

Also on the typology of bow-shaped objects and relevant issues

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Abstract

The bow-shaped object emerged in the Shang-Zhou Period of China and was used as rein holder for charioteers and riders to free their hands. It can be classified into two types: the narrow-backed and the wide-backed. Samples of the narrow-backed type were found at the waist of human skeletons or depicted on Mongolian deer stones, at the waist of human images in association with bow and bow case figures. It suggests that this type of bow-shaped object was tied to or hung on waist belts. On the other hand, wide-backed ones were usually brought to light from chariot boxes in chariot-and-horse burial pits and, in Mongolia and Central Asia, were seen in chariot images of deer stones, with the reins shown tied to or hung on chariot boxes. Judged from these discoveries, at least a part of wide-backed bow-shaped objects were used as rein holders tied to the front edge of chariot boxes.

Keywords: Bow-shaped objects; bronzes; chariots-history; rein holders; Shang and Zhou Dynasties

Preface

The “bow-shaped object” refers to the bronze implement with a bow-shaped back in the middle and two curved arms that made its first appearance in the Yinxu period and was used all along down to the earlier Western Zhou Dynasty. As shaped like a bow, it is often called “bow-shaped object” in relevant excavation reports and discussions. Thus the “bow-shaped object” became the special term for this kind of artifact.

Regarding to the function and using way of the bow-shaped object, there have been diverse viewpoints, mainly two opinions. The first view believes it to be concerned with the bow, taking it as a decorative and functional piece attached to the middle of the bow back. Its arguers are represented by Professors Shi Zhangru, Gao Quxun, Tang Lan and Huang Mingchong. The second view holds that these objects had no relation to bows and must have been hung to waist belts and used as rein holders for charioteers and riders to free their hands. The first advocator is Professor Lin Yun, who published a series of treatises with deep-going discussions; later,

Professors Sun Ji, Wuen Yuesitu and Wang Haicheng also argued this theory, though they are a little different in the interpretation of the specific using way of these objects. In recent years, some researchers made typological division of this kind of implement and dealt with its evolutionary trace.

I agree with the second viewpoint, taking the bow-shaped object as rein holder for charioteers and riders to free their hands and believing its form to have gone through an evolutionary process. Through a deeper examination of discovered samples I understood that bow-shaped objects may have been used in different ways corresponding to their varied shapes. Therefore a correct division of their shapes constitutes an important precondition for successfully revealing their using ways.

Forms of bow-shaped objects

Among the studies of bow-shaped objects the most detailed is that of Mr. Gao Xiangping (2007). His paper classifies them into the bell-ended, animal-ended and spoon-ended (or A, B and C) groups, of which the former two are respectively divided into Types A and B according to the height of the bow-elbows, and then further divided into several sub-types in the light of the arms' inward or outward inclination or vertical position. This classification roughly shows the changes of bow-shaped objects in chronological order, and on this basis, concludes the evolutionary process of these objects in the Shang-Zhou Period.

A further examination to the published bow-shaped objects reveals that both the bell- and animal-ended groups vary in the width of the back. Moreover, by analyzing these objects' more details and their respective burial environments it can be perceived that in all probability the bow-back width is closely related to the using way of these bow-shaped objects. Therefore I think that the typological classification of these implements should be made with the bow-back width considered as the first element.

According to the published data of bow-shaped objects, the whole body measures generally 30–40cm in length, and the bow-back is 2.5cm in width for the narrowest sample (M238:3 in Xiaotun) and 5.9cm for the widest (M40:11 of Qianzhangda Cemetery in Tengzhou). Meanwhile, for the narrow-backed, the differential between the widest place and the transitional points from the bow-back ends to the bow-arms is unremarkable, roughly equaling to ratio of 1.2:1, even the most noticeable not exceeding that of 1.5:1. But among the wide-backed ones, this differential is striking, often going

beyond the ratio of 2:1. Taking this ratio for the available samples as reference data, the present paper attributes the bow-shaped objects with the ratio less than 1.5:1 to the narrow-backed type, while those with the ratio above 2:1 are classified as the wide-backed type.

In the above-described two types of bow-shaped objects the bell-ended account for a large majority, but animal-ended exist in both types. The bell-ended objects sound in case of being shaken, while the animal-ended show no such quality. Both the narrow-backed

and the wide-backed can be further classified into an animal-ended subtype and a bell-ended one. Among the component parts of the narrow-backed type, in addition to the bell- and animal-ended sub-types, there is still a spoon-ended subtype (Figure 1). As some of the available finds are unclear in stratigraphical provenance and some are not scientifically unearthed, which are not appropriate for our discussion, the present papers will deal with 67 bow-shaped objects (Table 1).








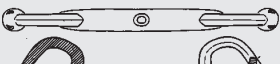



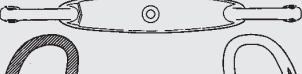






Narrow-backed type	Animal-ended subtype	 I. Fuhao Tomb:60	 II. Guojiazhuang M26:14	 III. Fuhao Tomb:1123
	Bell-ended subtype	 I. Fuhao Tomb:70	 II. M5:17 of Guojiazhuang Locus Southeast	 III. Huayuanzhuang M54:393
		 IV. Qianzhangda M131:16	 V. Taiqinggong M1:229	
Spoon-ended subtype	 Xiaotun M238:3			
Wide-backed type	Animal-ended subtype	 I. Huayuanzhuang M54:348	 II. Huayuanzhuang M54:286	 III. Taiqinggong M1:144
	Bell-ended subtype	 I. Xiaotun M40:19	 II. Huayuanzhuang M54:203	 III. Huayuanzhuang M54:280
 III. Qianzhuangda M132:6		 IV. Guojiazhuang M1:4	 IV. Jingjie M1:37	

Figure 1 Typological classification of the bow-shaped object.

Table 1 Statistics on the type, number, date and other information of bow-shaped objects

	Narrow-backed type animal-ended subtype		Narrow-backed type bell-ended subtype		Narrow-backed type spoon-ended subtype	Wide-bodied type animal-ended subtype		Wide-bodied type bell-ended subtype		Total	
	Yinxu	Other provenances	Yinxu	Other provenances		Yinxu	Other provenances	Yinxu	Other provenances		
Yinxu Phase II	I/4 II/1		I/3# II/2 III/1		1		I/2* II/1		I/1/1* II/1* III/3#	20/1	
Yinxu Phase III		II/1	IV/1/1	I/1/1 IV/1				II/1#* III/1/1#* IV/6/1	II/1/1* III/1	14/5	
Yinxu Phase IV			II/1 IV/1 V/1	IV/1				III/1 IV/3/1	IV/2*	10/1	
Transitional phase between Shang and Zhou				IV/1#					III/4 IV/4*	9	
Early Western Zhou				IV/6/1# V/3			III/1		III/1/1 IV/2/2	13/4	
Middle Western Zhou				IV/1						1	
Total	5	1	10/1	14/2	1		3	1	17/4	15/4	67/11

Note: The dates of the bow-shaped objects listed in the table are all quoted from the original reports. For each phase, the typological attribution and object number are indicated, respectively, on the left and right of the first slant (/); the numeral right to the second slant shows the number of the bow-shaped objects from horse-and-chariot pits. In the “Total,” to the left of the slant is the number of bow-shaped objects, while to the right, the number of those from horse-and-chariot pits in the left numeral. The “#” indicates that some bow-shaped objects in the respective sub-type bear traces of fastening leather strips at the joints between the bow-back ends and the bow arms; the “*” marks that some bow-shaped objects in the respective sub-type bear holes at the joints between the bow-back ends and the bow arms.

Fastening way of bow-shaped objects

Concerning the use of bow-shaped objects, a number of scholars have made arguments, and some relevant clues can be obtained from researches on deer stones. Based on the fact that deer stones often depict chronological features characteristic of the bronze weapons widely discovered in North China, Mongolia and South Siberia and Trans-Baikal of Russia, some scholars discussed extensively the date and features of the deer stones recorded in those regions. On the deer stones taken to be of the late Shang to early Zhou period, in addition to figures of daggers, socketed axes and shields, there are those of bows, bow cases (or quivers) and bow-shaped

objects. The bows are often depicted in a drawn position, sometimes also put in or without cases. The bow-shaped objects are represented hanging from waist belts (Figures 2:1 and 2:2). This sort of figures occurred also on deer stones after the Western Zhou through the Spring-and-Autumn Period (Figures 2:3 through 2:6). These carvings suggest that in normal times bows were often carried with their users in a drawn position, put in or without cases, and their association with bow-shaped objects on the same deer stones indicates them not to be identical in function. In the light of the figures carved on Mongolian deer stones as well as some bow-shaped objects discovered at the waist of human skeletons, Professor Lin Yun put forward that this kind of object must have been hung from the waist belt, and pointed out that “the fiber or leather

traces found on the object body and at the turning points of the object arms must be again the remains of cords for hanging the bow-shaped objects to waist belts (Lin 1998).”

While sorting his excavation data from the YinXu Site, Prof. Shi Zhangru (Shih Chang-ju) detected the rotten wood remaining in the bow-back groove of the bow-shaped object (RO1766) unearthed from Xiaotun Tomb M20. In the same object he discovered also two holes perforated, respectively, at the ends of the bow-body bottom and a piece of wood kept in one of the holes owing to the bronze rust left there. Moreover, on the bow-shaped object from Tomb M40, at the same place as the above-mentioned, the trace of a transverse dowel was observed in a triangular hole. So Professor Shi and his colleagues ascertained both the holes and the transverse dowels to be fasteners for firmly fixing the bow-shaped object to the bow back. However, they also noticed that such traces of rotten wood and transverse dowels were not discovered in all bow-shaped objects, nor such holes were made in all cases. According to these researchers, there must have been different fastening ways for varied types of bow-shaped objects (Shi 1970).

As shown in Table 1, both the narrow-backed and wide-backed types include bow-shaped objects with traces of tying leather strips between the bow-arms and the bow-back's ends. It indicates that both types contain bow-shaped objects fastened by tying leather strips at those points. In addition, a part of objects bear holes passing from the inner sides of the bow-arm bases through the bow back. But it is noticeable that these perforations exist only in the wide-backed type; they do not occur in the narrow-backed type.

As mentioned above, the joints between the bow-arms and the bow-back ends are just the force-bearing points, whose perforations can only decrease the strength at these points. So Shi Zhangru's taking them as a means of multi-fold fastening of bow-shaped objects is reasonable. These phenomena suggest that the wide-backed ones, or at least part of them, are different from the narrow-backed in using way. It is perfectly possible that the former were used as implements fixed to certain wooden devices by multi-fold fastening means of leather strips and wooden dowels.

Using way of wide-backed bow-shaped objects

In the wide- and narrow-backed types, the animal-ended subtype of object numbers ten, all from tombs or sacrificial pits, and none from horse-and-chariot pits, while the bell-ended objects are unearthed from either tombs or horse-and-chariot pits. The narrow-backed bell-ended objects number 24, of which three are from horse-and-chariot pits, accounting for 12.5% of the total; the rest are from tombs or sacrificial pits. The wide-backed bell-ended bow-shaped objects number 32, of which eight are from horse-and-chariot burial pits, accounting for 25% of the total, and 24 pieces from

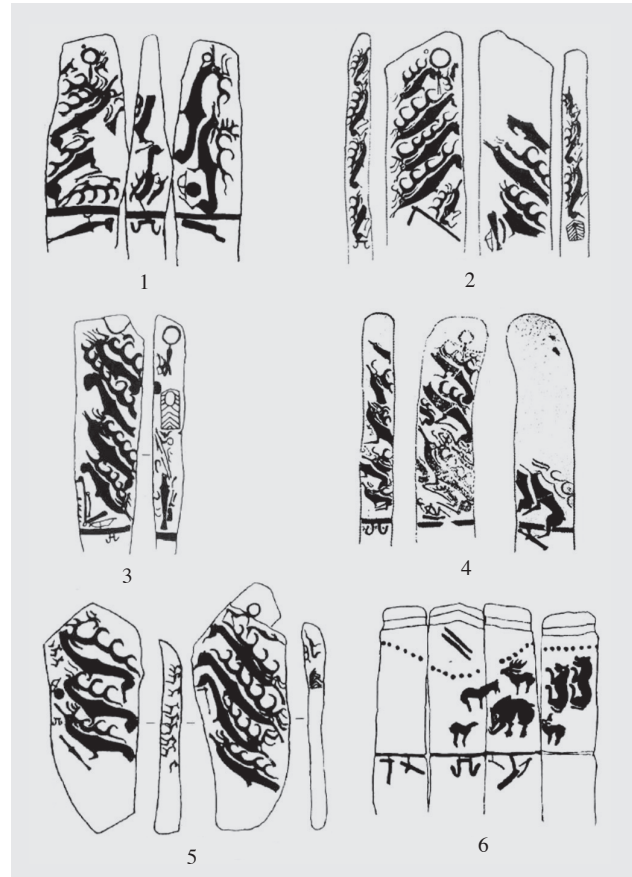


Figure 2 Bows and bow-shaped objects on Mongolian deer stones.

1. From Jart Somon, Khubsugul Aimag; 2. From Burentogtokh Somon, Khubsugul Aimag; 3. From Chjalmen Somon, Dzabkhan Aimag; 4. From Urdzat Somon, Bayan Khogor Aimag; 5. From Ihtamir Somon, Ara-Khangai Aimag; 6. From Talet Somon, Ara-Khangai Aimag. (1 and 2. Late Shang to early Zhou Period; 3, 5 and 6. Late Western Zhou to early Spring-and-Autumn Period; 4. Western Zhou Period)

tombs. The above data indicate that animal-ended bow-shaped objects are mainly from tombs, though bell-ended ones were also found among grave goods. Those from horse-and-chariot pits are all bell-ended, among which the wide-backed ones are more than the narrow-backed.

To take the provenance of bow-shaped objects for statistical analysis, among the 11 bow-shaped objects from horse-and-chariot pits, eight belong to the wide-backed type, accounting for 72.7% of the total, and among the 56 pieces from tombs and sacrificial pits, 24 are wide-backed, i.e. 42.8% of the total. It suggests that the wide-backed type tended to be put into horse-and-chariot pits.

The above-counted horse-and-chariot pits yielding bow-shaped objects total 11, of which ten contain human victims. Concerning the human victims' location and

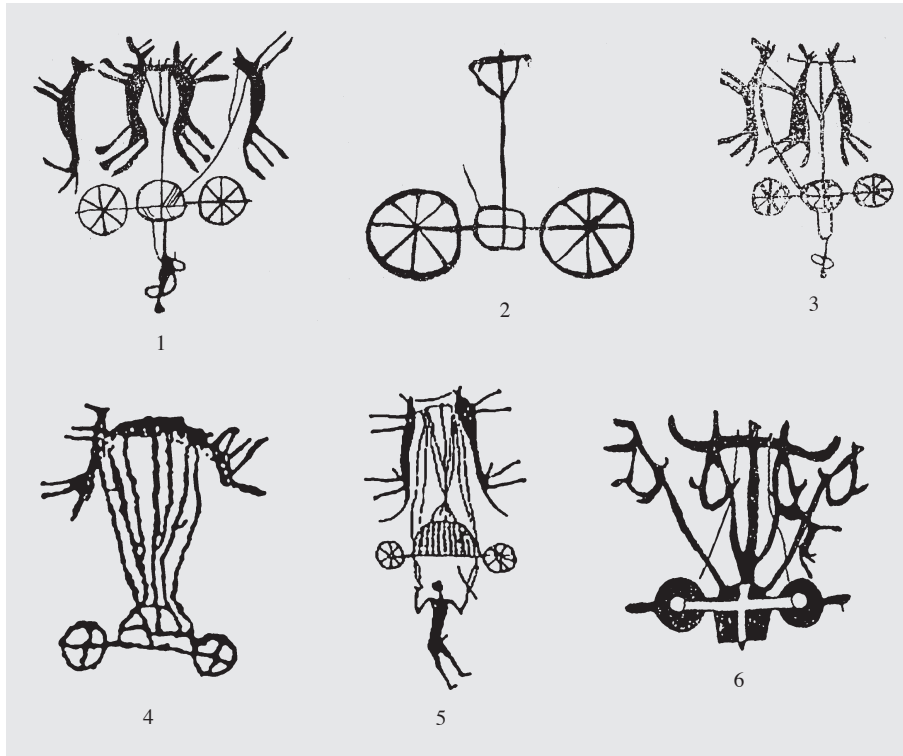


Figure 3 Chariot figures with reins in petroglyphs of Mongolia and Central Asia.
1–3. From Mongolia; 4 and 6. From Kazakhstan; 5. From Tajikistan.

position, apart from the skeleton laid in front of the two horses in the horse-and-chariot pit within the passage of Fushanqiao Locus North Tomb M1, all the rest are laid behind the chariots, in a prone position. Among the bow-shaped objects in the 11 horse-and-chariot pits, only that of Qianzhangda Tomb M45 in Tengzhou is put at the human victim's right shoulder behind the chariot box, and the two pieces in Xiaotun Tomb M20, respectively, on the right of the chariot box's forepart and to the right front of the box, while the rest (in nine pits) are all in the chariot boxes. Besides, there are three pits left beyond the statistics for the original account gave no detailed information on the yielded bow-shaped objects, which, however, lie in the boxes without exception.

The human victims in the horse-and-chariot pits must have been charioteers buried together with the horses and chariots, and, for an overwhelming majority, the bow-shaped objects of the horse-and-chariot pits are not put nearby the charioteers, but in the boxes instead. Taken into account the above-mentioned traces of rotten wood and remains of wooden dowels in the bow-back groove or bow-arms of some wide-backed bow-shaped objects, the bow-shaped objects from the horse-and-chariot pits and their like may have been used as a sort of implement fastened to chariot boxes.

Some scholars agree to the opinion that the bow-shaped object was closely related to chariot-drawing horses. Meanwhile they also pay attention to the traces of rotten wood in the bow-back groove of some unearthed bow-

shaped objects. In the light of the claw-shaped rein buckles *juena* 轂 軛 (for tying the inner reins of the two middle horses) on the horizontal bar for armrest of the two bronze carriages unearthed from the Qin Shihuang's Mausoleum, they further put forward that the bow-shaped object must have been tied to the upper part of the front rail of the chariot box for hanging the inner reins of the middle two chariot-drawing horses by "tight-fitting" it to the horizontal bar in the upper part of the front rail of the chariot box and "then tying the two parts together with cords." However, as the Qin Mausoleum bronze carriages are too far away from the dates of the bow-shaped objects, and the *juena* 轂 軛 is completely different from the bow-shaped object in form, this comparison seems not providing forceful evidence for the advocators' theory.

However, some petroglyphs discovered in Central Asia and Mongolia and dated as the Shang or Western Zhou Dynasties provided chariot figures showing reins tied to chariot boxes (Figure 3), where four or two drawing horses are represented bearing figures of poles between them, as well as straight lines drawn from the horse neck or body to the front of chariot boxes, which must be figures of reins. Although the tying way cannot be discerned, it is sure that there was the practice of tying reins to the front part of chariot boxes in the then Central Asia and Mongolia. Scholars pointed out that Chinese chariots originated in the vast region between Central Asia and the Central Plains of China. It is highly possible that the way of fastening reins to chariot boxes was introduced into China along with chariots. In the light of the above-described various phenomena shown by some wide-backed bow-shaped objects, it can be inferred that this type of bow-shaped object was used in the way of tying them to the front of chariot boxes for reins to be hung on. Moreover, the appearance of wide-backed bow-shaped objects in tombs also indicates that their entombment must have been associated with the custom of using horse and chariot fittings as grave goods.

Conclusions

The bow-shaped objects emerging in the Shang-Zhou Period and used as rein holders for charioteers and riders to free their hands can be classified into the narrow-

backed and wide-backed types according to the width of the bow-back.

The narrow-backed type must have been hung from waist belts as proven by the samples discovered at the waist of human skeletons or in association with bows and bow cases, as well as their figures carved on the Mongolian deer stones.

The wide-backed type, or at least part of it, must have been used in the way of tying them to the front of chariot boxes for reins hung on. It can be inferred from the proofs that such wide-backed bow-shaped objects were often put into horse-and-chariot pits not in association with charioteer victims but inside chariot boxes instead and that in Central Asian and Mongolian petroglyphs reins are depicted as tied to the chariot boxes. This rein-tying way may have been spread into China along with chariots.

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Postscript

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