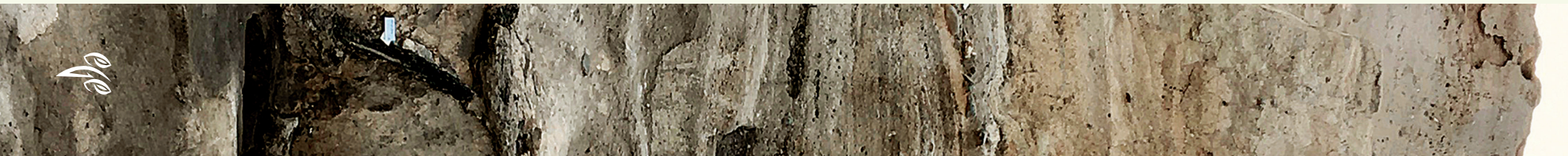
THE EARLY SETTLEMENT AT AŞIKLI HÖYÜK

Essays in Honor of Ufuk Esin

Mihriban Özbaşaran Güneş Duru Mary Stiner



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Edited by
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Aşıklı Höyük Kazı ve Araştırma Projesi

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Preface

Aşıklı Höyük, 26 years after it was first discovered, came under excavation by a large group of scholars from Istanbul University led by Prof. Ufuk Esin, then the chair of the Department of Prehistory. Results obtained from each field season contributed not only to our knowledge of the cultural geography of the region, but also to increasingly pluralistic explanations of Neolithization.

We began organizing a new program of investigation at the site in 2006, and we commenced new excavations in 2010 with the aim of pursuing a more detailed understanding of trends first identified by Prof. Esin and exploring more deeply what remained to be learned about Aşıklı. We attempted to understand the individual actions and "snapshots" from the daily life of the inhabitants with our revised approach and methodology. The new multi-disciplinary project supported by researchers and scholars from all over the world not only enriched the intellectual environment and helped to refine earlier interpretations, but also allowed us to put forward new research questions and approaches. The revival of the project has also allowed younger generations to be trained in many new aspects of archaeology.

Our recent investigations have focused mainly on the early habitation at Aşıklı. This work contributes to the ongoing discussions on the Neolithization of Central Anatolia, together with new data from the sites of Pınarbaşı and Boncuklu on the Konya Plain and Balıklı in Cappadocia. Though mentioned only briefly in the present volume, we have also carried out parallel projects in experimental archaeology, cultural heritage management, and public archaeology in connection with the archaeological research. Other publications will follow the present volume on the results gained from these sister projects.

Here it is our privilege to forward the first results of our work at Aşıklı in a volume dedicated to Prof. Esin. We hope it will further stimulate Neolithic research in the region. The year 2019 represents the 30th anniversary of the start of the excavations at Aşıklı. After three decades of fieldwork, we are proud to offer unprecedented information on the early inhabitants of Aşıklı. We owe much thanks to all the former and current members of the project. However, our deepest gratitude goes to esteemed scholar and mentor, Ufuk Esin, from whom we have inherited not only the opportunity to continue archaeological research at Aşıklı but also the many scientific approaches and ethical values she fostered. We present this book to her memory with respect, love, and longing.

The Beads from Aşıklı Höyük

Sera YELÖZER*

Introduction

The beads from Aşıklı Höyük were made from a variety of raw materials. These materials include stone, native copper and malachite, clay, mollusc shells, and animal bones and teeth. Waste from the manufacturing of bone and tooth beads occurs in multi-purpose open activity areas and middens, indicating that these artifacts were made on-site. Cylindrical bone beads, red deer canine pendants, bone imitations of red deer canines, and stone disc beads were in use since the early phases of occupation of Aşıklı (Levels 5 and 4). The bead repertoire in the subsequent phases (Levels 3 and 2; 8th millennium BC) expanded to include new types of raw materials such as rock and mineral types that were not used previously. This change coincides with the incorporation of beads in human burials. The results of this study were first presented in the MA thesis of the author (Yelözer 2016). The present paper summarizes evidence on the raw materials, colors and types of beads, and it discusses the implications of changes in ornamentation through time at Aşıklı Höyük.

Methods

Previous work on beads from Aşıklı Höyük was conducted by Roseleen Bains (2013), who studied the typology, raw materials, and manufacturing traces for 881 specimens. Additional information on bone and tooth specimens is provided by R. Christidou's technological study of the osseous artifacts from the site (Christidou 2010, 2011, 2013, 2014). The present research by the author explores aspects of the production, function, and distribution of the beads. The characteristics of a total of 1170 beads were examined. Descriptive statistics are used to compare attributes and temporal and spatial variation in the distribution of the beads.

The raw materials were classified into broad categories (Table 1). Rocks and minerals form a single category and include native copper and malachite. The use of native copper at Aşıklı Höyük does not attest to metallurgical activities (for a review, see Yener 2000: 22) and instead

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Table 1. Raw material categories of the beads from Aşıklı Höyük.

Raw Material	N	%
Stone	897	76.67
Animal bone and tooth	172	14.70
Native copper and malachite	65	5.56
Marine and freshwater shell	29	2.48
Clay	6	0.51
Unidentified	1	0.09
Total	**1170**	

seems to have been perceived, collected and used simply as a green colored mineral. For a more complete discussion of the copper beads of Aşıklı Höyük, see works by Esin (1993, 1995, 1999b) and Yalçın – Pernicka (1999). Stone materials were identified first by Bains (2013). During the present study, additional information was provided on stone, bone, tooth and mollusc shell materials by C. Kuzucuoğlu, M. C. Stiner, N. Munro, and H. Buitenhuis, the geologist and faunal analysts working at the site. The raw material of two beads, recorded in the past as "faience", is not certain and thus the material is followed by a question mark. Faience is a composite material that probably was not utilized in the Neolithic Period. Perhaps the two objects in question are highly polished clay beads (Bains 2013). Stone and mineral colors were determined by visual examination. Color reflects foremost the variation in raw materials used, and thus basic color divisions are employed in the presentation below. In two instances, beads were intentionally colored with a second material.

To conform to prior bead studies, the types were defined by the morphology of the artifacts. The terminology is adapted from the nomenclature and classification proposed by Horace Beck (1928) and the previous study of the Aşıklı beads by Bains (2013). In addition to overall form, the beads were categorized according to the shape of the perforation. A combination of these properties proved to be the most effective means for classifying the beads from Aşıklı Höyük. Except for three specimens, the beads possess either one central perforation or a longitudinal perforation drilled from both ends. Pendants are distinguished by their off-centre perforations. As will be discussed below, specimens made from vertebrate skeletal materials were mostly "natural" beads, and their manufacture shows affinities to other bone industries in the site (Christidou, personal communication, May 2018). Stone and clay beads were entirely shaped by humans.

Bead classification

As outlined by Bar-Yosef Mayer (2013a), typological classification of beads takes into consideration the size, proportions, overall shape, and cross-sections of the artifacts. The forms and dimensions of the beads may be linked to the technology of manufacture, raw material constraints, or the use of the objects. At Aşıklı Höyük, disc-shaped and cylindrical beads are the most common types. The discs are round beads with perforations through their centre. Subtypes include flat discs and oval/globular discs. Cylindrical beads are centrally drilled specimens, with a length that is at least two times greater than the diameter. If the diameter is equal to or greater than the length of the specimen, the specimen is classified as a tubular bead. The third largest group consists of pendants, distinguished by their off-centre perforations. Among the pendants from Aşıklı Höyük are red deer canines, bone imitations of red deer canines, and teardrop-shaped stone pendants. Other common types are barrel beads with rounded middle sections that are wider than the diameter of their ends, oval/elliptical beads and oval beads with

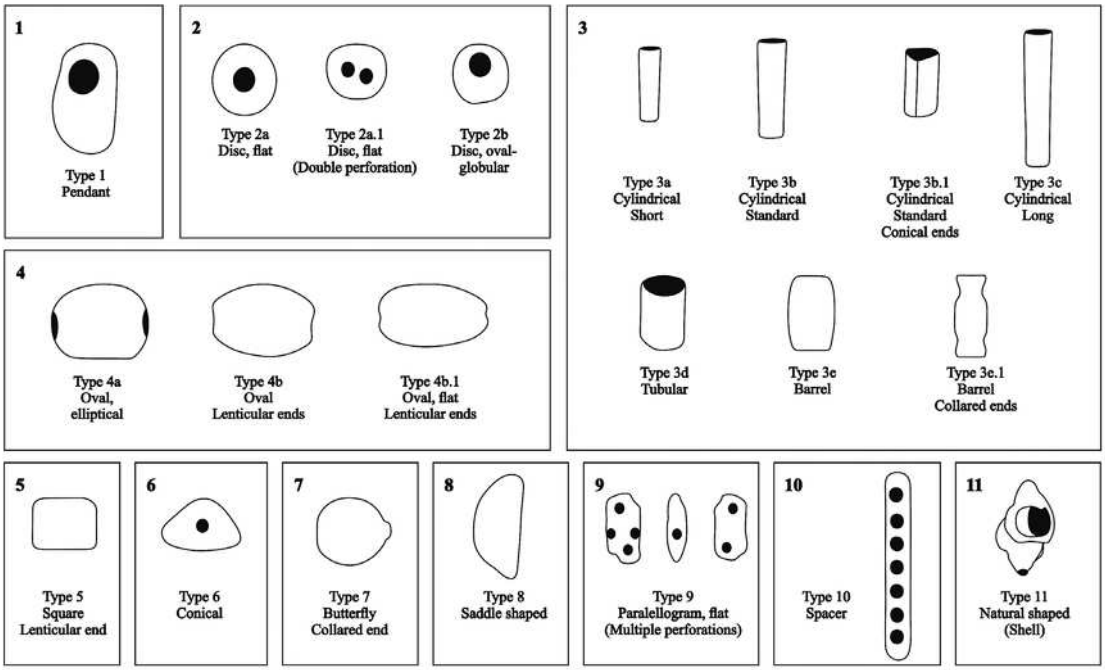

Figure 1. Typology of the beads from Aşıklı Höyük.

lenticular ends. From a typological point of view, the oval specimens with lenticular ends from Aşıklı could be "butterfly" beads. Published descriptions of butterfly and lenticular beads are not consistent. Recently, Alarashi (2016: 494) described specifically the morphological features of the butterfly type: (a) flat, large form; (b) symmetrical ends; (c) lenticular or diamond shaped cross-sections; and, on some examples, (d) collared ends. Based on this description, the flat and/or oval beads with lenticular sections from Aşıklı belong to this type. Other, rare types are two square beads with lenticular ends, a conical specimen, butterfly, saddle-shaped and parallelogram beads, and a spacer (Figure 1).

A distinction could be made between the natural, simpler forms utilized as beads with minor modifications as opposed to the more complex forms determined entirely by humans. Shell beads were perforated but otherwise remained in their natural state (cf. natural shaped beads, Bains 2012, 2013). The same observation applies to the upper canines of red deer that were pierced at the root, and the naturally hollow bone cylinders made by sectioning hare and fox metapodials and (rarely) avian long bones. Imitations of the red deer canines were made from the cortical bone of large mammals and occasionally from stones. The disc, cylindrical, barrel, oval, square, butterfly and saddle shaped beads were manufactured from rocks and minerals and represent completely human-made forms. The latter types were made according to a preconceived arbitrary design. It appears that bones, teeth and shells associate with a narrow range of bead types, with few exceptions (e.g., carved imitations of canines). They differ significantly from the stone and clay beads (Table 2). For this reason, the beads are examined by raw material category in the sections that follow.

Table 2. Bead types by general raw material categories.

	Stone	Bone/tooth	Shell	Clay
Pendant	4	79	-	-
Disc, flat	772	4	-	4
Disc, flat (double perforation)	1	-	-	-
Disc, oval/globular	54	-	-	-
Cylindrical	67	84	-	-
Tubular	-	4	-	-
Barrel	10	-	-	-
Barrel, collared ends	2	-	-	-
Oval, elliptical	6	-	-	2
Oval, lenticular ends	23	-	-	-
Oval/flat, lenticular ends	13	-	-	-
Square, lenticular ends	2	-	-	-
Conical	1	-	-	-
Butterfly, collared ends	1	-	-	-
Saddle-shaped	1	-	-	-
Parallelogram	1	-	-	-
Spacer	-	1	-	-
Natural	-	-	29	-

Stone beads

Stone beads (n=897) comprise 77% of the overall assemblage. The stone raw materials are hard and soft limestone, steatite, soft saccharoidal and impure marble, carnelian, serpentine and serpentinite, quartz, jasper, agate, chloride, meerschaum, granite, tufa, and turquoise. Most of the stone beads were produced from softer stones. These soft materials are steatite (Mohs scale 2-3), limestone (Mohs scale 2-4), and marble (Mohs scale 3-5) (Table 3), which were collected near the vicinity of Aşıklı Höyük. Harder stones (Mohs scale 7) are comparably rare in the bead assemblage and include carnelian, quartz, jasper, and agate.

Table 3. Number and percentage distribution of stone bead raw materials.

Stone type	N	%
Steatite	417	46.49
Limestone	282	31.44
Marble	26	2.90
Carnelian	16	1.78
Jasper	6	0.67
Serpentinite	5	0.33
Quartz	4	0.45
Meerschaum	3	0.33
Serpentine	3	0.56
Chloride	2	0.22
Granite	2	0.22
Faience (?)	2	0.22
Turquoise	1	0.11
Tufa	1	0.11
Unidentified	127	14.16
Total	**897**	

In terms of bead types, the majority are limestone and steatite flat discs. Oval/globular discs represent the second most common type, followed by oval beads with lenticular ends, oval/elliptical, cylindrical, and barrel-shaped beads, and pendants (Table 4). Dominant bead colors are green and red, reflecting the dominance of limestone and steatite raw materials. The third largest color group is white/beige, again related to the common stone materials, limestone and marble. Other stone bead colors include brown, blue and black. Intentional coloring of beads is rare,

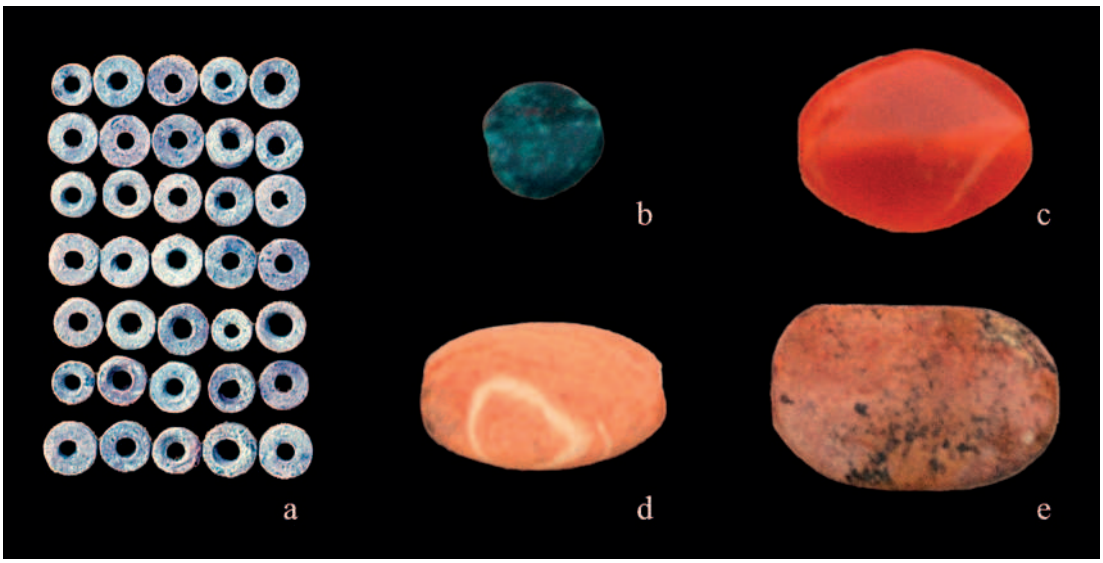

Figure 2. Examples of stone beads from Aşıklı Höyük: (a) Disc-shaped beads made from steatite; (b) oval bead with lenticular ends, made from an unknown stone; (c) oval bead with lenticular ends, made from carnelian; (d) oval bead with lenticular ends, made from limestone; (e) oval/elliptical bead with lenticular ends, made from granite (Aşıklı Höyük Project Archive).

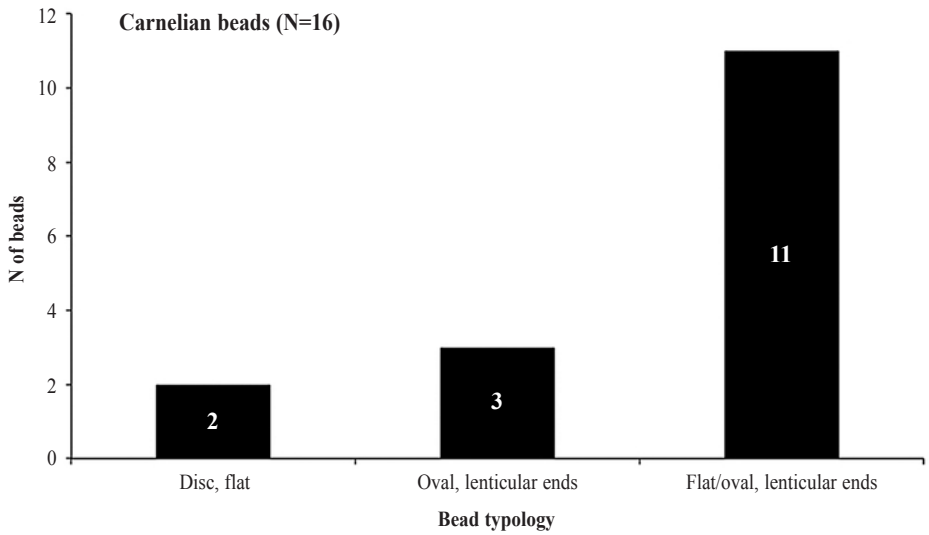

Figure 3. Typological distribution of carnelian beads.

represented by only two examples from the site; one is an oval-lenticular limestone bead painted with red ochre (Figure 2).

The stone beads from the earliest occupation phases (Levels 5 and 4) are three disc-shaped specimens made from limestone. The presence of limestone in the bead assemblages increases dramatically during the 8th millennium BC, firstly in Level 2D and again in Level 2A-C. Towards the end of the 9th millennium BC, around the time of the transition from Level 4 to Level 3, new raw materials—marble and serpentine—were added to the stone bead repertoire. Steatite also became an important material for the first time during the Level 3 occupation, and its use increased dramatically during the Level 2A-C occupations. Throughout Level 2, new stone and mineral types began to be used. These are jasper (Level 2J), turquoise (Level 2F-H), serpentinite,

Table 4. Number of stone beads by type and raw material.

	Steatite	Limestone	Marble	Carnelian	Meerschaum	Jasper	Chloride	Granite	Quartz	Serpentine	Serpentinite	Turquoise	Tufa
Pendant	3	-	-	-	-	-	-	-	-	-	1	-	-
Disc, flat	357	277	9	2	-	1	2	-	-	2	-	-	-
Disc, flat (double perforation)	-	-	-	-	-	-	-	1	-	-	-	-	-
Disc, oval/globular	44	2	1	-	1	1	-	-	-	-	3	-	-
Cylindrical	-	-	6	-	-	-	-	-	-	-	-	-	-
Barrel	2	-	5	-	-	-	-	-	-	-	-	1	-
Barrel, collared ends	-	-	-	-	-	-	-	-	-	-	-	-	-
Oval, elliptical	3	-	-	-	-	-	-	1	-	-	-	-	-
Oval, lenticular ends	7	-	5	3	-	3	-	-	2	1	1	-	-
Oval/flat, lenticular ends	-	-	-	11	-	-	-	-	1	-	-	-	-
Square, lenticular ends	1	-	-	-	-	-	-	-	-	-	-	-	1
Conical	-	-	-	-	-	-	-	-	1	-	-	-	-
Butterfly, collared ends	-	-	-	-	1	-	-	-	-	-	-	-	-
Saddle-shaped	-	-	-	-	1	-	-	-	-	-	-	-	-
Parallelogram	-	-	-	-	-	1	-	-	-	-	-	-	-

meerschaum (Level 2D), carnelian, quartz, chloride, granite, and tufa (Level 2A-C). A relation is observed between the increased variety of bead raw materials in Levels 2D and 2A-C and bead types. Certain materials were preferred for the production of specific forms. Carnelian (n=16) correlates with just a few bead types, and one form was highly preferred (Figure 3). Other rare forms made from novel raw materials are a conical bead of quartz, a granite disc-shaped bead with two perforations, a collared butterfly bead made from meerschaum, and a square-shaped bead with lenticular ends made from tufa.

Evidence for the methods of stone bead production comes from observations of the manufacturing marks on a total of 26 finished specimens (Bains 2013). As a rule, marks from the first steps of the manufacturing process are obscured as the bead is more thoroughly shaped. The majority (>70%) of the analyzed beads, especially the disc-shaped ones, possess rounded edges that suggest final polishing *en masse*. The holes were drilled mostly by mechanical means (85%) or with two hands, and drilling occurred from both sides (biconical perforation) (Bains 2013: 41-45). A broken flat parallelogram jasper bead with multiple perforations, found on the floor of a rectangular *kerpiç* building in Level 2J, presents four perforations on the rear side, another on a lateral side, and two on the front side. The rear and lateral holes are unfinished. This object has no typological parallels in the site and may represent attempts made by an individual unfamiliar with the manufacturing process.

Beads made from animal bones and teeth

Animal bones and teeth (n=172) represent the second most numerous raw material category, but they account for only about 15% of the entire collection. The great majority of the bone beads were made from the metacarpals and metatarsals of hare (*Lepus capensis*) and fox (*Vulpes vulpes*). The naturally straight hollow shafts of these bones were exploited to produce cylindrical and tubular beads (n=88). On average, three segments of similar lengths (ca. 9-14 mm) were extracted from each shaft by transverse grooving and snapping. There is evidence that the desired number and lengths of cylinders were first incised on the bone with a stone tool (girdling); then the bone was broken along the grooves, and the articular ends discarded. These beads were made rapidly. The grooves were often shallow. While the entire circumference of the shaft was grooved in most cases, others were only bifacially cut before snapping. The cylinders were used without further modification. Only a few specimens show intentional, superficial smoothing of the fracture surface by grinding. In some cases, a portion of shaft was grooved but not snapped, and the item was used as a single bead. Two other similar specimens were grooved into three cylinders, which are shorter than usual (Figures 4 and 5). In this case, the grooves

Figure 4. Cylindrical beads with grooving marks (Christidou 2011).

Figure 5. Cylindrical bead with grooving marks that could be surface decoration (Christidou 2011).

Figure 6. An ensemble of cylindrical beads and red deer canine imitation pendants (Aşıklı Höyük Project Archive).

could be ornamental, although they were roughly shaped. The lengths commonly chosen would offer flexibility for the beads to be used in ensembles. Cylindrical beads were probably used in quantity for beadwork, as suggested by an ensemble of 20 specimens from Level 4, which also included three imitations of pierced red deer canines (Figure 6), and another ensemble from the same level that contained 14 specimens.

Four flat, disc-shaped beads were also made from mammal bone. Their anatomical origin and manufacture have not been studied. Fragments of the shaft of large mammal bones and in one case of a smaller (sheep-sized) mammal were used to manufacture copies, both realistic and stylized, of red deer canine pendants. The more schematic imitations have a roughly teardrop form. Contrary to the cylindrical beads, the canine shapes were shaped from thick compact bone by a labor-intensive process of grinding and scraping. The profiles of the imitation canines are rounded on the most carefully worked specimens. Otherwise, they appear angular, with multiple facets. The holes were opened manually from both sides. Similar holes were made on the roots of red deer canines. Contrary to the imitations, the real teeth were used without further modification of their form besides a perforation on the root.

Figure 7. Heavily used genuine red deer canine pendant (Aşıklı Höyük Project Archive).

Real and imitation canines that had been broken at the perforation were repaired and reused; typically, a second hole was opened. One specimen exhibits heavy use polish and smoothing

Figure 8. Red deer canine pendants from the bead group found buried with Sk.35. Note the re-perforations on three specimens on the right (Aşıklı Höyük Project Archive).

on the broken end, and two lateral notches are present immediately below this end. This pattern suggests that the broken tooth was sewn onto fabric or hide (Figure 7; Christidou 2010). Mending and reuse was also observed on red deer canines and copper beads found together in an adult female burial in Level 2A-C (Figure 8; Esin 1995: 65, 1999b: 28). Analysis of this bead group is ongoing.

Two incisors of ruminants, an ovicaprid and a deer, are also worked. Both come from the floor of an extra-mural activity area in Level 5. The ovicaprid specimen shows scraping of the root prior to biconical perforation, which was opened manually near the apex. The apex of the other specimen was sawn off (Christidou 2014). It is not clear whether this action took place while the tooth was still in the jaw (cf. Poplin 1983), but the root surface was scraped before it was grooved. The specimen presents no traces of perforation and use; it is probably unfinished.

Red deer are uncommon in the faunal assemblages from Aşıklı Höyük, averaging around 2% or less of all species in each level. Opportunities to obtain upper canines would therefore have been rare. Hare and fox are somewhat more common throughout the history of occupation (Stiner et al. 2014, and this volume). The discarded epiphyses of hare and fox metapodials are found in extra-mural activity areas and middens, and their presence confirms that the

Table 5. NISP for real red deer canines found in each major level at Aşıklı Höyük.

	% deer (all species) in faunas	unworked red deer canine NISP	unworked red deer incisor NISP	worked red deer canines NISP
Level 2	2%	0	1	52*
Level 3 (small sample)	2%	0	0	0
Level 4	3%	0	270	3
Level 5	2%	0	54	2

* From the bead group found with Sk.35. These are the only worked red deer canines so far found from Level 2. Analysis of this bead group are ongoing, however, preliminary observations suggest that at least the majority are red deer canines as opposed to imitations made from mammal bone.

cylindrical beads were made on-site during all periods. Red deer canines also appear throughout the stratigraphic sequence. Whereas unworked red deer incisors are found in the faunas from Levels 5 and 4, the only canines found in these layers were worked. Few if any red deer incisors or canines have not been recovered in the later levels, but some worked canines do occur there (Table 5). Interestingly, the red deer canine pendants found with the aforementioned female burial are the sole examples of worked red deer canines in Level 2 that have been found so far.

Mollusc shell beads

Shell beads (n=29) represent a small fraction (2.5%) of the overall bead assemblage. Most or all of them are extant species, mostly marine types. The shells are dominated by gastropods, especially *Conus*, *Columbella* and *Nassarius* (21%, 21% and 17% of shells respectively), and they first appear in the early levels of the Aşıklı sequence. Other gastropods are *Columbella rustica*, *Nassarius gibbosulus*, *Conus mediterraneus*, *Cerithicum vulgare*, *Murex* sp., *Cypraea* sp., and *Theodoxus* sp. (a freshwater species), along with one bivalve (*Cerastoderma edule*) and one scaphopod (*Episiphon filum*) (Table 6). Another specimen identified as fossil shell (Cerithiopsiae; Bar-Yosef Mayer, personal communication, Aşıklı Höyük, August 2015) either functioned as an ornament, though only natural holes occur on its surface, or it was kept as a personal item[1]. Shell quantities do not vary significantly between levels, but new taxa appear as single examples over the occupation sequence (Table 7).

Table 6. Taxonomic distribution of marine shell beads.

Taxa/Species	N	%
Bivalves		
Cerastoderma edule	1	3.45
Gastropods		
Columbella rustica	6	20.69
Nassarius gibbosulus	6	20.69
Conus mediterraneus	5	17.24
Cerithicum vulgare	1	3.45
Murex sp.	1	3.45
Cypraea sp.	1	3.45
Theodoxus sp.	1	3.45
Cerithiopsiae	1	3.45
Scaphopods		
cf. *Episiphon filum*	1	3.45
Unidentified taxa	5	17.24
Total	**29**	

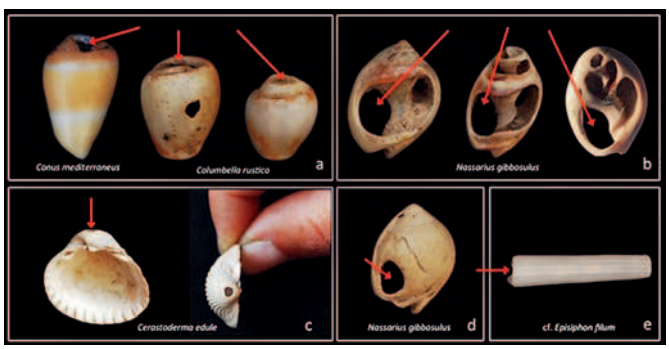

Figure 9.
Suggested production techniques for mollusc shell beads.

[1] Fossil shells from the Taurus Mountains have been found at the Pottery Neolithic site of Çatalhöyük. Bar-Yosef Mayer et al. (2010) have suggested that fossil hunting and the imports of marine mollusk shells indicate that Çatalhöyük was involved in an exchange network spanning much of the Near East. Non-perforated shells have been interpreted as exchange items, 'gifts' or 'souvenirs' (Bains et al. 2013: 358; Bar-Yosef Mayer 2013b: 332; Bar-Yosef Mayer et al. 2010: 387).

Table 7. Diachronic distribution of marine shell bead taxa.

Level/ Phase	*Columbella rustica* (N=6)	*Nassarius gibbosulus* (N=6)	*Conus mediterraneus* (N=5)	*Theodoxus* sp. (N=1)	*Cerasto-derma edule* (N=1)	*Cypraea* sp. (N=1)	Cerithiopsiae (N=1)	cf. *Episiphon filum* (N=1)	*Cerithicum vulgare* (N=1)	*Murex* sp. (N=1)
2A-C	3	3	1	-	-	-	-	-	1	1
2D	-	-	-	-	-	-	-	-	-	-
2E	-	-	1	-	-	-	-	-	-	-
2F-H	-	-	1	-	-	-	-	-	-	-
2I-J	-	1	-	-	-	1	1	1	-	-
2J/3A	-	-	-	-	-	-	-	-	-	-
3A	-	-	-	-	-	-	-	-	-	-
3B	-	-	-	-	-	-	-	-	-	-
3C	-	-	-	-	-	-	-	-	-	-
3D	-	-	-	-	-	-	-	-	-	-
3E	1	-	-	-	1	-	-	-	-	-
3E/4A	-	-	-	-	-	-	-	-	-	-
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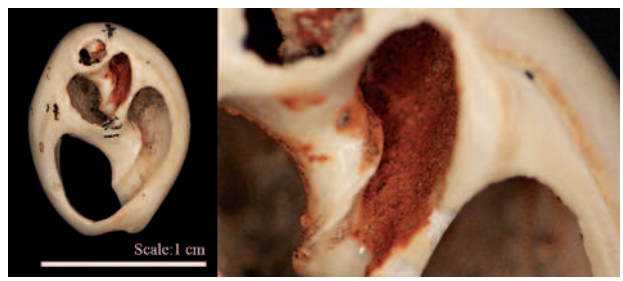

Figure 10. *Nassarius gibbosulus* bead with colored interior surface.

Manufacturing marks were identified macroscopically, following Francis (1982: 713). The marks are mainly traces of perforation by gouging (Figure 9a) and percussion methods (Figure 9c-d). Sawing and grinding were applied on *Nassarius gibbosulus* and *Episiphon filum* specimens (Figure 9b-e). The interior of one *Nassarius gibbosulus* bead retains red ochre pigment. This shell was found on the floor of Building 16, in Level 2F-H (Figure 10). Ochre painting and heating to carbonization were two methods used to color shells red and black, respectively, at the contemporaneous site of Pınarbaşı in the Konya Plain (Baysal 2013: 6).

Clay beads

A small number of clay beads (n=6) were found at Aşıklı Höyük. They comprise only 0.5% of the overall assemblage. The clay beads are oval/elliptical or flat disc shapes. Clay beads appear in Level 2D and upwards, and date to the mid-8th millennium BC. Although raw clay was extensively exploited in architecture at Aşıklı, it was largely ignored in bead production. Similar trends have been observed in the 9th millennium sites of Pınarbaşı and Boncuklu Höyük on the Konya Plain; Pınarbaşı yielded a single clay bead, and Boncuklu yielded nine clay beads (Baysal 2013: 6). During the Pottery Neolithic at Çatalhöyük, clay was regularly used as a building material

and in the production of pottery and other artifacts such as tokens, figurines and stamp seals. Clay beads and pendants were also made, but they are rare compared to their stone and bone counterparts (Bains et al. 2013: 346-355).

Discussion

This section summarizes the trends in ornamentation at Aşıklı Höyük, and it explores the patterns of shared materials and techniques that pertain to regional interaction. Also discussed is the practice of imitating natural forms in other materials, as in the case of red deer canines, and how ornaments may have served as metaphors or symbols.

Continuity and change in ornamentation

Figure 11 summarizes relevant data on the chronological and spatial distribution of the beads in Aşıklı Höyük. The mid-9th millennium BC beads from Levels 5 and 4 were recovered mainly from open areas and middens, indicating that these items were lost or discarded. Beads are absent from the burials of this period. Cylindrical beads made from bone and pendants made from red deer canines and carved canine imitations predominate. Beads made from Mediterranean shells and flat discs of limestone also occur.

While shell beads occur in very low numbers in the early and late assemblages alike, limestone beads increase dramatically in the 8th millennium BC. During the same millennium, the quantities of steatite beads and green barrel-shaped beads also increase. Cylindrical bone beads continue into the 8th millennium, but they are no longer prevalent; they were probably replaced by the stone disc-shaped beads, which are one of the most standard elements of ornamentation in Neolithic Anatolia (Baysal 2012). The 8th millennium at Aşıklı (especially Level 2A-C) is marked by an increase in the number of beads in comparison to the 9th millennium BC (Figure 12), variability in bead types and materials, and incorporation of hard stones in the raw material repertoire (see Figure 11). In order to assure that differences in samples sizes coming from different settlement phases are considered when suggesting temporal patterns, the number of bead types and raw materials were divided by the total number of beads found in a given settlement phase (a.k.a. the variability index, see Bains 2012: 81). The variability ratio (about 51%) for Level 2A-C confirms that bead types and raw materials diversified dramatically during this period (Table 8). Changes in the absolute number of beads is more difficult to evaluate, given that the absolute size of the community also increased greatly with time. Thus, an increase in the number of beads found in the later periods may not mean that more beads were used in the *per capita* sense. In order to test the sample size effects and obtain a rough estimate of ornament use with time, a comparison was made between the available faunal data from Stiner et al. (2014) that reflects an important dimension of the accumulation of human refuse through time, and the number of beads per level and phase (Figure 13). Although the absolute number of beads increased and diversified in the later periods, the present data do not indicate a significant increase in ornament use per person.

The use of beads in funerary contexts marks a major change in mortuary behaviour during the 8th millennium. In fact, most of the beads (92%) of this period come from human burials (Figure 14). The depositional patterns began to change in Level 2F-H with two adorned burials, an infant and a child. In Level 2D, adults also were buried with ornaments. Adornment of the

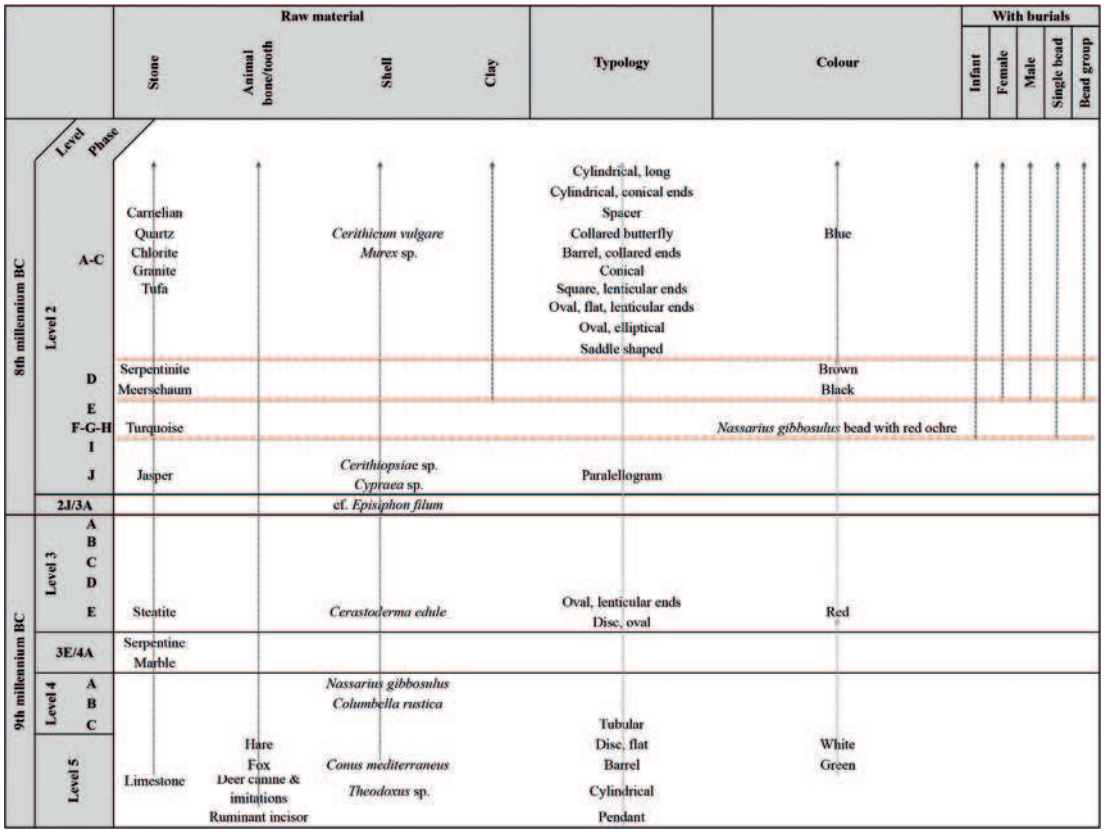

Figure 11. Continuity and change in bead types, colors, materials, and contexts.

Table 8. Diachronic variability ratio of beads according to type and raw material.

Level/Phase	N of beads	Raw material	Variability %	Type	Variability %
2A-C	927	18	51.5	18	51.5
2D	42	9	4.6	9	4.6
2E	2	2	1	2	1
2F-H	10	5	2	5	2
2I	1	1	1	1	1
2J	18	4	4.5	7	2.5
2J/3A	3	2	6.5	3	4.3
3A	2	1	3	2	1
3B	2	1	2	2	1
3C	2	2	1	2	1
3D	1	1	1	1	1
3E	58	4	14.5	6	9.6
3E/4A	3	3	1	2	1
4A	10	3	3.3	6	1
4B	2	2	1	2	1
4C	46	3	15.3	7	6.5
5	20	3	6.6	6	3.3

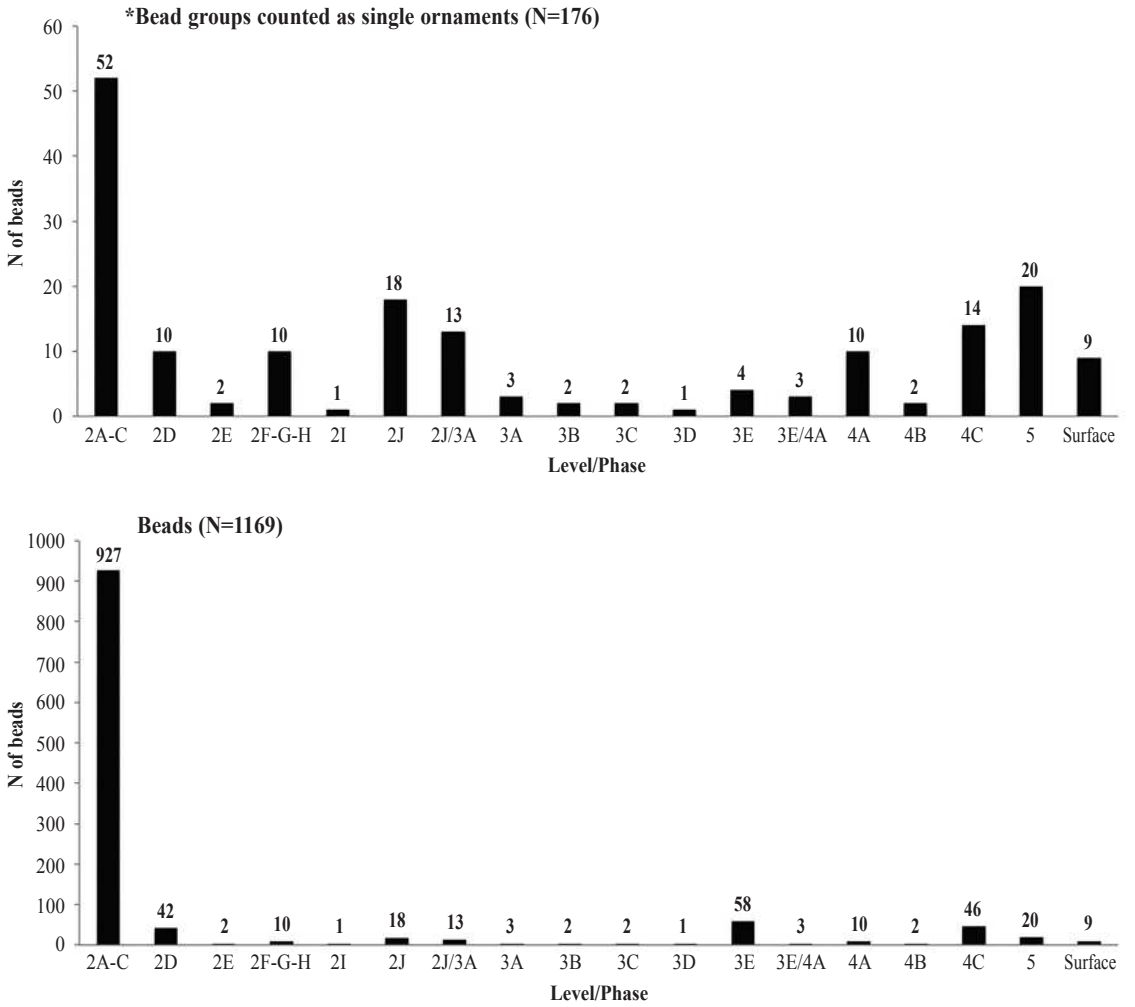

Figure 12. Diachronic distribution of the number of beads and bead groups.

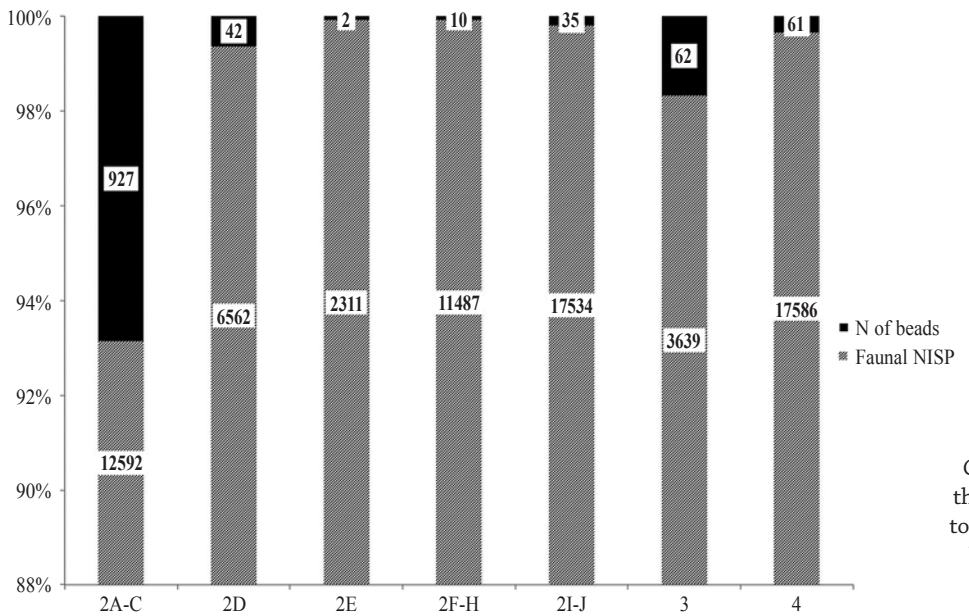

Figure 13. Comparison of the faunal NISP to the total N of beads (Level 5 not included).

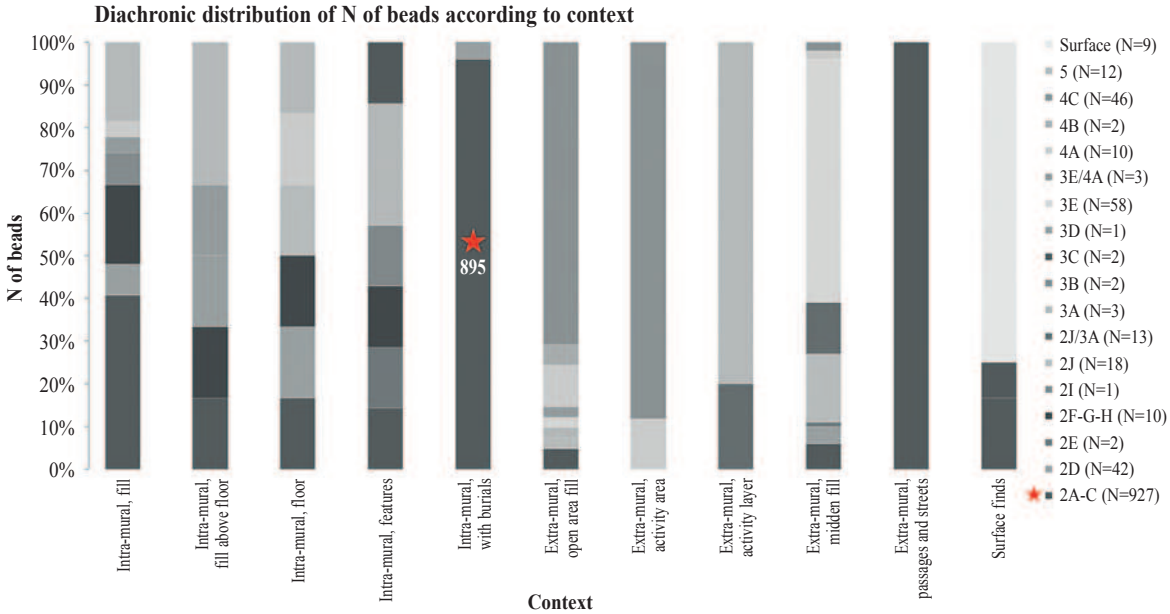

Figure 14. Diachronic distribution of the number of beads by context.

deceased became more complex in terms of bead numbers and associations in Level 2A-C. While the number of burials available for comparison is limited (n=92 so far, for all periods), it is interesting that the latter development in Level 2A-C co-occurs with the diversification of bead types and materials.

Throughout the occupation sequence of Aşıklı Höyük, its inhabitants buried deceased individuals of both sexes and all age groups (Erdal, this volume) under the floors of buildings. The contents of 89 burials were evaluated for this study. As mentioned above, beads were found in burials during the later phases of occupation but not in the early ones. Of the later burials, 31% contained ornaments (Table 9). The number of burials is relatively small when compared to the number of buildings and the size of the 8th millennium settlement, and the number of individuals buried with ornaments (or other objects) is even smaller. Few burials with ornaments, the low number of burials relative to architectural features, and the biased adult sex ratio identified by Erdal (this volume) raise questions about social identities and funerary rituals. If only certain individuals were buried under house floors, would adornment and rituals be related to particular choices made by the mourners? And how might this practice have changed in the later period? Some 8th millennium individuals were buried with a single bead, while others had pairs or larger ensembles of beads made from a variety of materials. Did ornamentation vary according to the social roles and identities of the deceased?

Beads in burial contexts are mainly made from stone, and they varied in morphology, raw material and color. Their numbers and associations also varied; some occur as single specimens, others in pairs or larger ensembles (Table 10). An infant and a child (Sk.135 and Sk.12, respectively) were adorned with single green disc beads on their necks; these are the earliest individuals buried with beads, in Level 2F-H. A three and one-half year old child (Sk.124) in Level 2A-C was buried with 62 green, 33 red and 10 beige disc beads made from steatite and limestone, 7 green oval beads of steatite, and two disc beads of bone. This is the only child buried with a bead ensemble. The other infants and children were buried with a single bead or a pair of beads.

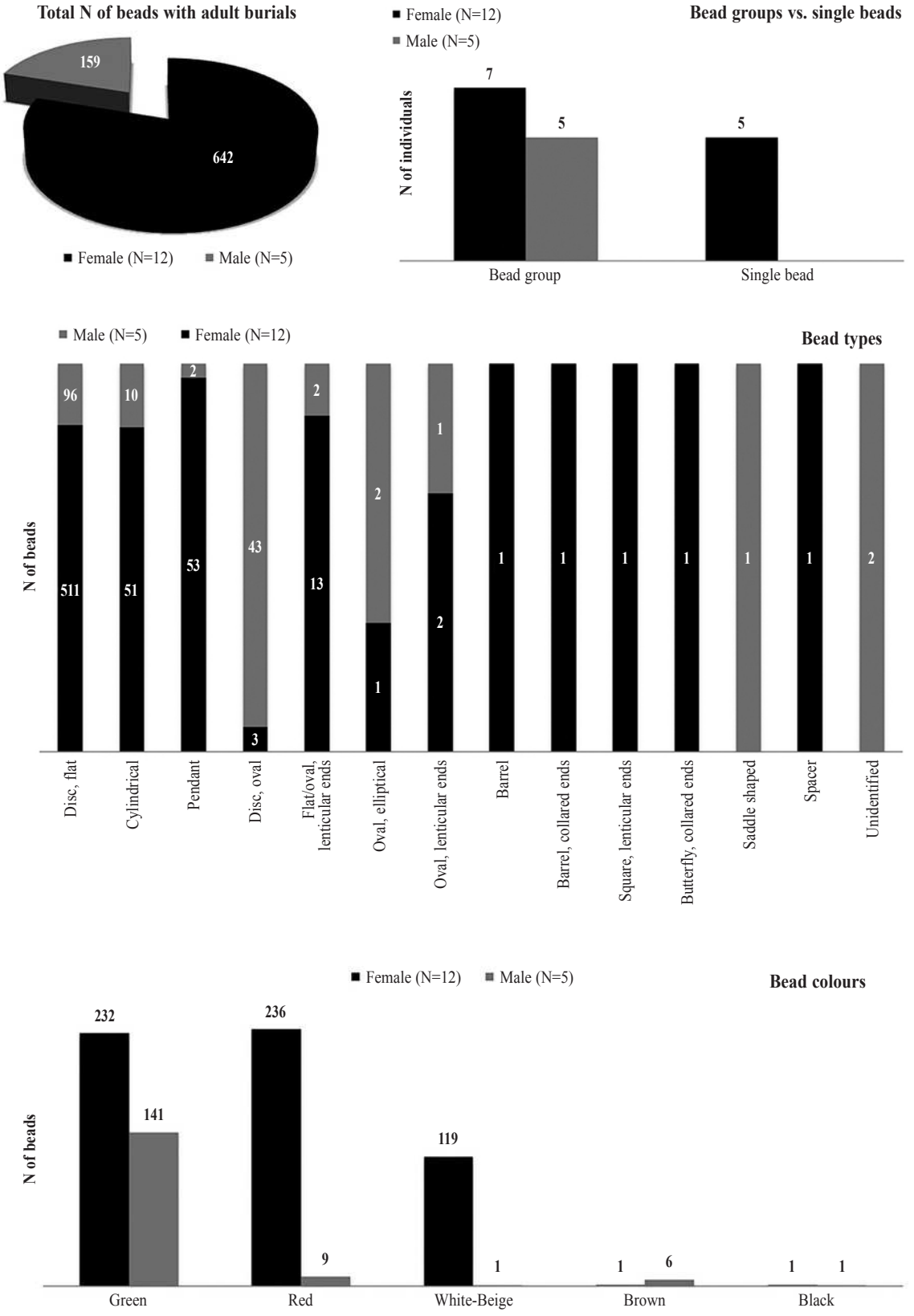

Figure 15. Distribution of bead numbers, colors and types by sex in the adult burials.

Table 9. Diachronic distribution of adorned human burials, and the total number of burials included in this study.

Level/Phase	N (Bead groups=16; single beads= 9)	N of burials with beads/bead groups	Total N of burials
2A-C	890	20	61
2D	34	2	4
2E	-	-	-
2F-H	2	2	8
2I	-	-	3
2J	-	-	1
2J/3A	-	-	-
3A	-	-	-
3B	-	-	1
3C	-	-	3
3D	-	-	1
3E	-	-	-
3E/4A	-	-	5
4A	-	-	-
4B	-	-	2
4C	-	-	-
5	-	-	-
Total	**926**	**24**	**89**

Table 10. Comparison of the total number of human burials to the burials with single beads, bead pairs and bead groups, by human age categories.

Age category	Single bead (N of burials)	Bead pair (N of burials)	Bead group (N of burials)	Total N of burials
Neonate	1	-	-	3
Infant (birth-2,5)	2	1	-	14
Child (2,5-18)	1	1	1	17
Adult (18-45)	4	-	10	39
Old adult (>45)	1	-	2	10
Unknown	-	-	1	6

What further distinguishes the child from the rest of the adorned children burials is the presence of red ochre around his/her mouth, and possible intentional head deformation evidenced by his/her dolichocephalic skull; he/she had also suffered from an infection, which was not the cause of death (Özbek 2011: 4-5). In Level 2D, adults were buried with bead ornaments. An adult and a senile adult male (Sk.109 and Sk.106, respectively) who were buried in pits under the floor of a rectangular *kerpiç* building offer the first examples of this practice. In the subsequent phase, an adult female (Sk.8) was also buried in the same building. While the female had a green barrel bead, the males were accompanied by bead groups. Another female (Sk.27) was buried with a green copper bead. This was one of the individuals buried in a pit under the floor of another rectangular *kerpiç* building in the subsequent Level 2A-C.

Table 11. Types, colors and raw materials of single beads found with female and child skeletons.

Level/Phase	Type	Color	Raw material	Sex	Age category
2A-C	Pendant	Green	Steatite	Female	Senile adult
2A-C	Disc, flat	Green	Steatite	Female	Adult
2A-C	Disc, oval	Green	Steatite	-	Infant
2A-C	Oval/elliptical	Green	Native copper	Female	Adult
2A-C	Oval, lenticular	Green	Quartz	Female	Adult
2A-C	Conical	White-grey	Quartz	-	Infant
2A-C	Barrel	Green	Steatite	Female	Adult
2F-H	Disc, flat	Green	Serpentine	-	Infant
2F-H	Disc, flat	Green	Steatite	-	Child

The available data show that adornment of the dead may have started with young individuals in Level 2F-H and expanded to adults in Level 2-D and 2A-C. The adult burials, both males and females, yielded bead groups that consisted of more than 2 beads. Some of the female burials contained pairs or single beads instead of bead groups, a pattern that also characterizes the infant and child burials. In terms of bead types, pendants occur mostly with females. Red and green colors prevail in the beads that accompany adult males and females (Figure 15). However, green dominates in the single and bead pairs that accompany adult females and children (Table 11). The spatial distribution of the adorned burials did not reveal patterning that could be related to building groups and neighbourhoods, in the sense of different households or other social groups.

The choice of green beads deposited as single items or single pairs in adult female and child burials indicates a very strong correlation between these two social groups. The association of green color with females and children could be further explored through cross-cultural comparisons. The Bedouins of the Negev Desert in Israel, for example, wash new-borns with water to which green beads are added (Popper-Giveon et al. 2014). It is believed that this will protect the purity and health of the children. Bar-Yosef Mayer and Porat (2008) observed that green beads increased dramatically in the Levant with the onset of agriculture. These objects could be symbols of nature and fertility.

Shared materials and techniques, and their relevance to regional interaction

The increased variability in bead materials and types during the latest occupation phases at Aşıklı Höyük includes the appearance of biconically drilled carnelian oval beads with lenticular ends. Beads with similar morphological and technological characteristics are known from several Neolithic sites of Southwest Asia, namely Çatalhöyük, Çayönü, Mezraa Teleilat, Halula, Abu Hureyra, Akarçay Tepe, Ain Ghazal, Beidha, and Tatlısu/Akanthou (compare Alarashi 2014, 2016; Bains 2012: 74; Coşkunsu 2008: 32; Erim-Özdoğan 2007, 2011; Groman-Yaroslavski – Bar-Yosef Mayer 2015; Moore – Molleson 2000: 287; Vasic et al. 2014: 211; and Şevketoğlu, personal communication, Cyprus, April 2018). The beads for these sites are similar to the carnelian oval beads with lenticular ends found at Aşıklı Höyük (see Figure 16). As discussed above, the recent detailed description of butterfly beads by Alarashi (2016) allows one to suggest that the Aşıklı Höyük specimens belong to this type.

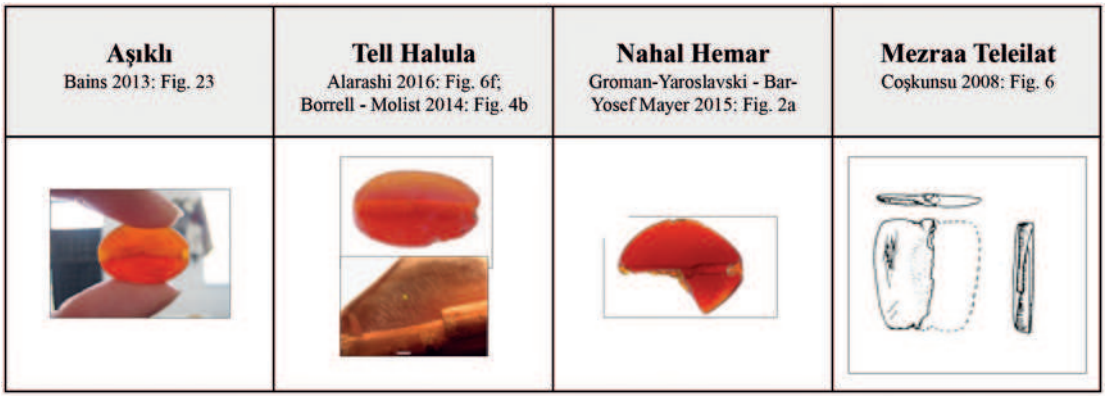

Figure 16. Biconically drilled beads from Aşıklı Höyük (Central Anatolia), Tell Halula (Syria), Nahal Hemar Cave (Southern Levant), and Mezraa Teleilat (Southeastern Anatolia).

Borrell and Molist (2014) have suggested that non-local materials, such as the carnelian found at Halula in Syria, indicate interactions between geographically distant communities. According to Groman-Yaroslavski and Bar-Yosef Mayer (2015), the manufacturing sequence of the carnelian beads from the PPNB cave site of Nahal Hemar in the southern Levant includes heating, knapping, polishing, and drilling techniques. Similar bead types and technologies found in other distant regions suggest exchange of raw materials, finished products, and ideas or know-how (Bar-Yosef Mayer 2013a: 139).

A similar case can be made for biconically drilled butterfly beads. In Late Neolithic Kumartepe and PPNB Mezraa Teleilat, beads made from hard stones have been interpreted as examples of specialized production (Calley – Grace 1988; Coşkunsu 2008: 35). The Nahal Hemar specimens were perhaps imported through exchange and interaction with PPNB communities of the Middle Euphrates Valley (Groman-Yaroslavski – Bar-Yosef Mayer 2015: 87). The biconically drilled carnelian butterfly beads of Aşıklı Höyük either indicate skilled local production or importation from another area. No stone bead manufacturing areas or typical waste products have been identified at Aşıklı. Careful recovery of very small artifacts, such as beads and stone chips and debitage, during the current excavation program of Aşıklı Höyük (Özbaşaran et al., this volume) has not yielded such evidence thus far.

On the other hand, the lack of stone bead manufacturing areas or workshops could suggest that small-scale production activities took place in non-permanent areas of the settlement. Belcher (2011: 141), for example, defined workshops as social units rather than places, "... network(s) of individuals and groups with particular skill sets and decentralized loci for specific activities rather than a single physical location or group of craftspeople." This way of looking at skilled production is interesting, given that the Aşıklı people were experienced in knapping hard stones such as obsidian and thus should have been able produce the beads if they wanted to. Waste from craft production could be discarded away from the main work and habitation areas (e.g., Murray 1980), making it difficult for archaeologists to recognize places or episodes of manufacturing of these rare objects. Considering the distribution of particular bead types in Anatolia and the Near East, the mechanisms of diffusion could include exchange and mobility between distant populations, resulting in the transfer of technical know-how.

The complex geomorphological structure of the region surrounding Aşıklı Höyük could contain localized outcrops of the more unusual raw materials represented among the stone beads

in the assemblage. Although potential sources of certain stones and minerals have not been identified through systematic geological survey in the region (but see Çiner et al. 2015), the plateaus and valleys of the volcanic terrain of Cappadocia yield diverse materials, including obsidian, basalt, gypsum and tufa (Özbaşaran 2011b). Sources of quartz, carnelian (a red variety of quartz), agate (vari-colored quartz), and jasper are not reported in Cappadocia but can occur near lava formations. Chloride, serpentine, and meerschaum occur under magmatic layers of mountainous areas; limestone, marble, tufa and steatite formations are due to the calcareous structure of the terrain. The closest known copper source, Bakır Çukuru, is about 40 km northwest of Aşıklı Höyük. Other sources are reported in the Menteşe region in Kayseri, Bakırlık and Sızma regions in Konya, Karakilise in Isparta (Esin 1999b), Derekutuğun village and the Mazıönü region in Çorum (Yalçın et al. 2015), the most distant being 300 km from Aşıklı as the crow flies. Malachite, a dark green copper mineral, occurs in the oxidized portions of copper ore deposits, especially in regions where limestone is present. Turquoise, another secondary blue or blue-green mineral, is found near copper occurrences under certain climatic and geological conditions. The formation of these two minerals is associated with weathered volcanic rocks in arid regions (Rapp – Hill 2006: 231-232). The procurement of stone for beads could be embedded in expeditions for other activities conducted by individuals or groups with good knowledge of the environment (see Bains 2012: 211).

Finally, mollusc shells from the Mediterranean Sea dominate the shell bead sample from Aşıklı Höyük. The number of specimens is too small, however, to propose networks of circulation and exchange. Marine shells have also been found at Boncuklu Höyük in the Konya Plain. However a preference for local stone over certain "exotic" raw materials, including marine shells, is observed at this site[2] and at Aşıklı Höyük.

Ornaments as metaphors and symbols

Animals, or parts of animals, could be used by humans as metaphors for the construction of identities (e.g., Choyke 2010; Copet-Rougier 1988; Russell 2012: 11). Teeth as well as bones from different animals were used to make personal ornaments. The red deer canine pendants made from real teeth, and carved imitations of them, are one of the most persistent elements of ornamentation at Aşıklı Höyük. Similar artifacts have been used in Europe and the Balkans to Southwest Asia since the Upper Palaeolithic. The raw materials used to make the copies of canines vary from stone and cortical mammal bone to *Spondylus* shell[3]. Baysal (2012) and others (e.g., Kuhn – Stiner 2007a, 2007b) have proposed that red deer canines and their copies were "familiar" items that functioned as media in a non-verbal interregional communication system. Red deer were a large and valuable prey item in Eurasia, and only mature males tend to develop usable canines. Perhaps, scarcity triggered imitation[4], but the practice of imitation itself

2 Mollusc shells and stones account for 28.4% and 61.7%, respectively, of the Boncuklu Höyük bead assemblage (Baysal 2013: Tab. 3).

3 For Upper Palaeolithic, Epipalaeolithic, Neolithic and Chalcolithic examples from Europe and Southwest Asia, see for example Bar-Yosef Mayer 2013a: Fig. 9.1; Bar-Yosef Mayer et al. 2013; Baysal 2017; Baysal – Erdoğu 2014: 374; Belfer-Cohen – Goring-Morris 2013: 548; Choyke 2010: Fig. 18.6; Vanhaeren – d'Errico 2005: Fig. 6.

4 Both sexes of red deer may develop upper canines, but in adult males they are usually well developed and more appropriate for making ornaments (Choyke 2001: 252). While this limits availability, the shape of the tooth, which presents a bulbous crown and a flattened root, is easy to transform into a pendant by simply cutting a perforation in the root. The tooth could also be ground to smooth or left in its naturally polished state.

could indicate the symbolic value of these objects (Baysal 2015: 18; Choyke 2001, 2008). Sykes (2014: 127) drew attention to ethnographic data on personal items made from bones and teeth of hunted animals, and she points to their use as symbols of the success of the hunters. Apart from the relation between these objects and hunting, more abstract meanings have also been considered, such as the boundary between the domestic and the wild. As with the manufacture of a bead from the tooth that once belonged to a wild animal, the body part of the animal was transformed into a manipulated object, an "artifact" (see Larsson 2013).

Flat "teardrop" pendants made from stone (n=4) appear during the occupations of Level 2D and Level 2A-C at Aşıklı Höyük. One is made from black serpentinite, while the rest are made from green steatite. These forms are stylized copies of red deer canine pendants. Cortical mammal bone was the preferred material for canine imitation in the earlier levels of the site, but stone was also employed in the 8th millennium. Since the green steatite beads come from burials, it is possible that the symbolism or the value of the copies changed from the previous period. In Level 2A-C, an adult female (Sk.35) was buried with a bead group consisting of copper beads and red deer canines (see Figure 8). Some of the teeth exhibit new holes opened near the initial perforation after it was broken, indicating repair for further use. Repair suggests the conservation of memory or identity. The attention to, and repair of, such pendants indicates a continuing awareness of the symbolic value of the red deer canines, although hunting declined in importance in the later occupations of Aşıklı, as herding became the main source of animal products.

Conclusion

Personal ornaments carry social and other symbolic meanings. Body adornment, including clothing, tattooing, painting and ornaments, helps construct and communicate identities. The color, texture, raw material and form of the beads can function as symbols and acquire different meanings during the life and after the death of the adorned individuals (e.g., Barnes – Eicher 1992; Baysal – Miller 2016; Choyke 2001, 2008, 2010; Kuhn et al. 2001; Stiner et al. 2013; Williams 1987; Wright 2012). Ornaments can also reflect shifting representations and behaviors during times of socio-economic change. The early stages of sedentism and agriculture, or Neolithization, in Southwest Asia represent such a period. Beads were a persistent means of personal adornment at Aşıklı Höyük, the largest early Neolithic site in eastern Central Anatolia. Incipient sedentism was marked by cognitive and behavioral changes in addition to economic changes. The forms and raw materials of the beads changed and evolved during more than a millennium of occupation of the site.

Locally available raw materials—mainly rocks, minerals and animal bones and teeth—were used to make beads at Aşıklı Höyük. Stone materials of low hardness, especially limestone, steatite and marble, were preferred over harder types. Harder stone materials were used for particular bead types, which are more complex and rare. The 8th millennium (Levels 2D and 2A-C) is marked by increased variability in the colors, types and probably sources of stones and minerals used to make beads.

Most of the beads of the 8th millennium BC occupations were deposited in graves. The incorporation of beads in the funerary sphere has no parallels in the mid-9th millennium settlement of Aşıklı and attests to a new burial symbolism. Groups of beads, customarily deposited in adult male and female burials, contained elements of various colors, with green and red being the most common. Single beads associated with female and children burials were green.

Beads made from stones and minerals were shaped entirely by humans. Mollusc shell, bones and teeth instead seem to have been favored for their natural formal qualities. Cylindrical beads were made in quantity from the metapodials of hare and fox. Small game, hare in particular, could be easily captured by the site's inhabitants for food. Some of the metapodial bones of the feet were then used for extracting bone cylinders. These tube-shaped beads were probably used in linear ensembles.

The osseous materials were perhaps invested with different values and meanings. The relative proportions of these kinds of beads decreased during the 8th millennium in favor of stone beads, especially the flat disc-shaped ones made from limestone and steatite. Red deer canines are comparatively few. Imitations of these teeth were manufactured from bone in the early occupations, but in the 8th millennium they were also made from stone. Both real and imitation canines show evidence of repair, which highlights their potential function as symbols. Finally, the procurement and natural aspects of mollusc shells would have played a role in the choices made. One of the rare examples of ochre-tinted beads is a marine mollusc species.

There is no evidence of specialized production of beads in the work areas of Aşıklı Höyük. Perhaps, this activity occurred around the site but had a more diverse and unrestrained nature. This possibility is suggested by the variability observed in the raw materials and types of the beads (cf. Costin 1991; Rice 1991). The greatest variability occurs during the 8th millennium. Some of the products of this period, the carnelian biconically drilled butterfly beads in particular, were quite complex and had a widespread geographic distribution; they may or may not have been imported to Aşıklı. Incorporation of the beads in human interments and diversification of materials and types reflect temporal changes in ornamentation at Aşıklı, while the cylindrical bone beads, real and imitation red deer canine pendants, and shell beads continued to be used throughout the history of occupation. To conclude, the beads from Aşıklı Höyük are one of the media that reflect the temporal changes in the social fabric of the community.

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