

An Ethno-Archaeological Approach to the “Monumental Rock Signs” in Eastern Anatolia*

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Introduction

Various geometric figures carved on the rock faces outside the walls of Urartian fortresses, mostly in Lake Van Basin, northwestern Anatolia and northwestern Iran, have been identified as “monumental rock signs” (Belli 1989; Belli 2001). The “signs” are generally circular or “V”-, “U”- and sickle-shaped, having a width of 10-15 cm and a depth of 4-10 cm (Fig. 1). Usually they appear in groups. Large groups containing signs of approximately uniform size are encountered along with the smaller groups.

Since their presentation to archaeological literature in the 19th century, various explanations emerged, most of which centred on their religious roles as cult areas. It was speculated that they hosted mysterious Urartian cult ceremonies and that sacrificial blood was poured into these “monumental rock signs” (Belli 1989; Belli 2001; Belli 2007). Another view was that the “signs” were carved in order to consecrate the Urartian fortresses and protect them from evil (Belli 1992).

However, there is no archaeological, ethnographical or philological evidence for the religious use of these signs, and their find-spots, shapes and workmanship does not support, in my opinion, the previous explanations about their functions.

A new idea emerged after a simple observation during my recent visits to Eastern Anatolia: the fact that the signs, especially the circular ones, are

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called “wheels” by the local population led me to compare them with chariot components (Fig. 2). Detailed studies on the forms of the signs and a comparison between the Urartian and Assyrian chariots with traditional carts yielded sound results. It seems that these “signs” are moulds used for shaping wooden chariot parts, though they could also have served other purposes such as making agricultural equipment, furniture etc.

Bending wood by softening it in boiling water, water vapour, or heat is applied frequently in making wooden implements. This process requires various tools and especially moulds, if mass production is intended.

The Find-spots of the Rock Signs in Eastern Anatolia and Their General Characteristics

Usually found around Urartian centres, the “signs” are located close to each other or sometimes even coincide with one another. The most common forms are circles, “V”, “U” and sickle shapes (Figs. 3, 4), accompanied by other geometrical forms.

The signs generally appear in East Anatolia, Van Lake basin, Northeast Anatolia, and at a few centres in northwestern Iran and Armenia (Belli 1989; Kleiss 1981; Başgelen 1990), but are especially dense in Van Lake basin, i.e. the heartland of Urartu (Belli 1989; Belli 2001). 19 signs have been discovered in the Upper Anzaf Fortress (Fig. 3) and we have other examples from the centres to the east of Lake Van such as Edremit, Çavuştepe and Panaz. In the north of the lake, Deliçay and Çelebibağ have produced rock signs. They were also discovered in at Atabindi in Ağrı-Tutak in northeast Anatolia (Başgelen 1990), where it is possible to observe all the shapes. 11 rock signs at Pekerçiç, to 30 km east of Altın-tepe-Erzincan form the third biggest group in the region. Although Elazığ-Malatya, Tunceli and Bingöl are in the Urartian sphere, no centres in these regions have yielded rock signs yet.

The signs were carved after leveling the rock surface, with a depth ranging between 4-10 cm while and width is between 10-15 cm. The circular signs form the largest category to be followed by “U”-, “V”- and sickle-shaped groups respectively. The size appears to be standard: the circular signs are between 90 and 120 cm in diameter; most of them measuring around 110 cm. “V”- and “U”-shaped ones generally follow a standard size too. Their length varies between 60-70 cm and the width at their openings 50-60 cm. The sickle-shaped examples are usually 100-120 cm in length.

The Relationship between the Chariot Components and Rock Signs

Apart from a few archaeological finds, what we know about chariot components mostly come from the interpretations of depictions on reliefs and in other media. Chariots frequently feature especially on Urartian bronze work such as belts and shields¹. They also occur in Assyrian stone reliefs and bronze objects, which are more detailed in execution compared with Urartian examples. It is not surprising that both kingdoms, which are in constant cultural interaction, used similar techniques in warfare. In fact, the chariot depictions in the Near East and even in the Far East share some common characteristics (Littauer-Crouwel 1999).

The Urartians used two-wheeled chariots drawn by a pair of horses (Fig. 5-6). It is difficult, however, to discern most of the details, since the chariots were often executed in profile. Nevertheless, it is assumed that four- or six-spoked wheels smaller in size were in use during the early period, while larger wheels with eight spokes were produced in the Late Urartian Period. Although the wheel was probably made of two concentric rings, the outer ring being thicker, this detail does not appear in every scene, instead, thick wheels with single rings are encountered quite often. The felloe is generally thought to be made of two pieces, but the Assyrian depictions are not clear in this respect. It is also difficult to estimate the dimensions of the wheels, but the U-shaped clamps recovered from excavations, which are used to fasten the rings, give us some clue about the size of the wheels. These clamps are 13-15 cm in width and 5 cm in thickness (Fig. 6; Merhav 1991).

Another component of the chariot, which is partially seen in visual arts, is the pole. It is directly fixed to the axle and also supports the chariot body (Fig. 6; Özgen 1984; Merhav 1991). It makes a convex bevel as soon as it leaves the body and reaches to the yoke (Fig. 7-8). This peculiar shape was designed in order to position the chariot body parallel to the ground. Although the details of the yoke were not clearly depicted, it appears to be composed of concave parts that are mounted on the neck of the horse with terminals curving upwards.

Standard sizes were employed for each component. Anatolian carts manufactured in the last 20-30 years are the successors of an older tradition in type, dimension and accessories, except a few technological innovations (Küçükerman 2000). Wheel rings, spokes and the shape of the yoke survived without any remarkable development.

¹ For the Urartian chariot components see Özgen 1983, Özgen 1984, Merhav 1991, Gündüz 2002.

Circular signs: These are the most common “signs” (Fig. 2, 10/A), which obviously correspond to chariot wheels. The wheel is more difficult to make than other parts of the chariot. The process requires a mould in order to obtain the desired concave curve for the timber and to assemble several pieces for a complete wheel ring. Thus, the circular signs perfectly fit for wheel moulds. They are generally 90-110 cm in diameter, 10-15 cm in width and have a depth of 4-10 cm. Some are semi-circle in shape, and in some circular examples there are small openings. The regular shapes recall the wheel rings at first glance. The diameters of the genuine wheel rings recovered from the excavations in the Near East are very close to those of their modern counterparts (Littauer-Crouwel 1979). The Urartian wheels consisted of a ring and 4, 6, or 8 spokes, and were connected to each other by a wooden axle (Gündüz 2002). To judge by the clamps found the width of the wheel rings were between 13 and 15 cm. It is striking in this respect that most of the rock “signs” have a width of 10-15 cm and a diameter of 110 cm. Thus, in the light of the evidence and ethnographical references presented above, it may be assumed that the circular signs were probably used as moulds for the wheel rings (Fig. 2, 10/A). They would ease and speed the manufacture of the wheel rings. After softening with hot water or vapour, the pieces of timber were placed in circular grooves and gaining a circular shape when dried. The timbers were removed with special tools that were installed in the holes or small grooves beside the moulds. Then the ring, spokes and the nave were assembled to form a wheel. This technique was still being used in recent years in Anatolia. In Eskişehir, for instance, a single wheel ring softened in boiled water is removed from iron moulds (Küçükerman 2000).

I believe the function of these standardized and regularly carved circular signs can be clearly associated with the mass production of wheels of same thickness and width. Irregular circles seen in some centres with a diameter of 1.80-2.00 m, on the other hand, may have been used for less common components like the body parts of the chariot.

“V”- and “U”-shaped signs: Similarly shaped wooden components, called braces, provide the connection between the yoke and the pole (Fig. 5, 6, 10/A-C). They are placed on both sides of the axle in order to increase maneuverability and join with the pole narrowing towards the ends and find their counterparts in the V- and U- shaped rock signs.

There are also smaller, narrow-grooved V-shaped signs, which must be used as moulds for the spokes. (Fig. 5, 10/A). Spokes are wooden bars that are placed between the nave and the ring at regular intervals, which increase

the strength of the wheel. They can be manufactured in several ways, but our concern is one particular technique in which a softened straight timber is bent in the middle forming a double spoke (Littauer-Crouwel 1979). The bending angle can vary according to the number of spokes. For example, for a four-spoked wheel two pieces were bent at 90 degrees, and for a six-spoked one, three pieces were bent at 60 degrees. Then these were combined back to back forming a one-piece spoke array and fixed at the centre i.e. the nave.

Sickle-shaped signs: These "signs", also named as "hooks" or "sticks", perfectly correspond to the chariot parts which secure the connection between the axle and the pole, as implied by their size and type. They are alternatives to U- and V-shaped braces (Fig. 10/A-C)

In Urartian art, we can observe a straight and long timber coming out from under the chariot body and reaching to the pole with a convex angle (Fig. 5-7). The rock signs resembling a question mark are very suitable for this purpose. As far as we can understand from the depictions, the wheels of the Urartian chariots were placed at the very rear of the body and thus the axle. With this, the braces could also bear the weight of the chariot body (Özgen 1984; Merhav 1991: Fig.8.1). It is not clear from the depictions, however, whether they are used as single- or double-piece braces. Apart from their use in chariots, the sickle-shaped braces could have been applied to the agricultural implements such as plough.

Yoke: The above-mentioned V- and U-shaped moulds could have been employed in making yokes as well as braces (Fig. 10/A-C). Several three-piece yokes observed in the chariot depictions of the first millennium BC seem to support our point: Between the two U- or V-shaped wooden parts that are mounted on the necks or the horses, there is a third straight timber connecting them. Today, this type of arrangement can be seen in carts drawn by a pair of horses and there are several rock "signs" support this practice (Fig.10/A-B). A practical technique exists for making these parts: Two semi-circular grooves carved on rock, which are connected with a straight groove at their open ends, provide an ideal mould for their construction. Their width and length are close to those of the carts drawn by a pair of horses.

Other geometric signs: There are other rock "signs", whose functions cannot be easily identified, but must be used for the manufacture of various objects such as ploughs, chariot bodies or furniture. Some signs coincide with each other, which suggests a multi-functional purpose. Thus it is technically impossible to determine the exact purpose of some moulds.

Conclusion

When we take the dimensions and shapes of the “signs” into consideration, it becomes increasingly convincing to accept them as moulds for the manufacture of chariot parts. This is especially true for the circular “signs”, which were very carefully carved and whose sizes are very close to those of an actual wheel. The fact that these and most of the other signs are found together in the same area supports the thesis of mass production. It must be admitted, however, that not all the signs in the settlements are in the same shape and size, while it is possible that they may have been destroyed or are still under the soil. Since different techniques are applied in chariot manufacture we can assume that some parts were made in the workshops. As for the other unidentifiable signs, we can assume that they also have something to do with chariot manufacture or perhaps with furniture carpentry.

The chronological framework of the “signs” cannot be discussed here. At the centres where these signs exist, there are also post-Urartian remains which make dating rather difficult. Nevertheless, given that chariots played an important role in Urartu, the signs can be more or less securely placed in the Urartian period.

The distribution of the signs suggests a focus in the heartland of Urartu. Upper Anzaf Fortress in particular may well be a production centre in this respect, as well as Atabindi and Pekerç in the north. These workshops must have met the needs of the whole Urartian kingdom.

The technique of shaping timbers in moulds requires convenient forests and tree types. The fact that the “signs” occur only in the Urartian realm can explain this phenomenon. Although other Near Eastern powers such as the Assyrians and the Late Hittite kingdoms did possess considerable numbers of chariots, this technique seems to be peculiar to the Urartians.

It must be stressed that, mould technique is not the final process in chariot manufacture. In other words, it would be misleading to say that the chariot components were put in use as soon as they were removed out of the moulds. They must have been reworked and gone under some other processes until the desired shape was obtained.

Doğu Anadolu Bölgesi'nde "Anıtsal Kaya İşaretleri"ne Etnoarkeolojik Bir Yaklaşım

Urartu kalelerinin dışında, surlara yakın alanlardaki uygun kayalık alanlara oyulmuş çeşitli geometrik şekiller "anıtsal kaya işaretleri" olarak adlandırılmıştır. Van Gölü Havzası ve Kuzeydoğu Anadolu Bölgesinde daha yoğun olmak üzere Kuzeybatı İran'daki kimi merkezlerde de aynı türden işaretlerin varlığı bilinmektedir. Söz konusu işaretlerin anlam ve işlevleri konusunda kimi görüşler öne sürülmüştür. Dinsel içerikli anlamlandırmalar daha çok ağırlık kazanmış ve bilimsel makalelerde genellikle dinsel kült alanları olarak yorumlanmıştır. Urartu'nun gizemli kült törenlerine ev sahipliği yaptığı düşünülen bu "anıtsal kaya işaretleri"nden kurban kanlarının akıtılmış olabileceği düşünülmüştür. Urartu kalelerini dinsel yönden kutsamak ve tehlikelere karşı korumak amacıyla yapılmış olabileceği de öne sürülmüştür. Form ve boyut olarak standart bir karakter sunan bu işaretlerin buluntu yerleri, biçimleri ve işleniş tarzları, kanımızca bugüne değin anlamları konusunda öne sürülen açıklamalarla örtüşmemektedir.

Ahşap araba aksamalarına uygun biçimi vermek için yapılmış kalıplar olduğunu düşündüğümüz kaya işaretlerinin aslında oldukça geniş yelpazede kullanılmış olabileceği de göz ardı edilmemelidir. Genel anlamda söz konusu işaretlerin araba yapımı yanında tarım aletleri, mobilya vb. gibi belirgin kıvrımlara sahip keresteleri elde etmeye uygun olduğunu söyleyebiliriz. Özellikle araba yapımının en zor aşamasını oluşturan tekerleğin günümüze değin uygulanan yapım teknikleri göz önüne alındığında, bu oldukça düzgün dairesel oyukların aynı ölçülere sahip standart tekerlek üretimi için ne kadar uygun kalıplar olabileceği daha iyi anlaşılır. Diğer oyukların formları ve ölçekleri düşünüldüğünde, bir at arabasının üretimi için gereken temel parçaların hemen hemen tümünün kalıplarının aynı alanda bulunduğu gözlenmektedir. Burada söz konusu kalıpların araba aksamalarıyla ilgili olanları tartışılmıştır. Bunun yanında aynı alanlarda bulunan ve tanımlayamadığımız bazı şekillerin de temelde keresteye şekil vermek için kullanıldığı bizce en kabul edilebilir görüştür.

Söz konusu kalıpların kronolojisi burada çok fazla tartışılmamıştır. Bilindiği gibi bu kalıpların yer aldığı yerleşmelerde Urartu ve sonrasına ilişkin kalıntılar bulunabilmektedir. Bu nedenle belli bir tabakaya ait görülmeyen bu kalıpların kronolojisi de net değildir. Buna karşın at arabaları veya savaş arabalarının Urartu'da oldukça yoğun bir kullanım alanı olduğunu bilmemiz ve bunlarda kullanılan teknoloji bizi bu kaya kalıplarının Urartu Dönemine tarihlendirilmesi konusunda daha da cesaretlendirmektedir. İşaretlerin dağılımına baktığımızda merkezi Urartu bölgesinde araba üretiminin ağırlık kazandığı görülmektedir. Özellikle Yukarı Anzaf Kalesi başkent çevresindeki en büyük araba yapım merkezi olarak önerilebilir. Yine daha kuzeyde Atabindi ve Pekerç diğer önemli araba üretim merkezlerindedir. Bu atölyelerden bütün Urartu ülkesinin ve hatta daha uzak bölgelerin ath araba ihtiyacı karşılanmış olmalıdır.

Söz konusu işaretlerin dinsel anlamları üzerine öne sürülen fikirlerin bizce hiçbir arkeolojik, dilbilimsel ve etno-arkeolojik açıklaması yoktur. Urartu tasvir sanatında bu türden işaretlerin hiçbirine rastlanmaz. Ayrıca bu türden işaretlerin hiçbiri Urartu Dinsel yapıları veya açık hava kült alanlarının yakınında da yer almaz.

Bize göre, standart boyutlarda üretilmiş kaya işaretleri, birçok konuda yaratıcı çözümler üreten Urartu toplumunun pratik uygulamalarından birisi olarak, yani atlı araba aksamı üretimi için tasarlanmış kalıplar olarak görülmelidir.

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Fig. 1 Rock "signs" from Upper Anzaf Fortress (Belli 2001: fig. 2)



Fig. 2 A rock "sign" from Deliçay Fortress (Belli 2001: fig. 7)

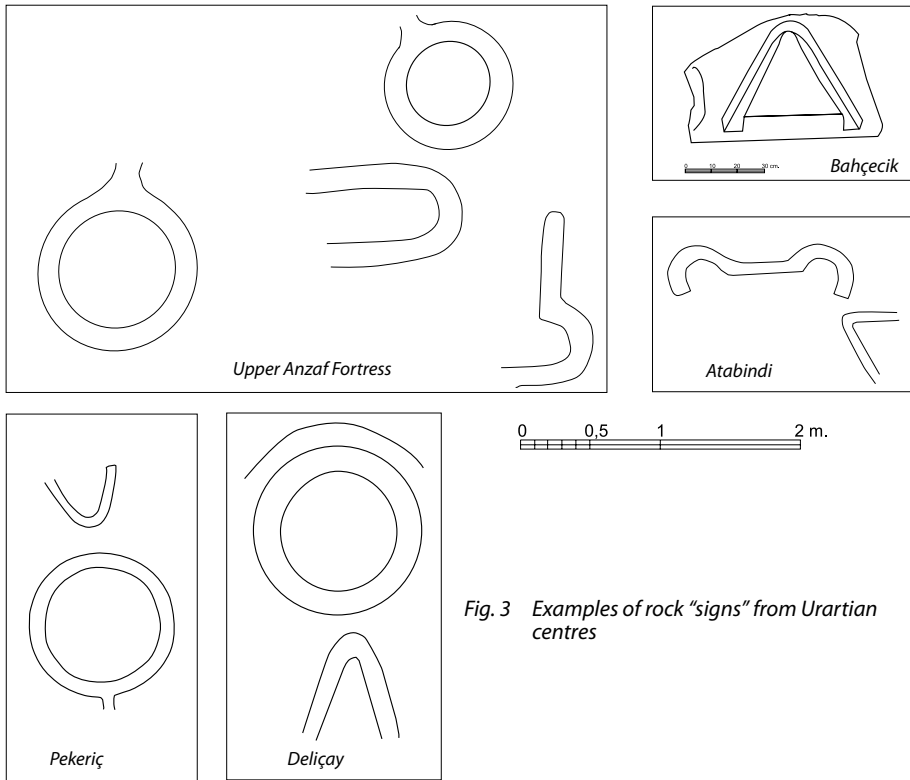


Fig. 3 Examples of rock "signs" from Urartian centres

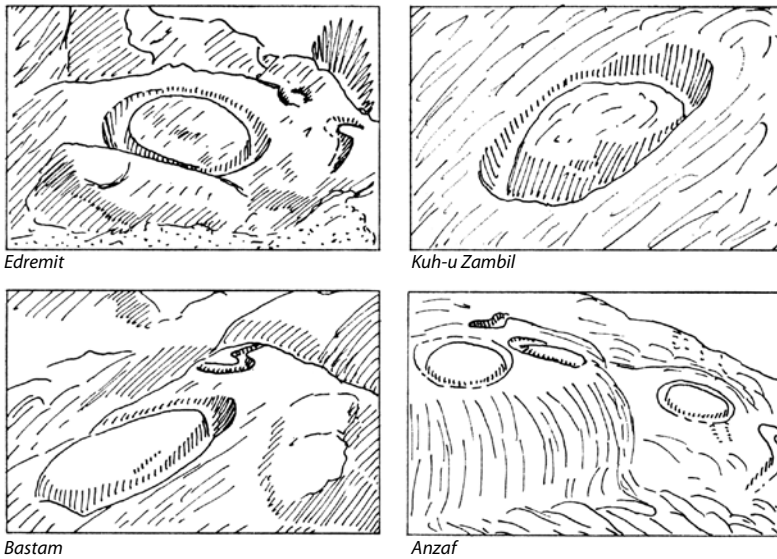


Fig. 4 Rock signs from Eastern Anatolia and Northwestern Iran (Kleiss 1981: abb. 2)

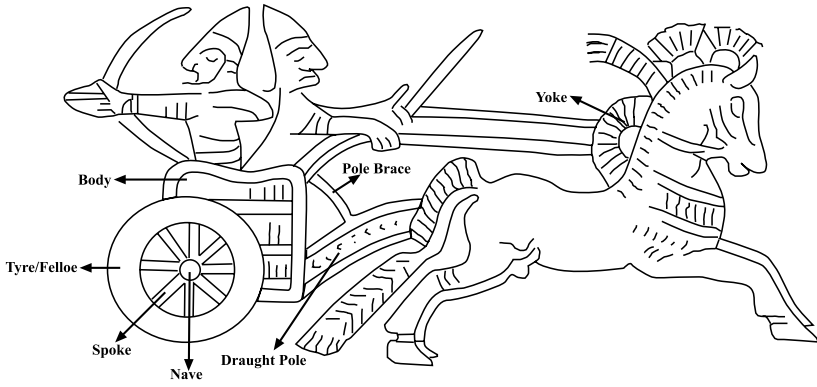


Fig. 5 Depiction of a chariot on an Urartian belt (Kellner 1991: taf. 7-19)

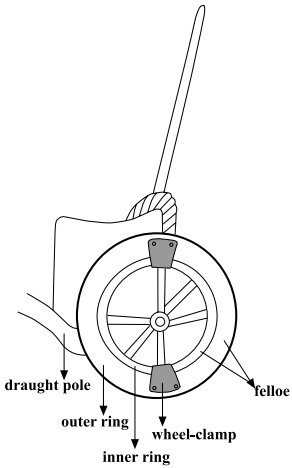


Fig. 6 Reconstruction of an Urartian chariot wheel (Merhav 1991: fig. 8.1)

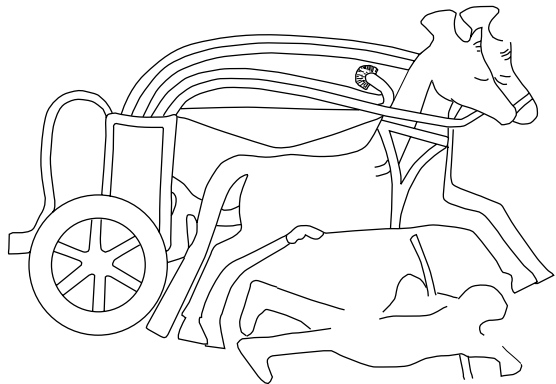


Fig. 7 A chariot depicted on a stone stele in Van Museum

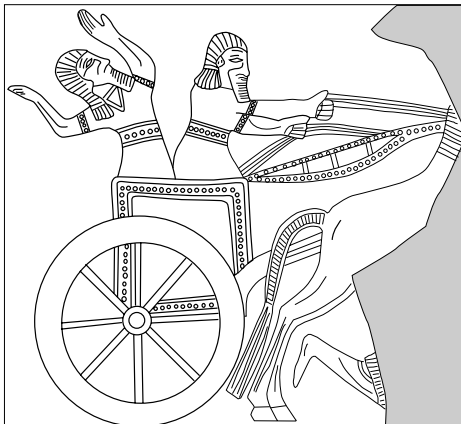


Fig. 8 A chariot figure on a shield from Anzaf Fortress (Belli 1999: fig. 74)

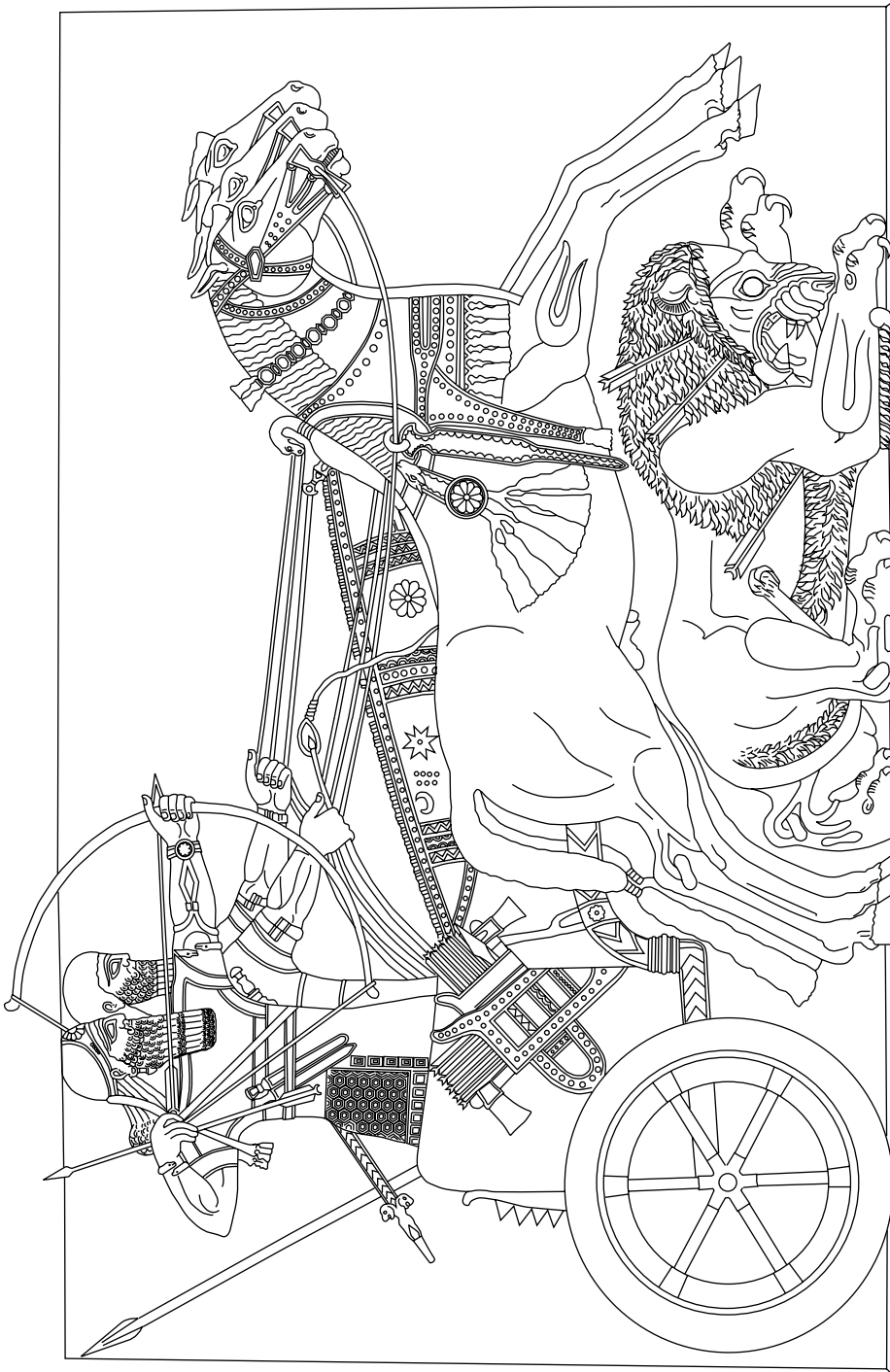


Fig. 9 Assyrian chariot, reign of Assurnasirpal II, Nimrud (K. Köroğlu, *Eski Mezopotamya Tarihi, İletişim Yayınları, İstanbul, 2006: 192*)

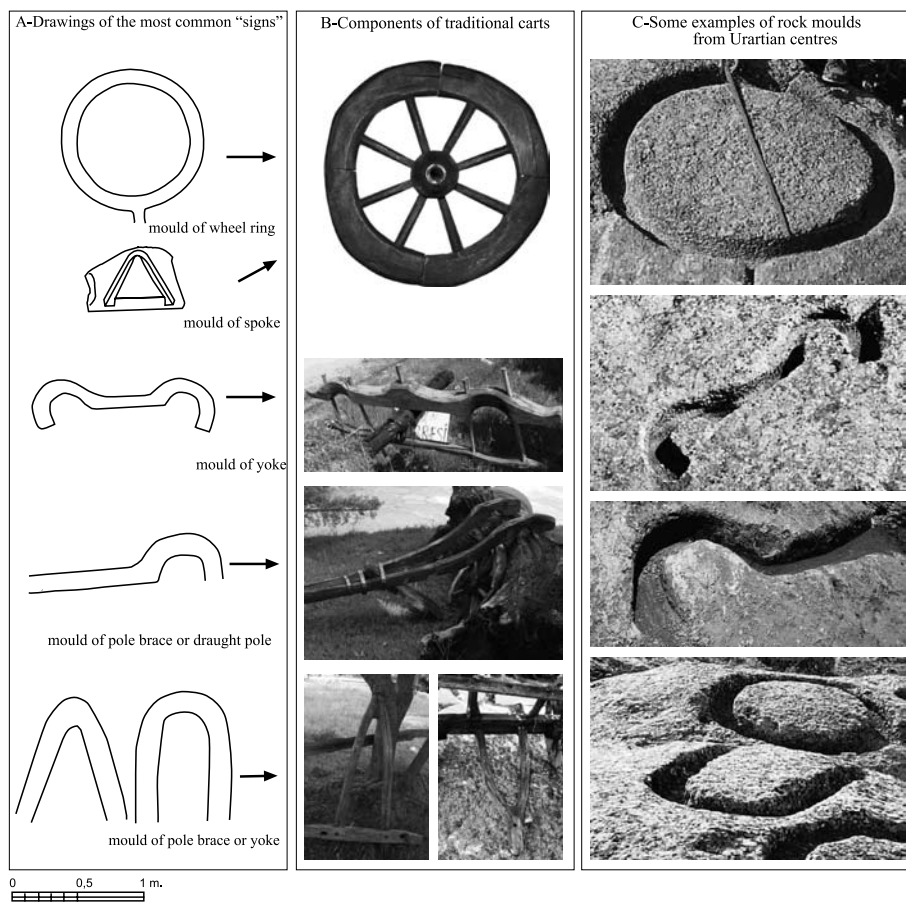


Fig. 10 A comparison between the rock "signs" and traditional cart components