Polished Obsidian Objects: Examples of Prestige Items From Kültepe[1]

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Keywords: Kültepe, obsidian, obsidian storage, prestige items, Assyrian Trade Colonies Period

Obsidian, one of the preferred raw materials for the production of knapped stone tools since prehistoric times, gradually began to be used to make ground and polished objects. In this preference, the aesthetic appearance of obsidian must have been an important factor, as well as the fact that it was an easily workable material. The polished objects, which are first known from a few Neolithic settlements, became more common through time. The obsidian blocks found in an official storage building at Kültepe, an important trade center during the Assyrian Colony Period, as well as the prestige items found in various contexts within the settlement attest to the importance of obsidian for Kültepe during this period. In this article, after a brief introduction to the use of obsidian in Anatolia since prehistoric times, our observations on the polished obsidian finds from Kültepe will be discussed and compared to similar objects from other sites.

Anahtar kelimeler: Kültepe, obsidiyen, obsidiyen depolama, prestij objeleri, Asur Ticaret Kolonileri Çağı

Tarihöncesi dönemlerden itibaren yontmataş aletlerin yapımında tercih edilen önemli hammaddelerden biri olan obsidiyen, zaman içerisinde yavaş yavaş sürtülerek şekillendirilen objelerin üretiminde de kullanılmaya başlanmıştır. Bu tercihte obsidiyenin camsı kırılma özelliği nedeniyle kolay şekillendirilebilir olmasının dışında estetik görünümünün de önemli bir yeri olmalıdır. İlk olarak, Neolitik döneme ait bazı yerleşmelerde ve az sayıda örnekle karşılaşılan sürtülerek şekillendirilen objeler zaman içerisinde giderek sayıca artış göstermektedir. Asur Ticaret Kolonileri Çağı'nda önemli bir ticaret merkezi olan Kültepe'de Resmi Depo Binası içerisinde büyük miktarlarda bulunan obsidiyen bloklar ve yanı sıra çeşitli alanlarda karşılaşılan prestij objeleri obsidiyenin yerleşme için bu dönemdeki önemini vurgulamaktadır. Makalede, obsidiyenin tarihöncesi dönemlerden itibaren Anadolu'da kullanımına değindikten sonra, sürtülerek şekillendirilmiş Kültepe obsidiyen buluntuları ile ilgili gözlemlerimiz yer almakta ve son olarak benzer objeler ile karşılaştırmalara yer verilmektedir.

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Introduction

Obsidian had an important place in people's lives in prehistoric and early historic times. Its physical properties allowed it to be easily shaped by knapping and since sharp edged tools could be produced from it, just like flint, it was one of the preferred raw materials in the production of the daily tools and weapons (such as arrowheads, blades for cutting, scrapers and borers) that were used by prehistoric communities. Although the use of obsidian as a material for daily tools and weapons decreased through time with the onset and intensification of the use of metal, its continuing desirability as can be seen in the production of prestige items (such as ornaments, mirrors, bowls, etc.) for which different techniques including grinding and polishing were employed.

In this article, firstly we briefly review the uses of obsidian in prehistoric Anatolia and afterwards present our observations[1] on the ground and polished obsidian finds from Kültepe, an important center during the Assyrian Trade Colony Period. We then discuss the increased use of these techniques in the production of obsidian objects during this period along with an evaluation of this craft and its specialization[2].

The Use of Obsidian in Anatolia

Obsidian is a natural glass, which is formed in volcanic systems when magma cools rapidly before it reaches the surface and crystallizes. Therefore, as a raw material, it can only be found in volcanic landscapes. However, since only certain volcanoes produce obsidian, its sources are restricted to certain regions of the world of which Anatolia is one. The most extensively exploited sources in this region are located in Central Anatolia (Göllüdağ, Nenezi Dağ) and Eastern Anatolia (Bingöl, Nemrut) (Chataigner 1998).

While this raw material was being extensively and ordinarily used in areas located close to its sources, it was acquired through exchange in distant areas. It is known that the hunter-gatherer groups in Anatolia knapped their tools in areas close to these sources since the Lower Palaeolithic. Examples of these tools used in daily activities are known from the excavations at Kaletepe Deresi 3 (Niğde) (Slimak et al. 2007) and also from the material

[1] The obsidian finds discussed in this article comprises of the finds that are inventoried in Kayseri Archaeological Museum and Ankara Anatolian Civilizations Museum.

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collected during the surveys in Central Anatolia (Kuhn et al. 2015) and Eastern Anatolia (Yalçınkaya 1998: 235).

With the diversification of the tools in the Epipalaeolithic Period, the uses of obsidian in daily life also expanded. Settlements such as Öküzini in Anatolia (Carter et al. 2011) and Mureybet, Abu Hureyra, El Kowm I, Zawi Chemi (Cauvin and Chataigner 1998: 330-331) and Ain Mallaha (Cauvin – Chataigner 1998: 330-331; Delerue –Poupeau 2007) in the Near East reveal that in this period obsidian was being transferred over long distances[3]. Most of these have only small amounts of obsidian, but the settlement of Pınarbaşı B is a good example of a more extensive assemblage with greater variety of tools (including geometric microliths, scrapers on flakes, retouched bladelets, etc.) (Pirie 2011; Baird et al. 2013) even though its location is not particularly close to the obsidian sources.

During the Neolithic Period, the use of obsidian intensified and it continued to be transferred as an exotic material to areas far from its sources (Balkan-Atlı 2003; 2005). The high quality blades and bladelets from the Kömürcü-Kaletepe workshop (Göllüdağ), which are thought to have required an extraordinary level of craftsmanship to make them, began to be evident in various settlements of the Near East (Balkan-Atlı – Binder 2007). This is also the period when we see the first examples of its use for the production of personal ornaments and prestige items. The polished obsidian bracelet from Aşıklı Höyük is the only example of the use of obsidian so far known in ornament production during the Aceramic Neolithic Period (Astruc et al. 2011) in Turkey. Obsidian is also used, in an unmodified state, to depict eyes in statues or figurines including the statue found in the Aceramic Neolithic settlement of Yeni Mahalle (Şanlıurfa) which were made from blade segments of obsidian (Çelik 2014: 101-106). A plastered head with unmodified flakes of obsidian placed in the eye sockets was also found in the Pottery Neolithic levels of the settlement of Çatalhöyük (Lingle et al. 2015: 275, Fig. 28.1). In contrast obsidian mirrors at Çatalhöyük were produced using grinding and polishing techniques (Conolly 1999; Vedder 2005).

By the end of the Pottery Neolithic, uses of obsidian sources began to change (Balkan-Atlı 2005; Coqueugniot 1998). Furthermore, along with the use of obsidian for daily tools at the Late Neolithic settlement of Domuztepe (Healey and Campbell 2014: 80-81), polished obsidian beads, pendants, mirrors and bowls from this settlement attests to the changing value of obsidian and the emergence of new crafts related to this change. This change continues throughout the Chalcolithic Period. At Güvercinkayası (levels dating to 5200-4750 BC), obsidian pendants and mirrors and the again use of obsidian in the eyes of the figures on the handles of ceramic vessels are amongst the examples of this change[4]

[3] An earlier example for long-distance distribution of obsidian is an obsidian scraper from Yabroud Rockshelter II (Early Upper Paleolithic), Frahm – Hauck 2017.

[4] S. Gülçur, personal communication.

Fig. 1. *Sites mentioned in the text with polished obsidian objects*

(Gülçur 2000: 59). Another settlement in Anatolia where ground and polished objects were found is Tell Kurdu. Obsidian beads, of which two are found in the Halaf Period levels of the settlement (Healey 2004), increase in number during the Chalcolithic Period and the handle of a vessel or mirror was also found (Yener et al. 2000: 72-73).

During the Assyrian Trade Colony Period, as more complex societies and well-defined cities emerged, obsidian was transferred over long distances alongside other materials as a commodity. The official storage building at Kültepe (Kanesh Karum), in which numerous obsidian blocks were stored, constitutes an important example (Özgüç 1986: 48; Özgüç 1999: 55; Altınbilek-Algül – Balcı 2010). It is of interest to note that during this period the use of obsidian to produce daily tools decreased although it was increasingly used for the production of prestige items, for which grinding and polishing techniques were employed. The obsidian vessels and vessel fragments found in various forms at Kültepe (Kanesh/Level 7 of the Mound Area and Levels Ib and II of the Karum Area), Acemhöyük (Level III) and Tell Atchana (Level VII) are amongst the best known examples of this (Özgüç 1986: 48; Özgüç 1999: 55; Altınbilek-Algül and Balcı 2010; Özgüç 1966: 22-23; Öztan 1988; Woolley 1955).

Kültepe (Kanesh Karum) and its Obsidian Finds

Kültepe, ancient Kanesh is located 20 km to the northeast of Kayseri, close to Karahöyük village (Fig. 1). With its location on the ancient trade route reaching from Assur in northern Mesopotamia through Central Anatolia via Malatya, the settlement was an

important focal point (Özgüç 1950)[5]. The nearest obsidian sources to the settlement are located in Central Anatolia (approx. 90 km.) and although obsidian was acquired and stored in bulk at Kültepe there is no indication that it was further traded.

Kültepe was the center of the Kingdom of Kanesh during the Assyrian Trade Colonies Period. The settlement consisted of two areas, the Kanesh (Mound) Area where the king and the local public lived and the Karum (Lower Town) Area, which functioned as the trade center. Levels 10-6 at Kanesh are dated to the Assyrian Trade Colony Period. Levels 7 and 8 revealed three palaces (Kulakoğlu 2011b: 41-43). The goods brought to Kültepe from distant areas by the Assyrian merchants were taken directly to the palace and kept in the rented storage buildings until the tax procedures were completed.

The official storage building where the Kültepe obsidian blocks were found belongs to the Level 7 of Kanesh Area (contemporaneous with Level Ib of the Karum Area). The storage building is one of the rectangular buildings located right next to the palace and two other buildings that are interpreted as temples. This rectangular building is 7,5 x 18 m in size and comprises of four sections. Unworked obsidian were found inside the building along with a bronze spearhead on which "The Palace of the King, Anitta" was inscribed. While the spearhead was found in the larger room, the obsidians clustered in the small room (Özgüç 1996: 279; Kulakoğlu 2011a: 1018-1019). The excavator interpreted this building in the "sacred area" as an official storage building, belonging to the temples or the palace, and noted that the obsidian found in this building was in the form of big, unworked blocks of various sizes which they estimated to weigh two or three tons (Özgüç 1986: 48, Fig. 97-1-3; Özgüç 1996, 280; Özgüç 1999: 52-53, Fig. 63.1). Recent technological analyses conducted on the obsidian finds from this building by us, has demonstrated that numerous blocks (494 pieces, 804.833 gr) and block fragments (1425 pieces, 181.304 gr) as well as flakes (112.989 gr) and also few knapped blocks (7 pieces, 6.956 gr) and a flake core (339 gr) were present. The overall weight of the obsidians from this building is 1 ton, 106 kilograms, 421 grams (Altınbilek-Algül – Balcı 2010)[6].

Although chemical analyses on the finds has not yet been undertaken, as Kobayashi has mentioned (Carter – Kilikoglou 2007: 133-134) their color and texture suggests that they are from Göllüdağ in Central Anatolia. The presence of numerous obsidian blocks and pieces/fragments? of blocks (Fig. 2, 3), some over 20 kilograms, raises questions of how they were transported from the sources to the settlement. Written records indicate that Assyrian merchants used donkeys and mules for the transportation of trade goods (Atıcı 2014: 244).

[5] Earlier work at the site was first conducted by E. Chantre, and afterwards the site had been excavated by H. Winckler in 1906 and Hrozny in 1925, Özgüç 1999. The first systematic excavations at the site had been commenced in 1948 by T. Özgüç (1950) until 2005. Since 2006, the continuing work is conducted by K. Emre and F. Kulakoğlu and still continues under the directorate of F. Kulakoğlu, Kulakoğlu 2011 a, b.

[6] However one must also note that the obsidian blocks were left unattended for many decades in the field, and most of them have been lost.

Fig. 2. *Examples of the obsidian blocks*
Fig. 3. *Large obsidian blocks*

It is probable, therefore, that animals were used for the transportation of obsidian blocks. The more numerous, smaller blocks may have made transportation easier.

Although few in number, the presence of knapped blocks (n=7) indicate that the knappers may have conducted trial knapping on the source while acquiring the obsidian blocks. There is no production debitage inside the building, apart from one single platform flake core, which suggests that knapping was not conducted inside the building and it purpose was solely as a storage building, as T. Özgüç suggested. The presence of numerous very large flakes (the largest ones are approximately 150 x 90 x 30 mm) found inside the building allows one to suggest that obsidian was probably knapped at a workshop close to the source and then brought to the settlement. It is possible that these flakes could have been prepared at a knapping area within the settlement, which has not been located, and then brought into the storage building (Altınbilek-Algül – Balcı 2010). However, since there is no related debitage within the assemblage which suggests an on-site workshop and because of the numerous blocks and flakes found inside the official storage building, it is suggested that the obsidian was stored and used as a trade good.

Other finds from the official storage building include ground and polished objects; they include two fragments of polished obsidian vases (Özgüç 1986: 48, Plate. 97.4-5; Özgüç 1999: Plate. 55.4-5) and a rectangular-sectioned handle (Özgüç 1999: 55, Plate. 106.1). Also an obsidian 'bar' (Özgüç 1986: 48, Plate 97.7) was found on the mound in the same level as the official storage building. Three other vase fragments were found

in the palace located in the southern terrace (Özgüç 1999: 41, Fig. C.20-22). A grooved fragment, presumed to come from a vessel in the course of manufacture, was found in the burnt debris of the northern fortification wall (Özgüç 1999, 92 pl. 77. 4a-b).

Finds from the Karum, level 1b, include an obsidian bar or stick (Özgüç 1986: 48, Plate 97.6). There is also a broken obsidian bowl which was found in the street fill of the same level (Kulakoğlu 2011b: 251, catalogue no.199), a broken animal head, an animal-headed cult bowl (Kulakoğlu 2011b: 250, catalogue no.197, 198) (Fig. 4) as well as an unfinished bowl with a pointed base from an unstratified context (Fig. 5).

The elaborate and skilled workmanship invested in these finds is of great interest. As T. Özgüç indicates (Özgüç 1986: 48), these objects raise questions as to whether there were workshops and expert knappers within the settlement. Although no debitage related to the production of these finds has yet been found, either on the Mound or in the Karum Area, the unfinished bowl fragments (Fig. 6) (Özgüç 1999: Pl 77) and the bar or sticks of obsidian (Fig. 8), which may be the cores from drilling with tubular drills, do strengthen the possibility that they were produced on-site.

Observations on the Prestige Objects

The prestige obsidian objects described above were found in the official storage building in Kanesh Area Level 7, the palace located in the southern terrace and Levels Ib and II of the Kanesh Karum Area. The obsidian objects which are discussed below, are from Levels Ib and II of the Kanesh Karum Area. Four of these finds are now in Kayseri Archaeological Museum and one of them is in the Museum of Anatolian Civilizations, Ankara. What is common between these objects is that the method of production involved grinding and polishing.

1- An unfinished obsidian bowl or cup, one of the four prestige items inventoried in the Kayseri Museum, comes from Karum Area Level Ib (Kt 90/k 391) (Kulakoğlu 2011b: 251, catalogue no.199) (Fig. 6). Regarding its form, the obsidian vessel (7,5 cm in height, 10,3 cm in diameter) can be described as a cup with a broken handle (Altınbilek-Algül and Balcı 2010). Although the ridge on the side of its body resembles an unfinished handle, it is hard to identify since it is broken. The conical bowl was roughly knapped from an obsidian block to a preform. This preform was possibly ground with a hard stone such as granite and roughly smoothed afterwards. It could be suggested that its conical form was given at this stage. At the next stage the coarse surface of the cup was pecked with a stone hammer to make the surface and shape more regular. The entire surface of the bowl was hammered except its bottom, which was already flat. The oval concavity on the upper surface of the bowl indicates that its interior started to be hollowed out. The broken handle allows one to suggest that after the breakage, which possibly happened during production, the cup was abandoned in its unfinished state. The symmetry of the conical body of the bowl indicates skilled and elaborate workmanship.

Fig. 4. *Obsidian bowl fragment with pointed base (Kayseri Archaeological Museum).*

2- The second object is an obsidian bowl fragment with a pointed base (2,7 cm in height, 2,8 cm in diameter) (Kt 82/k 261) (Fig. 4). It was defined as a "two handled goblet with pointed base, vertically fluted" by Özgüç despite the fact that only the base is present (Özgüç 1986: 50, Plate 95.7). The inner and outer surfaces of this thin-walled bowl were shaped carefully. The outer surface was first ground and polished and then decorated with grooves. The inner surface was also smoothened by grinding but left unpolished. The bowl must have been broken after it was completed. Since only its bottom was found, there is no information regarding its form besides being conical. Although a vessel from Acemhöyük suggests it may have had two handles as hypothesized by Özgüç (Öztan 1988).

Fig. 5. *Unfinished obsidian bowl with pointed base (Kayseri Archaeological Museum).*

3- The third obsidian object is another bowl fragment with a pointed base (Kt 87/k 91) (Fig. 5). The bowl (5,90 cm in height, 3,09 cm in diameter) was possibly shaped out of a small obsidian block or one of the large flakes. It is suggested that during the initial preparation, the block was first flaked and then ground into shape, creating a preform. Traces of light hammering or pecking on its surface indicate that it was then hammered or pecked and ground to create its present form. Lastly, the surface of the object was ground, possibly with sandstone or a stone of similar abrasive properties in order to obtain smooth grooves on the hammered areas. It should be noted that not all of the hammering traces were erased and the object was abandoned for some reason (perhaps because it was broken) during production. This object, which was left unfinished before it was hollowed out, is of interest because it allows us to identify the production stages and suggests that the hollowing

out took place at a late stage. Likewise, it is important to note that it resembles the groove decorated pottery from Level II regarding both its shape and the decoration (Özgüç 2005: 117, Plate 102).

4- The fourth object found in Karum Area Level Ib is an obsidian bull's-head, which is elaborately worked (Kt. 07/k 206) (Fig. 7)[7]. The object was shaped by grinding and polishing, which continued until a smooth, highly reflective surface was obtained. The elaborate workmanship of the object indicates that the latest stage of the grinding process was possibly carried with sandstone or another stone with similar qualities. Some grinding marks can be also observed on the surface of the object. The facial lines of the bull were emphasized with grooves and lastly the object was polished[8]. This object is of interest due to its resemblance to a terracotta bull's-head rhyton (Özgüç 2005: 181, Plate 208) found in the same level. A similar one was found at Acemhöyük (Öztan 1988 Fig. 21)

Fig. 6. *Unfinished conical cup made from obsidian (Kayseri Archaeological Museum).*

5- An obsidian bar or stick, inventoried in the Ankara Anatolian Civilizations Museum (Kt. ş/k. 49, 50) (Fig. 8), was found in two pieces. The smaller piece is 31,28 x 18,87 x 18,84 mm, and 13 gr whereas the big part of the object is 180x19,87,20 mm and weighs 130 gr). The little piece does not directly fit to the rest of the object, possibly due to the absence of another piece in between; Özgüç defined this object with a long oval section as a stick (Özgüç 1986: 48, Plate 97.6). The traces on the object indicate the use of a mechanical tool during the grinding process. A very small part of the object bears traces of polishing. Although its exact function is unknown, it is very similar to the drill 'cores' resulting from the use a tubular drill (cf. URL 1) but its length and aesthetical appearance may suggest that it was possibly a status symbol rather than being the waste material from drilling.

[7] A similar object from the settlement was previously interpreted as a cult bowl by Kulakoğlu, Kulakoğlu 2011b: 250, catalogue no.197.

[8] Vedder produced experimental obsidian mirrors similar to the ones found during J. Mellaart's excavations at Çatalhöyük on which he used clay and wood ash for polishing, Vedder 2005.

Fig. 7. *Obsidian bull's-head (Kayseri Archaeological Museum).*

Discussion and Conclusion

Since prehistoric times, obsidian was a material that was shaped into various objects, generally by knapping and in some cases by grinding and polishing. The ground and polished objects, which require a different technique and more intensive labor to give them a shiny and more aesthetical appearance, were generally made into ornaments or prestige objects such as mirrors and bowls.

The earliest examples of polished obsidian objects are known from the Pre Pottery Neolithic Anatolia, a period when the sedentary way of life began and long-term settled villages emerged. These objects diversified by the end of the Neolithic Period, and this diversity increased during the Assyrian Trading Colony Period. The settlements at this time functioned primarily as trade centers controlled by city-states; the diversity in the production of these prestige objects, which require specialized skill and knowledge of production, is consistent with the general aspects of this period.

Evidence related to on-site production of polished obsidian objects is rare but not unknown; examples are known from Domuztepe, a Late Neolithic site in Anatolia (Kahramanmaraş) and Tell Arpachiyah in Iraq (Healey 2007: 138) and a late Chalcolithic workshop at Tell Brak also in Iraq (Khalidi 2014) (see also Healey in preparation). A concentration of obsidian bead blanks and preforms from Domuztepe allowed the interpretation of on-site production of beads, and although large obsidian pieces or blocks have not been found there, it is not impossible that obsidian mirrors and bowls were also made on site (Healey 2007: 181). At Tell Arpachiyah a seemingly unfinished obsidian vessel and also obsidian beads were found with a considerable amount of knapping debitage on the floor of the Burnt House. Numerous decorated ceramics and stamp seals found also in the same house allowed researchers to suggest that prestige objects were produced and distributed from here (Mallowan – Rose 1935; Campbell – Healey 2013). Similarly at Tell Brak a workshop producing beads and pendants was excavated in the Late Chalcolithic levels (Khalidi 2014). This workshop is also of interest from the point of view of the

Fig. 8. *Obsidian bar or stick (Ankara Anatolian Civilizations Museum).*

vessels at Kultepe because a large conical obsidian blade core had been transformed into a vessel was found discarded in a bin (Khalidi 2014).

Based on the elaborate workmanship needed to make the prestige obsidian objects from Kültepe we are able to say that those objects were produced by specialized experts. Our studies have also revealed different stages of production although the workshops remain elusive. The unfinished examples show that in some cases at least a hammering or pecking technique, perhaps accompanied by grinding, was employed to regularize and smoothen the surface during the shaping of the bowl. Some discarded pieces suggest that the interior was hollowed out at a later stage. Some were polished after the object was shaped. Of particular interest are the fragments with grooved decoration on the exterior surface. The unfinished pieces suggest that this was an elaborate process, but one carried out at Kültepe. The similarity between the grooved decorations on the obsidian vessels and that on the pottery from the same level is also of interest, since making grooved decorations on obsidian requires an extensive skill.

Obsidian bowls begin to be evident during the end of the Neolithic Period for example at Domuztepe and other Halaf sites (Healey and Campbell 2014: 80-81; Healey 2007 Table 3) and continue mainly in Mesopotamia into the Early Bronze Age for example at Tell Brak (Khalidi 2014: 84 and fig. 5.22), Eridu (Safar et al. 1981: 238) Uruk-Warka (Lindermeyer–Martin 1993) and Ur (Woolley 1955). The closest parallels and broadly contemporary with Kültepe are to be found at Acemhöyük located in the same region as Kültepe and at Alalakh in Hatay. At Acemhöyük obsidian and rock crystal vessels and some ivory objects were found with a game-board and gold ornaments in a large burnt building in Level III (Özgüç 1966: 22-23); Here too, vessels decorated with grooves as well as a bull's head rhyton were recovered (Öztan 1986: Fig. 14 and 21). At Tell Atchana in the Level VII palace, a store of obsidian blocks and a vessel workshop were excavated by Woolley with some vessels in different stages of manufacture (Woolley 1955; Healey forthcoming).

Polished obsidian finds were never amongst the common objects produced and used in every settlement, but were rather rare prestige items. As emphasized above, Kültepe is one of the few settlements where this technique was employed. Furthermore, it is possible that the obsidian blocks and big flakes found in the official storage building were used in the production of these polished prestige objects (Altınbilek-Algül – Balcı 2010). However, the lack of any defined workshops within the settlement means that we have to be more cautious in asserting an on-site production.

Bibliography

Altınbilek-Algül, Ç. – S. Balcı 2010
"Obsidiyen Ticaretinin Merkezi Olarak Kültepe" *Türk Eskiçağ Bilimleri Enstitüsü Haberler*, Mayıs 2010, Sayı 30: 11-13.

Astruc, L. – R. Vargiolu – M. Ben Tkaya – N. Balkan-Atlı – M. Özbaşaran – H. Zahouani 2011
"Multi-scale tribological analysis of the technique of manufacture of an obsidian bracelet from Aşıklı Höyük (Aceramic Neolithic, Central Anatolia)", *Journal of Archaeological Science* XXX: 1-10.

Atıcı, L. 2014
"Tracing Inequality from Assur to Kültepe / Kanesh", B. S. Arbuckle–A. A. MacCarty (eds.), *Animals and Inequality in the Ancient World*, Colorado: 233-252.

Baird, D. – E. Asouti – L. Astruc – A. Baysal – E. Baysal – D. Carruthers – A. Fairbairn – C. Kabukçu – E. Jenkins – K. Lorentz – C. Middleton – J. Pearson – A. Pirie 2013
"Juniper Smoke, Skulls and Wolves' Tails. The Epipaleolithic of the Anatolian Plateau in its South-West Asian Context: Insights from Pınarbaşı", *Levant* 45/2: 175-209.

Balkan-Atlı, N. 2003
"Obsidien "Ticareti: Yeni Veriler, Yeni Modeller, Yeni Sorunlar. Bir Deneme", M. Özbaşaran – O. Tanındı – A. Boratav (eds.) *Archaeological Essays in Honour of Homo Amatus. Güven Arsebük İçin Armağan Yazılar*, İstanbul: 9-18

Balkan-Atlı, N. 2005
"Paleolitikten Günümüze Obsidiyen", *Türk Eskiçağ Bilimleri Enstitüsü Haberler*, Sayı 19: 1-3.

Balkan-Atlı, N. – D. Binder 2007
"Kömürcü-Kaletepe Obsidiyen İşliği", M. Özdoğan, N. Başgelen and P. Kuniholm (eds.). *Türkiye'de Neolitik Dönem. Yeni Kazılar, Yeni Bulgular*, İstanbul: 216-222.

Campbell, S. – E. Healey 2013
"The Obsidian at Arpachiyah, Iraq: an Integrated Study", F. Borrell, J.J. Ibanez and M. Molist (eds.) *Stone Tools in Transition: From Hunter-Gatherers to Farming Societies in the Near East*, Barcelona: 529-542.

Carter, T – Kilikoglou, V. 2007
"From Reactor to Royalty? Aegean and Anatolian Obsidians from Quartier Mu, Malia (Crete)", *Journal of Mediterranean Archaeology* 20.1: 115-143.

Carter, T. F. – X. Le Bourdonnec – M. Kartal – G. Poupeau –T. Calligaro – P Moretto 2011
"Marginal Perspectives: Sourcing Epi-Paleolithic to Chalcolithic Obsidian from the Öküzini Cave (SW Turkey)", Paléorient 37/2, 123-149.

Cauvin, M.-C. – C. Chataigner 1998
"Distribution de l'Obsidienne dans les Sites Archéologiques du Proche et du Moyen Orient", M.-C. Cauvin – A. Gourgaud – B. Gratuze – N. Arnaud – G. Poupeau, J.-L. Poidevin – C. Chataigner (eds.), *L'obsidienne au Proche et Moyen-Orient: Du Volcan à l'Outil*, Oxford: BAR International Series 738: 325-350.

Chataigner, C. 1998
"Sources des Artefacts du Proche Orient d'après leur caractérisation géochimique", M.-C. Cauvin – A. Gourgaud – B. Gratuze – N. Arnaud – G. Poupeau – J.-L. Poidevin – C. Chataigner (eds.), *L'Obsidienne au Proche et Moyen Orient: du Volcan á l'Outil*, Oxford: BAR International Series 738: 273-324.

Conolly, J. 1999
The Çatalhöyük flint and obsidian industry. Technology and typology in context, Oxford: BAR International Series 787.

Coqueugniot, E. 1998
"L'obsidienne en Méditerrannée Orientale", M.-C. Cauvin – A. Gourgaud – B. Gratuze – N. Arnaud – G. Poupeau – J.-L. Poidevin – C. Chataigner (eds.), *L'obsidienne au Proche et Moyen Orient. Du volcan a l'outil*, BAR International Series 738: 351-362.

Çelik, B. 2014
"Şanlıurfa Yeni Mahalle Höyüğü in the Light of Novel C14 Analysis. Yeni Karbon 14 Analizleri Işığında Şanlıurfa – Yeni Mahalle Höyüğü", A. Engin – B. Helwing – B. Uysal (eds.), *Armizzi. Engin Özgen'e Armağan, Studies in Honor of Engin Özgen*, Ankara: 101-107.

Delerue, S. – G. Poupeau 2007
"La provenance des obsidiennes du Natoufien final de Mallaha", F. R. Valla, H. Khalaily, H. Valladas, E. Kaltnecher, F. Bocquentin, T. Cabellos, D. E. Bar-Yosef Mayer, G. L Dosseur, L. Regev, V. C., S. Weiner, E. Boaretto, N. Samuelian, B. Valentin, S. Delerue, G. Poupeau, A. Bridault, R. Rabinovich, T. Simmons, I. Zohar, S. Ashkenazi, A. D. Huertas, B. Spiro, H. K. Mienis, A. M. Rosen, N. Porat, A. Belfer-Cohen (eds.), Les fouilles de Ain Mallaha (Eynan) de 2003 à 2005: quatrième rapport préliminaire, *Journal of the Israel Prehistoric Society* 37: 291-296.

Frahm, E. – T. C. Hauck 2017
"Origin of an obsidian scraper at Yabroud Rockshelter II (Syria): Implications for Near Eastern social networks in the early Upper Palaeolithic", *Journal of Archaeological Sciences Reports* 13: 415-427.

Healey, E. 2004
"Tell Kurdu 2001. Chipped Stone", R. Özbal – F. Gerritsen – B. Diebold – E. Healey – N. Aydın – M. Loyet – F. Nardulli – D. Reese – H. Ekstrom – S. Sholts – N. Mekel-Bobrov – B. Lahn (eds.), '*Tell Kurdu excavations 2001' Anatolica 30*: 56-60.

Healey, E., 2007
"Obsidian as an Indicator of Inter-Regional Contacts and Exchange: Three Case-Studies from the Halaf Period", *Anatolian Studies* 57: 171-189.

Healey, E. (in press)
"The Ostententatious use of obsidian in Bronze Age Mesopotamia, Anatolia and the northern Levant", K. A. Yener – Tara Ingman (eds). *Alalakh and its Neighbors: Proceedings of the 15th Anniversary Symposium at the New Hatay Archaeology Museum, June 10-12, 2015*, Ancient Near Eastern Studies series of Peeters Press, Leuven

Healey, E. – S. Campbell 2014
"Producing Adornment: Evidence of Different Levels of Expertise in the Production of Obsidian Items of Adornment at Two Late Neolithic Communities in Northern Mesopotamia", *Journal of Lithic Studies* 1/2: 79-99.

Gülçur, S., M. Endoğru – D. Kara 2000
"Güvercinkayası 1998 Kazısı", 21. *Kazı Sonuçları Toplantısı 1. Cilt*: 55-70.

Khalidi, L. 2014
"Fifth Millennium BC Obsidian Production and Consumption in Area TW, Tell Brak", McMahon – A. – Crawford, H. (eds.) *Preludes to Urbanism. The Late Chalcolithic of Mesopotamia. In honour of Joan Oates*. Cambridge: 69-87.

Kuhn, S. – B. Dinçer – N. Balkan-Atlı – M. K. Erturaç 2015
"Paleolithic Occupations of the Göllü Dağ , Central Anatolia, Turkey", *Journal of Field Archaeology* 40/5: 581-602.

Kulakoğlu, F. 2011a
"Kültepe-Kanes: A Second Millenieum B.C.E. Trading Center on the Central Plateau, Ancient Anatolia 10.000-323 B.C.E", S.R. Stedman –G. McMahon (eds), New York: 1012-1030.

Kulakoğlu, F. 2011b
Anadolu'nun Önsözü Kültepe Kaniş-Karumu Asurlular İstanbul'da, Kayseri Büyükşehir Belediyesi Kültür Yayınları, No: 78.

Lindermeyer, E. – L. Martin 1993
Uruk, Kleinfunde III: Kleinfunde im Voderasiatischen Museum zu Berlin, Archäologisches Institut, Abteilung Baghdad, Philipp von Zabern, Mainz am Rhein.

Lingle, A. – N. Dell'Unto – L. Der – S. Doyle – K. Killackeys – A. Klimowicz – L. Meskell – P. Parkes – B. Tung 2015
"Painted Plaster Head" *Çatalhöyük 2015 Archive Report*: 275-289.

Mallowan, M. – J. C. Rose 1935
"Excavations at Tell Arpachiyah 1933" *Iraq* 2: 1– 178.

Özgüç, T. 1950
Kültepe Kazısı 1949/ Ausgrabungen in Kültepe 1949. Türk Tarih Kurumu Yayınları V.10, Ankara.

Özgüç, T. 1986
Kültepe-Kaniş II Eski Yakındoğu'nun Ticaret Merkezinde Yeni Araştırmalar, Türk Tarih Kurumu Basımevi, Ankara.

Özgüç, T. 1996
"An obsidian storehouse close to the temples built by Anitta, King of Nesa", H. Gasche – B. Hrouda (eds.), *Collectanea Orientalia-Histoire, arts de l'espace et industrie de la pierre. Etudes offertes en hommage a Agnes Spycket*, CPOA 3, Neuchatel, Paris: 279-283.

Özgüç, T., 1999
Kültepe-Kaniş/Neşa Sarayları ve Mabetleri, Türk Tarih Kurumu Basımevi, Ankara.

Özgüç, T., 2005
Kültepe/Kaniş-Nesa, İstanbul.

Özgüç, N. 1966
"Acemhöyük Kazıları", *Anadolu X*: 1-28.

Öztan, A. 1988
"Acemhöyük Taş Kapları", *Belleten* LII (203): 393-406.

Pirie, A. 2011
"The Epipaleolithic chipped stone from Pınarbaşı, on the Central Anatolian Plateau", E. Healey – S. Campbell –O. Maeda (eds.) *The State of the Stone. Continuities and Context in Near Eastern Lithics*, Berlin: 89-96.

Safar, F. – M.A. Mustafa – S. Lloyd 1981
Eridu, Ministry of Culture and Information. State Organization of Antiquities and Heritage, Baghdad.

Slimak, L. – S. Kuhn – N. Balkan-Atlı – D. Binder – B. Dinçer 2007
"Kaletepe Deresi 3: de l'Acheuleen au Mousterien en Anatolie centrale" *Anatolia Antiqua/Eski Anadolu* XV: 257–273.

Vedder, J. 2005
"The obsidian mirrors of Çatalhoyük", I. Hodder (ed.), *Changing Materialities at Çatalhöyük: Reports from the 1995-99 Seasons.* McDonald Institute for Archaeological Research, Cambridge: 579-619.

Woolley, L. 1955
Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949, Oxford.

Yalçınkaya, I. 1998
"Découvertes paléolithiques en obsidienne en Anatolie orientale", M.-C. Cauvin – A. Gourgaud – B. Gratuze – N. Arnaud – G. Poupeau – J.-L. Poidevin – C. Chataigner (eds.), *L'Obsidienne au Proche et Moyen Orient: du Volcan á I'Outil*, Oxford: BAR International Series 738 : 235-240.

Yener, A. – C. Edens – J. Casana – B. Diebold – H. Ekstrom – M. Loyet – R. Özbal 2000
"Tell Kurdu Excavations 1999", *Anatolica 26*: 31-117.

URL 1: http://www.ucl.ac.uk/museums-static/digitalegypt/stone/vessels.html