to the Iron Age II (9th century BC).

2. Background on functional analysis

Food and the variety of human activities related to it have received a particular focus in the archaeological research over the past years.[3] Recently, an increasing number of archaeologists focused on studying food preparation and consumption to reveal social information beyond activity areas, subsistence and tool inventories.

Food, foodways, cooking pots and tablewares are increasingly occupying an important place in scholarly research.[4] This renewed interest in food production and consumption and in the tools used to perform these activities is strictly connected with the understanding of the relation between food (and any tool associated with it) and social practices.

Most of the archaeological studies debate the role that food had in daily practices and events, craft production and culinary practice, identities and culinary labour, politics and economies, social boundaries, communities and ritual.[5]

Some scholars[6] dedicated their research on establishing a way to interpret pottery vessels as specific tools employed during food production and consumption practices that is to define the affordances[7] of the vessels and to assign them to a food-related function.

Vessels are made for a certain purpose and therefore the study of vessel function is fundamental for the understanding of how the vessels were used. The study of function is generally based on the analysis of the archaeological context and on the study of the performance characteristics of vessels. Many studies have been related to the study of ceramic function and this article aims to be a first attempt to propose a functional study of pottery from the Amuq Valley, thus linking the documentation of Northern Syria with that of Southern Anatolia.

The aim of this article is to establish a set of morphological and physical characteristics of pottery vessels that, within limits, can be used to define how well suited particular vessels are to perform particular tasks.

Indeed, if we consider pottery vessels as tools, the morphological and physical characteristics of the vessels may determine their performance.

Individual pottery vessels may be used for different tasks, however, they will not perform all tasks equally well. The different attributes of vessels give them different affordances; i.e. they make some task easier and other more difficult to perform.

Hence, vessel attributes give us a material means of suggesting possible uses for different ceramic forms; in this way it is possible to characterise given ceramic assemblages in terms of the set of tasks they were suited to perform.

However, while archaeologists may identify the function of the pottery vessels with a certain reliability, functional distinctions can be made only at a general level. This is due in part to the nature of the archaeological pottery, mainly consisting of sherds and rarely of complete vessels, and because of the lack of a direct connection with potters and users of the past.

[3] Dietler, Hayden (eds.) 2001; Bray (ed.) 2003; Mee, Renard (eds.) 2007; Graff, Rodríguez-Alegría (eds.) 2012; Spataro, Villing (eds.) 2015.

[4] Spataro, Villing (eds.) 2015; Graff 2018.

[5] Graff 2018.

[6] Henrickson, Mcdonald 1983; Rice 1987; Smith 1988; Hally 1986; Duistermaat 2008.

[7] Costall 1995.

Several scholars[8] have classified pottery assemblages according to different functional classes, divided according to specific features of shapes, fabric and surface treatment.[9]

In the analysis of the ancient function of a vessel, form and material seem most important. For example, the relative openness of the vessel profile, rim shape and diameter, its volume and size and its surface treatment and decoration are commonly regarded as indicative of use.[10] More specifically, when considering the morphological and physical variables that define vessel function, one might look at maximum diameter by size class, the vessel height-maximum diameter ratio, vessel's stability as defined by the type of base used, and effective vessel capacity as defined by the maximum volume of material that was normally placed in the vessel. The volume is determined by vessel shape and size and by the level to which the vessel was filled.

Other characteristics that define the function of a vessel are: the ease with which the content of the vessel could have been manipulated as determined by the size of the opening and the height of the vessel and the way the content was removed from the vessel. This characteristic is very important in order to determine how the content was consumed and manipulated. Material can be removed from a vessel in two ways. It can be lifted out with the help of a tool or poured. Pouring is affected by a series of factors: vessel size, opening dimensions and rim orientation. The direction and shape of the rim is directly linked with pouring as the tendency of liquids to adhere to the surface of the vessel lip during this action increase the stream velocity. This effect can be modified by changing the direction of the rim and in particular by using out-flaring rims. In contrast, large vessels may be heavy when full to lift and therefore the content must be removed by using a ladle or a spoon.

It has been decided to divide the vessels into three functional groups that mirror a simplified schema of the different steps of food provision: food processing, consumption and storage.

This division was made by identifying particular attributes that may hint at the affordances (i.e. the physical characteristics) of particular shapes. The function of transport has been omitted as, in general, ceramic vessels are mainly suited for the transport of liquids.[11] However, the physical characteristics that define the suitability of ceramic vessels for the transport of liquid goods also define ceramic vessels designed to store liquids. The analysis carried out in this article is based mainly on the rim sherds recovered as it is not always possible to clearly identify the vessel's shape from the body sherds.

Because all of the functional analysis of pottery is generally made on the morphological attributes of the vessels, on residual analysis and on ethnographic comparisons rather than on pure archaeological data, it can be subject to criticism.

Functional analysis, besides being dependent on the affordances of the vessels, it is subordinate to the analysis of the archaeological context and therefore it must be applied to a single excavated area and it cannot be considered valid for a wider region without comparing the functional set with similar and more abundant sets and dating to the same period.

Although many scholars used the physical characteristics of pottery vessels to establish a range of functional categories, this study would like to combine previous studies on the subjects with a theory borrowed from sociology. In 1977 the sociologist James J. Gibson[12] coined the term "affordances" to describe the potential actions that are made possible by a given object. As such, the affordances exist independently of the act of perception and they correspond to how the object can be used according to its morphological characteristics and to the environment surrounding it. When applied to ancient ceramics, this theory will result in a set of attributes including design parameters that define the affordance of a vessel for a specific task.

[8] Rice 1987; Duistermaat 2008.

[9] Skibo 2013; Henrickson, Mcdonald 1983; Sinopoli 1991; Skibo 1992; Graziadio, Pezzi 2013; Mazow 2005; Hendrix, Drey, Storfjell 1997.

[10] Rice 1987, pp. 224-226; Smith 1988; Hally 1986.

[11] Duistermaat 2008, p. 440.

[12] Gibson 1977.

3. Food processing

Food processing is the transformation of raw materials into food, or of food items into other forms for consumption. This processing involves non-ceramic utensils such as grinding stones, mortars, knives and other objects that were used to process raw materials. However, since the main focus of this article is pottery, only pottery vessels will be considered in the analysis of food processing.

In order to be considered part of the processing category, a vessel has to have particular attributes that allow an involvement in the transformation of food into a consumable product. These attributes include design parameters that define the affordance of a vessel for a specific task. Of these, cooking is the food processing task that is most dependant on the design parameters of vessels because of the problem of thermal shock that is the differential expansion caused by the contact with a heat source.[13] Hence, the most specialised vessel for the processing of food is the cooking pot.

The main feature related to this type of vessel is the ware. Cookware is a very particular type of fabric designed to resist to thermal shock. In order to be resistant to thermal shock, cookware is usually made of different types of clay minerals that are more or less naturally resistant to thermal shock. However, even the most ideal cookware must be mixed with a large quantity of tempering material in order to strengthen the vessel and make it possible for the vessel to be placed on the fire. Even the best cookware will not withstand the difference in thermal expansion between the hotter bottom and the cooler top without cracking if not tempered.[14]

In Late Bronze and Iron Age Atchana cookware is made of a highly plastic material with few grits or sand. The fabric is heavily tempered with crushed shells. The adding of a large amount of tempered material increases the thermal shock resistance.[15] The primary component of shell is calcium carbonate and the inclusion of calcite elements to clay pastes reduces the shrinkage during drying and increases thermal shock resistance during firing and use.[16]

Other attributes that make a vessel suited for food processing are its size and shape. Shapes fitted to process food need to be suitable to be put close to a heating source, they need to be able to withstand thermal shock and to have a body shape with no sharp carinations in order to minimise different thermal inclinations from one side of the vessel to the other.

Two shapes of cooking pot have been recovered from the Iron Age levels of Alalakh: the Broad Cooking Pot (BRCP, fig. 3: e) and the Holemouth Cooking Pot (HMCP, fig. 2: k).

Generally, BRCPs have a wide opening, a kind of neck and a biconical body. They have a diameter rim range of 25-35 cm[17] with a volume ranging from ca. 10 to 28 lt. HMCPs have a narrower opening when compared to the BRCP, a biconical body and a low carination. Furthermore, they often have strap or, in later levels, ear-like handles. They have a diameter rim range of 12-25 cm and with a volume of ca. 6-8 lt.

Broad cooking pots represent the 4% of the whole assemblage and they are more popular in the first levels of the Iron Age (3-5%; phases 3b and 3a), while they become less popular in later levels (5-2%; phases 2b-1). Hole-mouthed cooking pots represent the 5% of the whole assemblage. They are less popular in the first levels of the Iron Age (2%; phases 3b-a) but they become quite popular in the later phases (6-8%; phases 2b-1).

Cooking pots with wide mouths, such as the broad cooking pots, enable an easy access to the content and a fast evaporation and are usually meant to cook dishes that are meant to thicken liquids and that require frequent stirring.[18]

In contrast, cooking pots with a narrow opening, such as the hole-mouthed cooking pots, reduce the relative surface area so that the liquid evaporates more slowly and it is practical to cook food with high liquid contents, such as stew, porridges, broth and legumes.

[13] Rice 1987.

[14] Rice 1987.

[15] Müller et Al. 2014, p. 269.

[16] Rice 1987, pp. 97-98; Rye 1976.

[17] Horowitz in press.

[18] Villing, Spataro 2015, p.6.

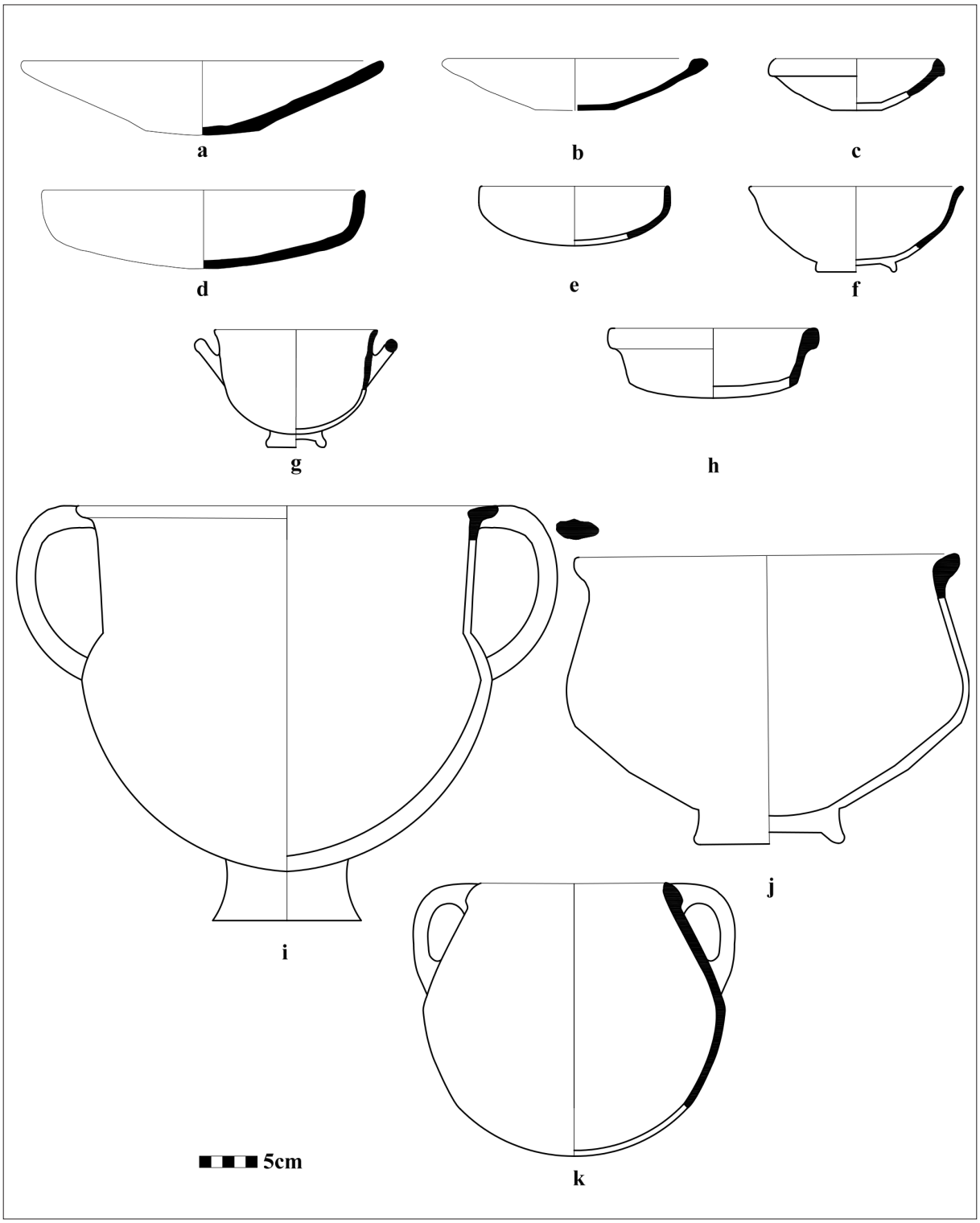

Figure 2
Selected Iron Age pottery reconstructed:
a) flat plate; b) rim bowl; c) shallow bowl; d-e) bowl with straight upper part; f) hemispherical rounded bowl; g) carinated bowl; h) hemispherical flaring bowl; i) biconical krater; j) flanged krater; k) holemouth cooking pot

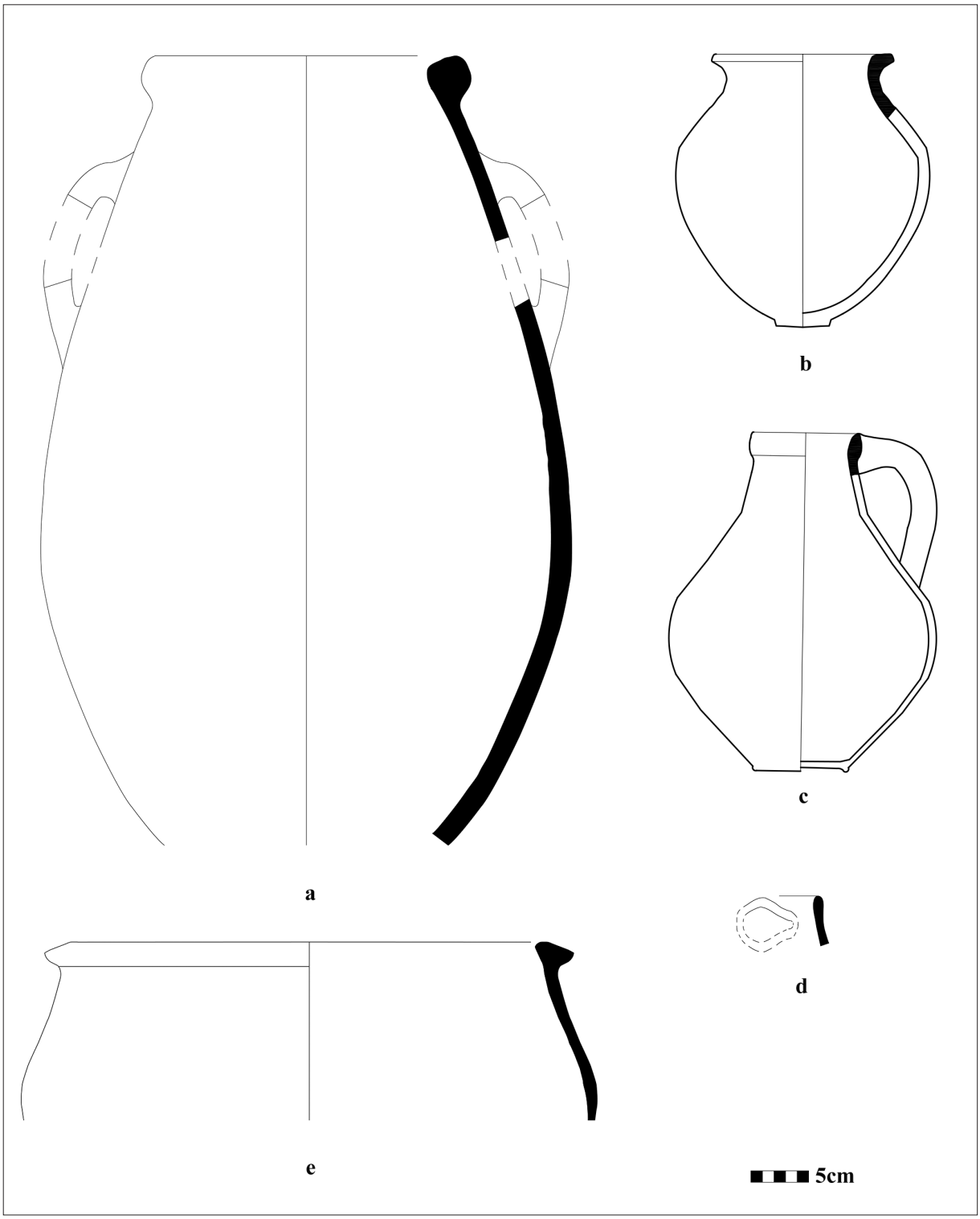

Figure 3
Selected Iron Age pottery:
a) pithoid jar; b) globular jar; c) high-necked jar; d) pitcher; e) broad cooking pot
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The functional analysis of cooking pots can also be used to understand social daily life and practices of ancient societies. The differences in size and volume may show a different strategy used when cooking a meal for a bigger or a smaller household. The size of cooking vessels is related to the quantity of food and thus to the number of people for whom the food is prepared. Therefore, cooking pot's capacity might be related to the contexts in which the consumption of food took place. Large cooking vessels imply the consumption of a large quantity of food and point to a greater number of people involved, while smaller cooking vessels might point to a house's ordinary cooking pot assemblage and therefore they might reflect a more domestic scale of food preparation and consumption.

It is possible that larger sized cooking pots, as the majority of the broad cooking pots, were used to cook more than one meal at once or a meal for a higher number of people in comparison to the medium sized cooking pot, as the majority of the hole-mouthed cooking pots, that could have been used for a smaller number of people or for one or two meals for a small household.

The increase of the hole-mouthed cooking pot in Iron Age levels and the gradual decrease of the use of the broad cooking pot may be linked with a change in cooking habits with regard to what was cooked inside these vessels, and possibly it may suggest a reduction in size in the households.

It seems that the hole-mouthed cooking pot does not replace the broad cooking pot as they appear together from the first layers of the Iron Age up to the end of the Iron Age occupation on the site. However, it can be noted the preference for a new way of cooking, probably linked with the adoption of new recipes and of new cooking habits.

4. Food and drink consumption

Food and drink consumption includes all the activities related with the act of consuming food, such as serving and short-term containment. This process may involve vessels not made of clay but of different material such as metal and wood that will not be considered here.

In order to be considered as part of this category, a vessel must have some particular attributes to make its affordance suitable to consume food and drink. All food consumption is facilitated by vessels with certain general qualities (e.g. impermeability, accessibility, manipulability). However, due to the different natures of solid and liquid foods, these general qualities are often realised by means of distinct vessel attributes in each case.

One of the main attributes to consider when dealing with vessels related to food and drink consumption is their fabric. In order to contain food or liquids the fabric has to have a very low permeability coefficient, a low level of porosity and ideally it has to have surface treatments thought to decrease the permeability of the vessel.

Furthermore, very important attributes to consider when dealing with vessels used for food consumption are shape and size. More particularly, in order to be considered as part of this functional category, a vessel should have a shape that provides an easy access to its content, it should be of an average size to allow the vessel to be handled easily and it should have physical characteristic to make the vessel suitable to contain dry and/or liquid food and drinks.[19]

Once it has been established that the vessel could have been used for food and drink consumption according to their shape, and in particular to the form of the body and of the rim, it may be possible to divide vessels into those used for the consumption of dry or liquid food, i.e. eating and vessels used for the consumption of drinks.

To do this it was taken into consideration their average rim diameter size. The rim sizes have been plotted into a table (table 1) in order to define the more frequent rim clusters per each shape:

- Bowls with average rim size of 26-28 cm and a capacity up to 2 lt.
- Bowls with average rim size of 20-24 cm and a capacity of ca. 0.50/0.80 lt.
- Bowls with average rim size of 12-16 cm and a capacity of ca. 0.20/0.30 lt.

[19] Henrickson, Mcdonald, 1983, p. 632; Hally, 1986.

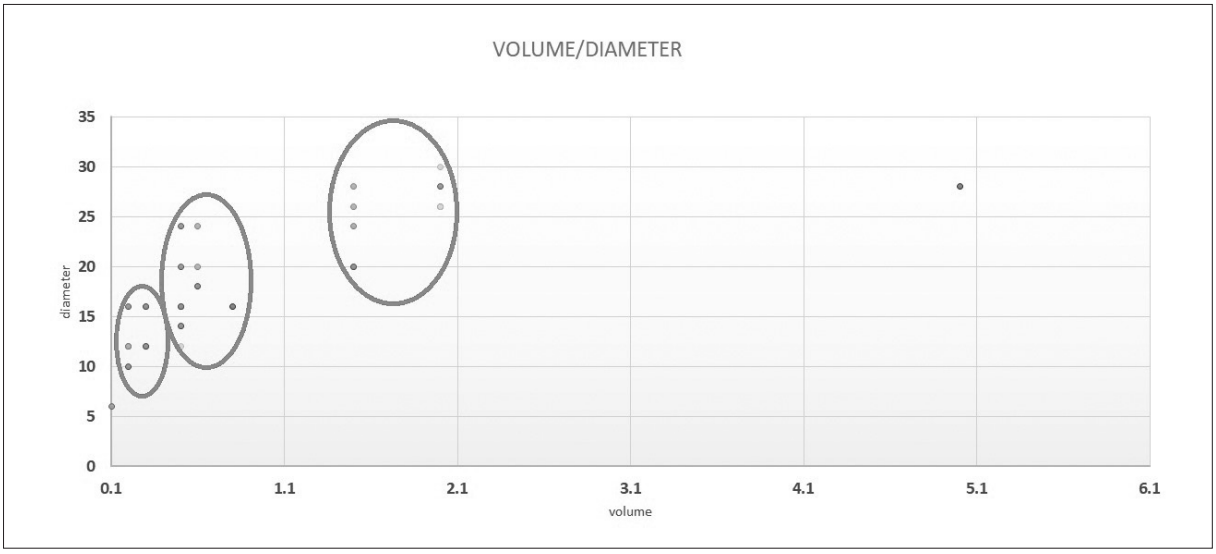

Table 1
Correlation between rim diameter and volume/size
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In addition, the table shows a set of miniature vessels, hemispherical rounded bowls, with an average rim size of 6-8 cm and a capacity of less than 0.1 lt. These vessels are suitable for the consumption of drinks but given their volume and size it is possible that they were used during rituals.[20]

The graph also shows a cluster of bowls with an average rim size of 30 cm and a capacity of ca. 5 lt. Due to their size and capacity they might be considered as saucers or serving bowls.

Bowls with an average rim size of 12-16 cm and a volume capacity of ca. 0.20/0.30 lt can be considered as single portion, drinking bowls; bowls with an average rim size of 20-24 cm and a capacity of ca. 0.80/1 lt might be too big to be considered for single portion drink consumption and they might have been used as eating bowls.

The analysis of the average rim size and capacity allowed to distinguish eating bowls from drinking bowls. The criteria used to make this division are based on the attributes of the vessels, their size and capacity.[21]

As a result the first two categories of bowls might be considered as exclusively eating bowls (rim size of 26-20 cm and 20-24 cm) while the last category of bowls might have been used both as drinking and as eating bowls (rim size of 12-16 cm). Flat plates have been considered as eating vessels.

The other criteria used to distinguish in between eating and drinking bowls was the analysis of the rim type: thickened internal and thickened external rim types are not suitable for direct consumption of the liquid content while simple or out-flaring rims, increasing the velocity of the stream while leaving the vessel, facilitate the direct drinking of the content.

Having made this first division on between eating and drinking bowls, based on average rim size and capacity and rim types, we can discuss the content of these bowls.

The main difference noticeable is the way the food was consumed: depending on the rim type it would have been consumed by using a tool or by direct consumption.

The division made in between dry and liquid food consumption is therefore arbitrary and at the end, vessels used for dry and liquid food consumption will be considered as part of the same function that is eating.

[20] Glatz 2009, 2015.

[21] Duistermaat 2008.

5. Eating: dry food

A vessel, in order to be considered satisfactory to be used to eat dry food, must have an open shape, designed to allow an easy access to the food. It might have a flat or shallow or flat body not suitable to hold a reasonable amount of liquid. It should have a flat or ring base to facilitate its stability and a rim shape designed not to obstruct the interior surface.

The shape recovered in Alalakh that best suits these characteristics is the flat plate (fig. 2: a). Flat plates are very simple, open vessels with flat or slight shallow body, straight or thickened rim (not protruding inward) and with mostly flat and ring bases. Their very shallow form and absence of an obstructing rim, makes these vessels unsuitable to contain and to consume liquid food.

According to their size, flat plates can be divided into serving plates and eating plates. Flat plates with an average rim diameter of 30-35 cm and 40 cm should be considered as serving plates. They might have been used to carry food such as bread or to contain food to be used during communal eating events. Flat plates with an average rim diameter of 24-28 cm and 18-22 cm should be considered as eating plates. Their relatively small dimension might imply the use of these plates as single portion dishes. Plates do not occur in Middle Bronze Age Atchana while they were introduced during the Late Bronze Age.[22] Local versions of the 40 cm Anatolian plate were recovered from Late Bronze Age II levels and from phase 3. This type of plate has a stepped rim formed by scraping away the clay on the inside ca. 3-4 cm down the rim. It can be considered a local imitation of the Hittite style platter rim found in many Hittite sites.[23] Flat plates with an average rim diameter of 40 cm are not very common in the Iron Age levels of Alalakh while they are very popular in all contexts dated to the Late Bronze Age II.[24] In contrast, flat plates with an average rim diameter of 24-28 cm and 18-22 cm are very popular throughout all the Iron Age levels. Flat plates are not deep enough to contain liquid as any attempt to move the flat plates will result in the spilling of the liquid and therefore they have been considered as compatible with the dry food consumption.

Flat plates represent the 12.40% of the whole assemblage. They are more popular in the first phases of the Iron Age (phases 3a-b: 23.27%): and less popular in the later phase of the settlement (phases 2a-b: 24.57%; phase 1: 12.36%).

6. Eating: liquid food consumption

A vessel, in order to be considered suitable to consume liquid food, must have an open shape, to provide an easy access to its content; a shallow body form apt to contain liquids; a flat or ring base to give the vessel stability and a rim shape designed to obstruct the flat surface and to prevent the spilling of its content or that facilitates the direct ingestion of the content.[25] The shapes recovered in Atchana Iron Age levels that best suit these features are the rim bowls (fig. 2: b) and the shallow bowls (fig. 2: c).[26]

Rim bowls have a shallow body, a flat or a ring base and a thickened internal rim that can prevent the spilling of its content. The design of their shape and in particular of the rim, that is thickened internal, make them unsuitable for the consumption of liquid food by lifting them to the mouth.

Shallow bowls have a shallow body, a flat or a ring base and a thickened external rim. The presence of the thickened external rim will not prevent the spilling of a liquid content but it may allow the consumption of fluid contents by using tools such as a spoon or bread.

These shapes represent the 12.69% of the whole pottery assemblage: shallow bowls are more common during the first phases of the Iron Age I (phases 3a-b: 18.62%) and they decrease during the later phases (phases 2a-b: 10.65%; phase 1: 0.11%); rim bowls stay constant during the Iron Age I (phases 3a-b: 21.2%; phases 2a-b: 21.2%) and decrease during the Iron Age II (phase 1: 3.56%).

[22] Horowitz in press.

[23] Glatz 2009, p. 130; Horowitz 2015, p. 171.

[24] Horowitz in press.

[25] Glatz 2015, p. 197.

[26] Pucci in press.

In addition to these shapes, it should be noted that the carinated bowls (fig. 2: f), the hemispherical (flaring) bowls (fig. 2: g) and the hemispherical rounded bowls (fig. 2: e) with an average rim diameter of 18-20 cm and with a capacity of 1 lt might have been used as eating bowls.

7. Drinking

Vessels suitable for direct drinking must have an open shape and a rim shape that facilitates the direct access to the drink and a size and capacity suitable for a single portion.[27] Shapes in the Iron Age Atchana typology with affordances that meet these features are the carinated bowls (fig. 2: f), the hemispherical (flaring) bowls (fig. 2: g) and the hemispherical rounded bowls (fig. 2: e).

They come in two sizes: bowls with an average rim diameter of 14-18 cm and a capacity of 0.50-0.60 lt and bowls with an average rim diameter of 10-12 cm and a capacity of 0.20-0.30 lt.

Although their design suggests that these shapes were used as drinking vessels, as already suggested previously, the biggers might have been used as eating vessels.

All these shapes represent the 12.04% of the whole pottery assemblage: carinated bowls are less popular during the first phases of the Iron Age (phases 3a-b: 5.26%) and more popular in the later phases (phases 2a-b: 12.53%; phase 1: 6.3%); hemispherical (flaring) bowls are not very common during the Iron Age I (phases 3a-b: 0.83%; phases 2a-b: 0.83%) but increase during the beginning of the Iron Age II (phase 1: 2.73%). A similar pattern can be noted with the hemispherical rounded bowls (phases 3a-b: 7.9%; phases 2a-b: 23.5%; phase 1: 3.09%).

8. Serving

The functional category of food consumption includes a category of vessels meant to contain, to mix and to serve food.

These containers need to be deep enough to contain a substantial amount of liquid or more generally of food, and they need to have a rim designed in order to avoid the spilling of the content; they might also have such a volume and size to be easily lifted and the design might include attributes modelled to facilitate the lifting.

These vessels are considered serving or mixing vessels and not as short-time storage vessels as they were possibly used as part of the tableware.

Vessels that satisfy these attributes found in Iron Age levels of Alalakh are the pitchers (fig. 3: d), the kraters (figs. 2: i-j), the deep bowls (fig. 2: h) and the bigger size version of the eating bowls (fig. 2: d). Pitchers are vessels designed to contain liquids and modelled to facilitate the lifting. These are closed shapes, jars, with a spout.

The use of kraters as mixing vessels for wine and other drinks is very well established in the literature regarding the Near East and the Mediterranean area.[28] While it is very well possible that kraters were used as mixing vessels, it is also possible that mixing was not the only function they were used for.

Other vessels suitable as liquid containers and possibly used as serving vessels or for short-term dry storage are the deep bowls (fig. 2: h). They have a deep and large body and a simple or thickened external rim but they are too large and might have resulted too heavy to be lifted for a direct consumption. The shape and size of the kraters and the deep bowls suggests that they were used together with serving tools such as spoons or dippers. However, no spoon has been found in Iron Age Alalakh and very few dippers have been retrieved,[29] therefore it is possible that the bowls were directly dipped in the kraters or deep bowls.[30] Kraters represent the 1.11% of the whole pottery assemblage. Their frequency is constant towards all the phases of the Iron Age (phases 3a-b: 2.61%; phases 2a-b: 2.35%; phases 1: 1.4%).

[27] Henrickson, Mcdonald 1983; Hally 1986.

[28] Yasur-Landau 2010; Steel 2004; 2013, p. 31.

[29] Kohel 2017, fig. 18.4.1.2.

[30] Pucci in press.

9. Storage

This functional category includes all vessel used to store liquid or solid food. They can be further divided into short and long term storage vessels and dry and liquid storage.[31]

The main difference in between liquid and dry storage vessels is in the dimension of their opening and the presence of the neck.

10 Liquid Storage

Vessels suitable to store liquid contents should have a combination of attributes to satisfy certain needs. Vessels used to store liquid products should have a small opening size and a neck in order to reduce the spillage and the evaporation of the content itself and to facilitate the pouring. Vessels used to store liquids with an opening not allowing the insertion of a tool such a ladle, must have a size and a volume to allow them to be easily lifted when needed. Consequently, according to their size and volume, the vessels should be divided into short and long term storage: a short-term storage vessel will have a smaller size and volume in comparison to the long-term storage vessel.

Vessels that satisfy the requirements for short-term storage are the high-necked jars (fig. 3: c). They have an average rim diameter of 4-11 cm and a capacity of ca. 3 lt, a thickened or pinched rim, a high and narrow neck and possibly a piriform or globular body and ring base.

Other vessels suitable to store liquid food for a short term are the globular jars (fig. 3: b). They have a ratio of height more than twice its radius; a relative wide opening with an average rim diameter of 12-14 cm and a capacity of ca. 13 lt. Generally, they have an everted rim, a short neck, a globular body and a flat base.

Some rounded jar stoppers have been found in phase 1 and 2: they were cut out of pottery vessels and their diameter ranges from 4 cm to 5.5 cm. The presence of these jar stoppers suggests that they were used to cover vessels with a small opening such as the High necked jars with a small rim diameter. Liquid storage vessels represent the 5.06% of the whole assemblage. They are not very common during the Iron Age I phases (phases 3a-b: 4.24%), but they tend to increase during the late Iron Age I (phases 2a-b: 9.37%) and the Iron Age II (phase 1: 10.10%).

11. Dry Storage

Vessels suited to store a dry content need to have an opening large enough to allow the insertion of a hand or of a tool but the same time they need of providing restrict access to the content in order to avoid decay and therefore they need a type of rim or an applied decoration on the body to facilitate the fastening of a flexible covering on top of it. Any type of food and in particular dry food needs to be kept in a dry place, with a stable temperature, ventilated and with no light. The presence of the neck might facilitate the observance of some of these conditions and therefore, when present might indicate the necessity of frequent access to the content. As we have seen in the previous paragraphs, vessels such as the deep bowl, the krater and the large-sized eating bowls, all of these shapes lacking of the neck, might have been used also as short-term dry storage vessels.

Vessels suited to store dry food for a long-term are the pithoid jars (fig. 3: a). Usually they have a thickened external rim, a pointed base and a sort of decoration underneath the rim to help fastening the cloth in order to close the opening. They have an average rim diameter of 40 cm and a capacity of ca. 60 to 150 lt.

Pithoid jars are very uncommon throughout all the Iron Age at Alalakh, they represent the 0.73% of the whole assemblage and their numbers is very constant throughout all the phases (phases 3a-b: 0.5%; phases 2a-b: 1.85%; phase 1: 0.35%).

[31] Henrickson, Mcdonald 1983.

12. Conclusions

Social habits and behaviours involving food preparation and consumption are connected with vessels use and with their function. By identifying functional attributes of different vessel shapes and size it is possible to relate archaeological pottery assemblages to past foodways. This approach holds certain advantages over more traditional type-variety classification systems as the analytical units defined are functionally meaningful. This article was meant to be a methodological baseline for future studies based on the pottery assemblages of the Amuq Valley and, more in general, of Northern Syria and Southeastern Anatolia. This study identified three functional categories for the Alalakh pottery assemblage in the Iron Age. These functional categories have been identified according to specific attributes of shape and design, physical and morphological variables as well as vessels capacity. The analysis performed on the Iron Age pottery assemblage from Alalakh resulted in the definition of three functional categories, namely: food processing, food consumption and storage. The analysis of the pottery according to these categories, rather than according to the morphology of the vessels, provides important data for identifying changes in habits and behaviours over time. When looking at quantities of pottery and at their functional categories it is possible to provide a detailed overview (table 2). The major changes are visible in the food processing and food consumption functional categories.

For instance, the increase use of the hole-mouthed cooking pot over the broad cooking pot might be linked with the introduction of new recipes, of new cooking installations and it might also suggest a change in the site's and household's economy during the first centuries of the Iron Age I and through the Iron Age II. According to the shapes and sizes of the Iron Age cooking pots from Alalakh, there was a certain variety of dishes that comprised an ordinary meal in that period. Meals were prepared for a large number of people and for a limited number of people. The presence of cooking pots of larger capacities indicates the consumption of food by a larger group of people who shared the everyday meals, or it may be related to their use in special events that involved a larger number of people. The use of smaller cooking pots indicates that meals were consumed by a rather limited number of people, suggesting a more domestic scale for their use.

The study of cooking pots' shape also shows morphological differentiation which points to different culinary practices. It appears that during the Iron Age I there was a preference for ceramic vessels used for boiling, while during the Iron Age II cooking vessels used for stewing were more popular.

Drinking and eating assemblages were influenced by the introduction of Aegean shapes and elements: the single portion shallow bowls (fig. 2: b) and rim bowls (fig. 2: c), which were so popular during the first phases of the Iron Age strongly decrease towards the Iron Age II while large quantities of bowls (figs. 2: e-g) have been found towards the end of the Iron Age I. The rim and size (0.80/1 lt) suggest that these shapes may have replaced the disappearing shallow bowls as single portion eating vessels.

The hemispherical (flaring) bowl is the local imitation of an Aegean shape (FS 284-286)[32] and together with the carinated bowl and the hemispherical rounded bowl became very popular to-

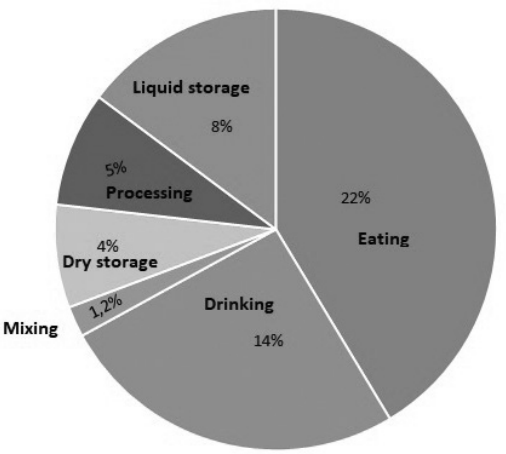

Table 2
Vessel functional distribution
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[32] Furumark 1941; Mountjoy 1999.

wards the end of the Iron Age I. These shapes are homogeneous in their general attributes and size (0.20/0.30-0.50/0.60 lt) and they can be considered as single portion drinking vessels.

As a result, the study of Alalakh's pottery assemblage demonstrates a change in culinary practices and household's economy as well as a strong presence of Aegean elements in the eating and drinking sets with the introduction of a new single portion bowl. However, the introduction of this new shape did not influence the division of food, which was still carried out through single portion bowls, or the way of drinking out of them.

In the Aegean world, stemmed vessels (i.e. kylikes) were used as drinking vessels, however, Aegean-type kylikes are considerably rarer in the Levant when compared to other Aegean shapes and recently their function as drinking vessels has been questioned and they have been considered as an Aegean imitation of Levantine incense burners.[33]

Looking at the depiction of feasting and drinking in the Near East in between the Late Bronze Age and the Iron Age it can be noted that they represent the same gestures and the same way of drinking by using a bowl. In particular, it can be noted on the representation of feasting or banquet scenes from Zincirli[34] and other Neo-Hittite sites and from the Neo-Assyrian reliefs.

Because of this we might assume that the most common drinking vessel during the Iron Age in the Northern Levant was the bowl. The only vessels that can be compared with the ones represented in the depictions are the bowls grouped in the drinking bowls. Thus, we can suggest that the way of drinking did not change over time despite the introduction of new shapes and attributes.

Moving the focus on the introduction of Aegean shapes in the local pottery assemblages and particularly in the drinking assemblage we may notice that representation of feasting activities taking places in the Aegean depict people holding the drinking vessels by their stem.

As Landau rightly pointed out, people might have found new uses for the "Aegean" items linked with existing behavioural patterns.[35]

The functional analysis of pottery is useful in understanding any change in the way specific vessels were used within a society. These changes may be markers of social and behavioural changes in social practice within a site or a community. The analysis performed on the pottery material from Alalakh revealed that, despite the change in the organisation of the Near Eastern states witnessed during the Iron Age I, the local material culture, drinking and eating habits point towards a strong continuity in the local tradition in which new habits merged.

[33] Stockhammer 2012, p. 29; 2014, p. 140.

[34] Struble, Hermann 2009.

[35] Yasur-Landau 2005, p. 171.

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