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THE HAN EMPIRE AND THE HELLENISTIC WORLD: PRESTIGE GOLD AND THE EXOTIC HORSE

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ABSTRACT

With an increasing demand for luxury gold during the Han period (206 BCE-220 CE), exotic techniques and materials were used to create elite objects fashioned in styles that reflected contact with foreign lands. Here a group of gold artefacts recently excavated from the royal Western Han tombs in central China, is discussed, with a focus on the decorative techniques of hoof-shaped gold and other artefacts. In previous studies these objects were considered to be either emblems of immortality in Chinese tradition or clan symbols of the Xiongnu people. Drawing from archaeological record and epigraphic evidence, it is argued that the filigree work from the royal Western Han tombs can be attributed to the influence of Hellenistic art. The portable XRF analysis shows that the Han period filigree works were made of refined gold, while microscopic (optical and scanning electron microscopy) examination indicates that the twisted wire of the Dalian dragon buckle was produced with strip-twisting technique that was very common in the Hellenistic jewellery. The interdisciplinary study of prestige gold provided a new interpretive framework for understanding trans-cultural contact between Han China and the Hellenistic world. The contextual analysis of the gold artefacts with foreign features presented in the current paper shows that the quest for exotica along with the desire for “heavenly horses” among the ruling elites acted as the driving force that led to an unprecedented extent of imperial expansion of the Han court in Central Asia, as well as the establishment of a vast trading network during the first century BCE.

KEYWORDS: Classical Age, Han China, Hellenistic, Prestige Gold, Filigree, Heavenly Horse, Exotic, Central Asia

1. INTRODUCTION

“The heavenly horses have arrived from the Western frontier,
Having travelled 10,000 li, they arrive with great virtue,
With loyal spirit, they defeat foreign nations,
And crossing the floating sand dunes, all barbarians succumb in their wake”.

-- “The Treatise on Music” (*Shiji* 24, 1178)

Wu Di, a charismatic and daring emperor of Han China (r. 157-87 BCE) who sent envoys westward to Ferghana, the steppe region of north central Eurasia in 103 BCE, composed this poem with great joy upon obtaining horses of a notably superior breed from regions in the far west. The “heavenly horses” from the Ferghana Valley in Central Asia described in Sima Qian’s *Shiji*, were well-known for their hardiness and larger size. In the late second century BCE, the Han court sent two armies over 10,000 km and to fight a war with the rulers of Ferghana and Bactria, in attempts to obtain them. In the end the Han’s army obtained several thousand horses. In the late first century BCE, as the *Hanshu* describes, Emperor Wu ordered that the name of gold coinage be changed to *linzhi* (*qilin*-hoof) and *mati* (horse-hoof), to match auspicious omens he had seen in a vision: a white *qilin* uni-

corn and a “heavenly” horse. Centuries later, it transpired that the story about the hoof-shaped gold and heavenly horses was not merely legend. During 2011 and 2020, a royal Western Han tomb in Nanchang, Jiangxi province was excavated, and seventy-three hoof-shaped gold ingots decorated with delicate filigrees (Fig.1a) were found to be buried with the Marquis of Haihun (92-59 BCE), who was the grandson of Emperor Wu (Chinese Academy of Social Sciences 2020:4-16). These gold ingots were considered to be either emblems of immortality in the Chinese tradition (Wei 2017:105-112) or clan symbols of the Xiongnu people (Liu 2017:112-125). An elemental analysis recently undertaken by Jiangxi Provincial Institute of Cultural Relics and Archaeology and Peking University provides useful information about metal composition. The portable XRF analysis shows that the hoof-shaped gold artefacts were made of refined gold composed of a very high percentage of gold (Jiangxi 2020:41-62). Regrettably, however, a detailed study of the manufacturing techniques applied is lacking. This current research thus arose in response to the need to understand production techniques of Han period gold work with unknown origins. Specially, this paper discusses the interplay between people and material objects in the production and consumption of luxury gold during the imperial expansion of the Han court in Eurasia.



Figure 1a. Hoof-shaped gold ingots and discs found in the outer chamber of the tomb of Marquis Haihun. After Chinese Academy of Social Sciences 2020: 6.



Figure 1b. Gold belt buckle from Yanqi, Xinjiang. After National Museum of China 2002: 260.

Filigree is a delicate decorative technique that involves applying plain or decorative wires to a flat or rounded surface. The wire can be arranged in a straight line, in twists, or in plaits. Such a technique had a long tradition in Mesopotamia, Syria and Asia Minor (Ogden 1982), with elaborate decorative wires having been found in Greek, Scythian and Etruscan gold jewellery, but rarely seen in central China before the second century BCE. One of the subtlest uses of decorative techniques in Han period gold work can be seen on the famous gold belt buckle (Fig. 1b) from Yanqi (Xinjiang Uyghur Autonomous Region) (Han 1982). Here, the one large and seven small dragons are composed of various large grains joined by wire and set with turquoise, the remaining area being filled with tiny granules. Similar work in the joint use of filigree and granulation technologies was also seen in the decorations of the gold polyhedral beads discovered in the wealthy burials in Hunan, and in the coastal sites in Guangxi and Guangzhou dated to a period spanning from the first century BCE to the fifth century, connecting the exotic gold to maritime trade with countries in South and West Asia (Sun 1999:69-80; Qi 2009:111-132).

Rather than seeing these objects as direct imports, this paper aims to draw attention to the transfer of technology and ideas, especially that concerning luxury crafts such as gold artefacts which are often small, easily transportable, and may be used to express status and prestige. In ancient societies, the ownership of objects of distant origin was often associated with access to esoteric knowledge, which, in turn, conferred prestige and power (Helms 1988), some key questions therefore arise what role did foreign materials, techniques, and artistic styles play in the way these objects acquired value in a new context? The study takes an interdisciplinary approach to ancient gold-making technologies with a focus on the filigree

work found in the tomb of Marquis Haihun in Nanchang and other elite tombs throughout the Han Empire. It first examines the technical and ornamental details of filigree work in the Han period, and argues that the peculiar design of decorative wires may be attributed to the influence of Hellenistic art. Then, it discusses how foreign objects and technologies from the far west were acquired and transformed into prestige gold production, and incorporated into local beliefs and ideas. In the last section, this study considers the roles of foreign envoys and exotic horses as important carriers of new ideas and technologies, in light of archaeologically recovered texts. In particular, the bamboo manuscripts discovered at a post house at Xuanquan in Gansu Province elucidate upon Han Chinese interaction with the Hellenized cities and states in Central Asia.

2. ARCHAEOLOGICAL EVIDENCE AND ANALYSIS

The necropolis of Marquis Haihun was uncovered on Guodun Hill in Datangping Township, Nanchang City of Jiangxi province (Map 1). The cemetery of 40,000 square meters was excavated between 2011 and 2016 and found to comprise two main tombs, seven dependent burials, and one horse and chariot sacrificial pit. Tomb 1 belonged to Liu He (92-59 BCE), whose status was identified through a jade seal and a few inscribed grave goods (Jiangxi 2016: 45-62). Namely, Liu He was a grandson of Emperor Wu, and who was enthroned as emperor in 74 BCE but deposed after only 27 days. He became known as the Marquis of Haihun. Despite his misfortune, Liu He succeeded in bringing with him pieces of Han imperial wealth from the capital and took these to the grave; his tomb yielded more than ten thousand burial goods, many of which represented the finest craftsmanship and visual sophistication in Western Han

art. Amongst 478 gold artefacts, a group of 73 gold ingots in the shape of horse hooves was the most remarkable discovery (Fig. 2a). These hoof-shaped ingots can be dated to the first century BCE, along with the other gold discs buried in this tomb. Four gold discs (Fig. 2b) bore the following inscriptions: “Nanfan Haihun hou chen He Yuankang sannian zhoujin yi jin [In the third year of Yuankang, [your servant] Marquise Haihun [Liu] He of Nanfan paid one-jin gold ingot as imperial tribute]”, suggesting that the date of manufacture was no later than 63 BCE. These gold ingots were known as “*mati* gold (horse hoof)” and “*linzhi* gold (unicorn foot)” owing to their hoof-shaped designs, as described in Han dynastic history. While the designs are typically Chinese, the manufacturing techniques, that is, a variety of decorative wires are purely foreign.

Decorative wires became a familiar feature in central China no later than the second century BCE, as testified by the gold ornaments discovered in the Western Han royal tombs. A number of gold plaques and buttons decorated with thin wires and tiny granules were found in the royal tombs of the Western Han period, including the tomb of King of Jiangdu (d. 128 BCE) in Xuyi, Jiangsu province (Nanjing 2013:25-66), the tomb of the king of Zhongshan (d. 122 BCE) in Mancheng Hebei province (Mancheng 1978), and the tomb of king of Chu in Xuzhou, Jiangsu province (Xuzhou 2011). In addition to the Nanchang find, a group of hoof-shaped ingots recovered in a royal burial at Dingxian in Hebei province (55 BCE) also bore

evidence of a variety of filigree work (Fig. 2c). The tomb occupant has been identified as Liu Xiu, the king of Huai in the Zhongshan kingdom (Hu 2018: 45-62). The accumulation of prestige gold in these high-ranking tombs indicates the general aristocratic character of the tombs' occupants.



Map 1 Location of the tomb of Marquis Haihun, Nanchang, Jiangxi Province. Drawing by the Author.



Figure 2a. Inner coffin and 2b. Gold disc with inscription from the tomb of Marquis Haihun. After Jiangxi 2016: 52.

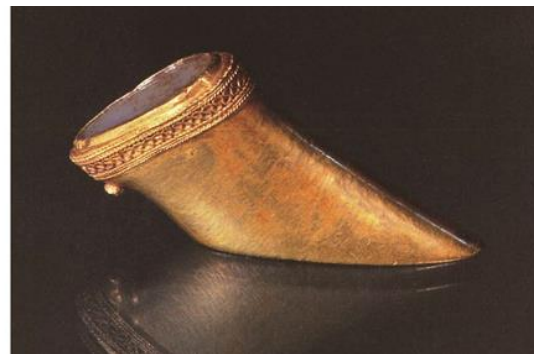
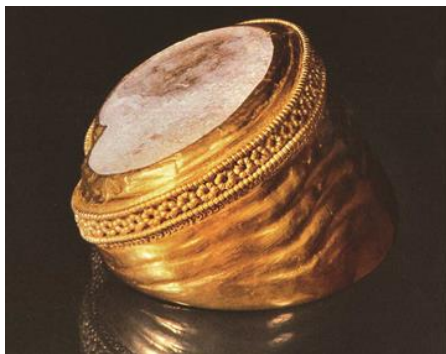


Figure 2c. Hoof-shaped gold from the tomb of King of Huai of Zhongshan kingdom, Hebei. After Yang 2004: 138.

2.1. Technical and ornamental details of the hoof-shaped gold

The 48 horse-hoof gold ingots recovered from the tomb of Marquis Haihun were of two dimensions, placed in two lacquer boxes in the northern compartment of the main chamber and the outer coffin of tomb 1 at Nanchang, with some bearing marks of rank quality, such as “上 upper”, “中 middle” and “

下 lower”. The hollow ingots were made by casting, and wave-like patterns passed around the hoof-shaped body; they were probably punched on the reverse side (Jiangxi 2016:45-62).

The top of the ingots was originally embellished with a small glass plate. At least five different types of decorative wires can be recognized under close examination: a. plain wire; b. twisted wire; c. corrugated wire; d. helicoid wire; and e. beaded wire.

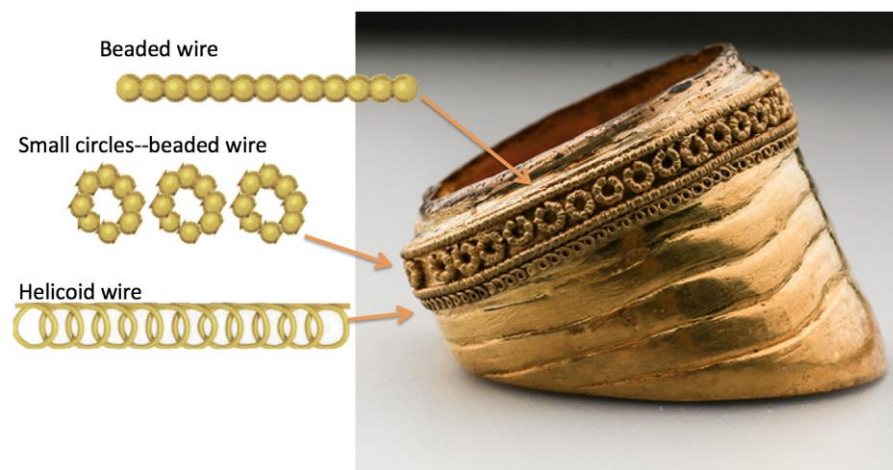


Figure 3a. Decorative wires (Type A) of Nanchang hoof-shaped gold. Initial wire drawing by Jack Ogden, after Ogden 2005: 184. Modified by the author.

Plain wire was used as a basic ornamental element of filigree work. Also called circular cross-section wire, the plain wire was often strip-twisted, whereby a thin strip of hammered gold is slowly twisted tighter and tighter until it forms a wire with a rounded cross-section. Such a method was commonly used in making gold wires in ancient China (Bunker 1997:94-95; Ogden 1991:95-105). Two plain wires could be twisted together to form a rope pattern, and two such ropes with twists going in the opposite direction were often placed side by side to produce a herringbone design, as seen in the wirework of the smaller-size hoof gold found in the tomb of Marquis Haihun (Fig. 3a). A plain wire could be bent to form a corrugated shape (Fig.3b) or flattened helicoids. Such patterns could not easily be made freehand, but were probably made with specific tools like two spherical wooden sticks, and a metal block studded with two pins around which the wire was bent. In this way, any pattern could be exactly repeated.

Beaded wire appears as a line of small beads. The visual effect of beaded wire around the rim of hoof gold is similar to granulation even though they were

made with different techniques. The earliest example of beaded wire dates from 14th-13th century BCE Egypt. This technique was more common with Greek jewelry in the sixth--second centuries BCE, and was particularly evident in the high quality gold artefacts of the Hellenistic period, such as the gold earrings found in the ancient city of Rhodos in the Aegean Sea (about 408 BCE) and the Macedonian tombs in Derveni, Black Sea region (Filimonos and Giannikouri 1999: 205-250; Dági 2013:85-103). It should here be noted that, to date, it remains unclear how the beaded wire was actually made and what tools were used in antiquity, as little evidence of the latter has been found. Textual sources from the Medieval period suggest that making beaded wire required specific tools. For example, a beading tool described by Theophilus Presbyter in the twelfth century consisted of two small rectangular grooved blocks of bronze or iron (Hawthorne and Smith 1979: 88-89). Gold wire was placed between the blocks which were then bound and hammered together, forcing the wire to take on the imprint of the patterned grooves (Tamla and Varkki 2009:36-52).

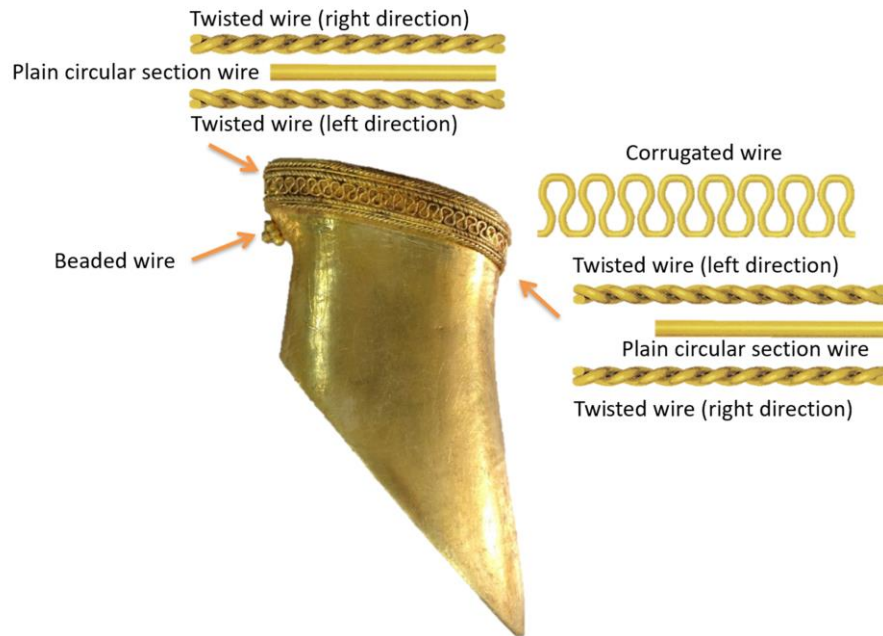


Figure 3b. Decorative wires (Type CI) of Nanchang linzhi gold.
Initial wire drawings by Jack Ogden, after Ogden 2005: 184. Modified by the author.

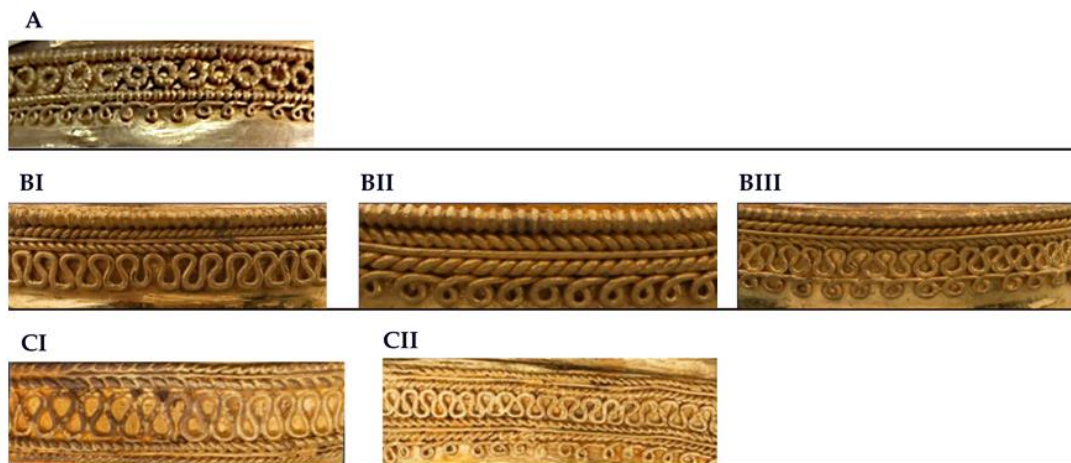


Figure 3c. Five types of filigree designs on the hoof-shaped gold in the tomb of Marquis Haihun.
After Yang 2018:103. Modified by the author

Based upon a variety of decorative wires, the gold hoof designs can be separated into three major categories here (Fig. 3c):

Category A consists of 17 larger size pieces of *mati* gold rimmed with beaded wire, where the space between the wire settings is filled with a cluster of small circles. Underneath the beaded wire can be seen filigree work made by a helicoid wire.

Category B includes 31 small-size gold ingots that can be separated into three subtypes in terms of different filigree patterns. Each pattern consists of five or six decorative wires: BI is bordered by a beaded wire around the rim. On the upper register, a round wire and two twisted wires are arranged in a herringbone pattern. The lower register is decorated with a corrugated wire. BII is almost identical to BI, but the

corrugated wire is here replaced by a helicoid wire. BIII has a similar design to BI, but is additionally decorated with a strand of helicoid wire underneath the corrugated wire (Table 1).

Category C consists of 25 slender ingots, with a strand of beaded wire imitating a granular pyramid stylistically highlighting the fetlock. CI is decorated with two pairs of doubled braided wires. Each block is composed of a round wire flanked by right-twisted and left-twisted wires. A strand of single corrugated wires fills the space between the doubled braided wires. CII has a similar design to CI, and is additionally decorated with a strand of helicoid wires at the bottom (Table 2).

Table 1 Decorative wires of the mati-gold of Nanchang

Type	Quantity	Mark	Beaded wire	Twisted wire (right)	Plain circular wire	Twisted wire (left)	Helicoid wire	Corrugated wire
A	9	upper	3				1	
	4	middle	3				1	
	4	lower	3				1	
BI	12	upper	1	1	1	1	1	
	2	middle	1	1	1	1	1	
	1	lower	1	1	1	1	1	
BII	6	middle	1	1	1	1		1
	2	middle	1	1	1	1		1
	3	lower	1	1	1	1		1
	2	lower	1	1	1	1		1
BIII	1	upper	1	1	1	1	1	1
	1	middle	1	1	1	1	1	1
	1	none	1	1	1	1	1	1

Table 2 Decorative wires of the linzhi-gold of Nanchang

Type	Quantity	Mark	Twisted wire (right)	Plain circular wire	Twisted wire (left)	Helicoid wire	Corrugated wire
CI	12	upper	2	2	2		1
	4	middle	2	2	2		1
	3	lower	2	2	2		1
	1	none	2	2	2		1
CII	1	upper	2	2	2	1	
	4	middle	2	2	2	1	

2.2 Elemental Composition

Seventy-three hoof-shaped ingots from the Nanchang site were analysed by Peking University using Niton X13t950 portable XRF (X-ray fluorescence) spectrometer. The results show that the three types of gold ingots, namely, the larger-size and smaller-size

mati-gold, and the linzhi-gold from the tomb of Marquis Haihun are similarly composed of a very high percentage of gold (98.0-99.5% Au) and a much lower percentage of silver (0.2-1.6% Ag). Each type was found to have a very similar metal composition (Fig.4a), with the data further indicating the use of refined gold (Jiangxi 2020: 41-62).

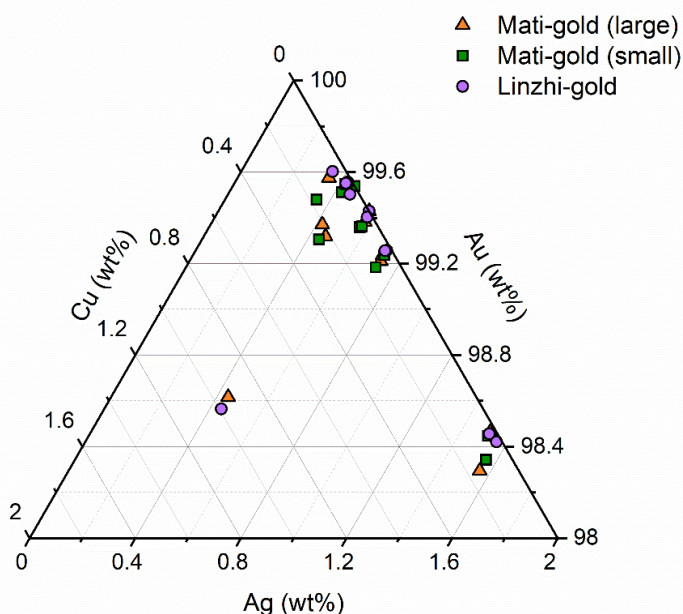


Figure 4a. Ternary diagrams showing the composition of the samples of the tomb of Marquis Haihun: Cu/Au/Ag. Drawing by Tan, P. P.

To date, an elemental analysis has only been conducted on the following four comparable artefacts recovered from Han period tombs:

Sample 1. A gold belt buckle decorated with ten dragons, manufactured using granulations and filigrees, found in the late Western Han tomb in Dalian, Liaoning province (Tan 2019: 106-115), northeast China (Fig.4b).

Sample 2. A gold belt buckle decorated with seven dragons recovered from Seogram-ri Tomb 9 in Pyeongyang, Korean Peninsula (Fig.4c). This area belonged to the Lelang commandary under the control of the Han court between the late second century BCE and the second century CE (Ro and Yu 2016: 1-16).

Sample 3. A gold polyhedral bead (Fig.4d) found in a Western Han tomb in Guangzhou in south China (Guangzhou 2020: 4-18).

Sample 4. A gold polyhedral bead found in Tomb 2 of Duurlig Nurs (Fig.4e), Mongolia (Yu 2012: 175-184).

The compositional data here reveal that the Han period gold objects from the above five archaeological sites contained a higher percentage of gold (above 95% on average). The Nanchang hoof-shaped ingots were found to be composed of the highest percentage of gold compared with the remaining samples while the two dragon belt buckles from Dalian and Lelang respectively had a similar percentage of silver (Fig.4f).



Figure 4b. Gold belt buckle 01 found in Dalian.
After Dalian 2019: 60.



Figure 4c. Gold belt buckle 02 found in Lelang.
After National Museum of Korea 2018:71



Figure 4d. Gold polyhedral bead 01 found in Guangzhou.
After Guangzhou 2020: 4-18



Figure 4e. Gold polyhedral bead 02 found in Duurlig Nurs.
After Yu 2012: 177

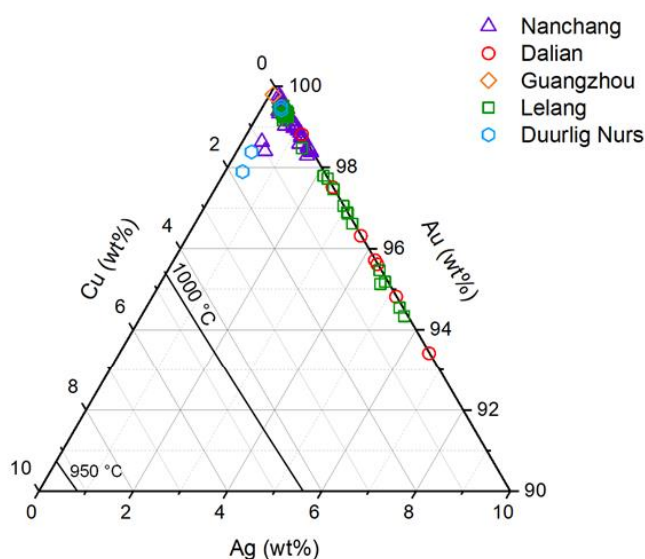


Figure 4f. Ternary diagrams showing the composition of the sample analysed: Cu/Au/Ag. Drawing by Tan, P.P.

In the use of some particular filigree technologies, there were found to be certain decorative wires in common between the filigree work of Nanchang and that of other sites. Both twisted and corrugated wires of Haihun gold were also seen in the two dragon buckles from Dalian and Lelang. In addition, regional differences were evident in ornamental details. The dragon belt buckle from Lelang was found to be bordered with a variety of filigree work, comprising a twisted wire, a corrugated wire and a plain round wire, while the Dalian buckle was edged by a twisted

wire and a plain round wire, then filled with small lozenges created by small strips and inlaid with turquoises. In the central area there is a big dragon, composed of larger granules and structured with round wires. These belt buckles were considered to be local productions under governmental control given their limited distributions in the burial sites belonging to local rulers in Chinese borderlands (Guo 2020: 4-18; Xing 2017: 45-71). Judging from the different artistic styles and technical features, these objects were not necessarily made in the same workshop.

Table 3 Different soldering techniques used for Han period filigree work.

Sample	Object type	date	Archaeological site	Soldering technique	Source
1	Dragon belt buckle 01	about 1 st c. BCE	Dalian, North China	Autogenous welding	Tan 2019
2	Dragon belt buckle 02	about 8 CE	Pyongyang, Korean Peninsula	Copper colloidal fusing	Ro and Yu 2016
3	Polyhedral bead 01	2 nd c. -1 st c. BCE	Guangzhou, South China	Au-Ag alloys brazing	Guangzhou 2020
4	Polyhedral bead 02	1 st c BCE	Duurlig Nurs, Mongolia	Copper colloidal fusing	Yu 2012

Filigree work requires highly skilled soldering techniques. In antiquity, three kinds of soldering techniques were used: autogenous welding, that is, the welding of element together by heat alone; binary Ag-Au alloys brazing or ternary Ag-Au-Cu alloys brazing; and copper colloidal fusing (Robert 1973: 112-119). The existing data showed that both autogenous welding and brazing were employed to make decorative wires in north China from the fourth century BCE to the tenth century CE while copper colloidal fusing was more common in central Asia and in far west to the eastern Mediterranean (Parrini and Formigli 1982:

119-121). The XRF results show that different soldering techniques were applied to join the decorative wires in samples 1-4, as shown in Table 3. The data provided by Peking University show that the Nanchang hoof gold seemingly used Au-Ag alloys brazing, as also commonly used in manufacturing the polyhedral bead found in Guangzhou. The Au-Ag or Au-Ag-Cu brazing technique was often applied to gold granulations found in the Warring States period tombs (fourth-third century BCE) in northwest China (Huang 2013: 63-74; Tan 2016: 85-91), while the gold samples from Lelang and Mongolia employed copper

salt for soldering which had a long history in the Mediterranean world and Central Asia. The Dalian belt buckle used autogenous welding (Tan 2019:106-115), distinguishing itself from other samples, and it remains uncertain whether such a technique was a local invention due to the lack of comparable examples.

A detailed study of the Dalian gold belt buckle provided useful information about the manufacturing techniques of filigree work in the Han period (Tan 2019: 106-115). The microscopic examination (3D digital microscope, KEYENCE VHX-2000, Japan) shows that the gold wire of the belt buckle was made using a strip-twisting technique, as indicated by the long spiral “seams” (Fig.5a). Such technical features can

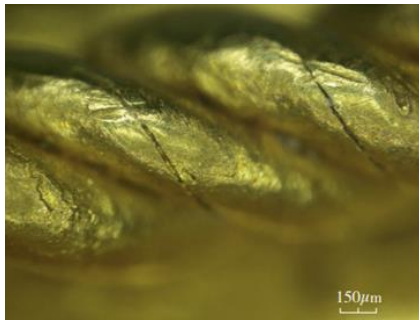


Figure 5a. Microscopic photo of twisted wire using strip-twisting technique, belt buckle found in Dalian. After Tan 2019:110, fig.9.

also be seen in the gold wire detail in a pair of Hellenistic earrings (Fig.5b) from the Museum of RISD (Hackens and Winkes 1983:196). At the time, it was not easy to create perfect designs because joining tiny granules or thin wires on a three-dimensional substrate was more difficult than on a flat one. The SEM (Scanning electron microscope, ZEISS EVO MA 25, Germany) image of the Dalian buckle shows that some tiny granules dropped or deformed during the process of heating (Fig.5c) while, as shown in the details of the filigree work found in Nanchang (Fig. 5d), the goldsmith attempted to fill a gap with a short beaded-wire to mend a technical flaw.

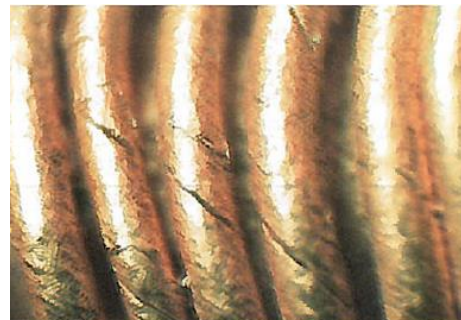


Figure 5b. Microscopic photo of gold wire using strip-twisting technique, Hellenistic earring, Museum of RISD. After Hackens and Winkes 1983:196.

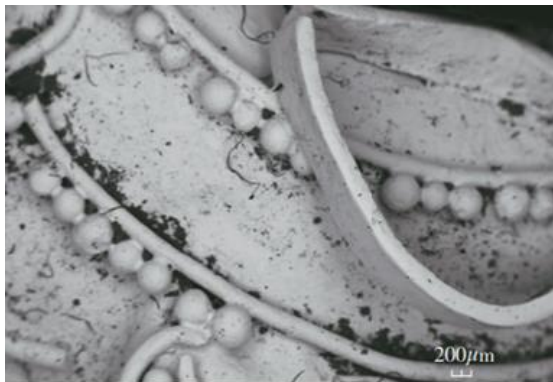


Figure 5c. SEM Image of small granules in the decoration of belt buckle, Dalian. After Tan 2019:111, fig.12.



Figure 5d. Beaded wire in the mati-gold, Nanchang. Photo by the author.

3. THE HAN PERIOD FILIGREE WORK AND ITS MULTIPLE SOURCES

Gold ornaments decorated with twisted wires appeared no later than the fourth century BCE in the borderlands of northwest China. Very few examples of twisted wires were found in the ornamentations of gold pieces at the Majiayuan cemetery (fourth-third century BCE) and in Xinzhungtuo Tomb 30 (Fig. 6a) at Yixian (fourth-third century BCE), Hebei province. The armband (Fig. 6b) found in Majiayuan Tomb 16 was decorated with twisted wire and polychrome in-

lay (Gansu 2014:63), and this filigree work also appeared in other contemporary gold objects discovered in Tomb 30 (dated to the fourth century BCE) at Xinzhuangtuo, situated in the old necropolis of Yan State during the seventh to the fourth centuries BCE (Hebei 1996). The gold appliqués with three camels were edged with two twisted wires in a herringbone pattern. Other objects in animal style were decorated with ram heads and horses, showing a strong connection with the Sayan-Altai steppes. However, it is possible that some cast gold appliqués were also produced locally,

as engraved on their reverse side are Chinese characters informing about the weight. Twisted wires were commonly used as decorative borders for the gold ornaments discovered in the Western Han royal tombs



Figure 6a. Gold ornament of Xinzhuangtou M30.
After Hebei 1996: pl.29

From the second century BCE onwards, there emerged extensive evidence of craft activity using foreign techniques and exotic materials—amber, agate and carnelian – in central China. An example of this would be a set of four bronze mat weights found in the tomb of Dayunshan in Xuyi, Jiangsu province, each identically cast in the form of a tiger biting at the belly of a bear (Nanjing 2013:25-66). Both animals were lavishly inlaid, alternately in gold and silver, with eardrop shaped agate, carnelian and turquoise inserted. Such methods are characteristic of the encrusting and polychrome animal style of the Eurasian steppes, which greatly influenced the people in the northern borderlands. The belt plaques, as well as weapons and harness ornaments found in princely Han tombs, were also adorned with the Scytho-Siberian animal style. Many of these objects were actually made in Chinese workshops using foreign techniques (Liu 2017:1588-1602).

The manufacture of Han period luxury gold with exotic features must have multiple sources. Both the twisted wire and animal style of the hoof gold found at Nanchang were very similar to the gold work discovered in the Majiayuan cemetery. This led some scholars to conclude that the filigree work discovered in the royal Han tombs was closely related to the Xiongnu people, a pastoral nomadic group that carried out periodical raids in China until Emperor Wu initiated a fiercely aggressive policy against them in the first century BCE (Liu 2017:112-125). Yet, very little filigree work was found in the Xiongnu tombs that dated to a period from the late first century BCE to the first century. Some rare examples include four gold ornaments found in barrow 22 of Noyon Uul, which were decorated with thin wires in spiral shapes, re-

sembling the cloud patterns of Han Chinese tiles (Polosmak and Bogdanov 2014: 45-82). Compared with the intricate design of luxury gold excavated in the Han Chinese tombs, the gold objects found in the Xiongnu territory were rather coarse in terms of craftsmanship and fine filigree work; for example, helicoid wires and corrugated wires were rarely seen in the ornamentation. The early first century *Yantie lun* (Debates on Salt and Iron) mentions that prestige objects, such as the chariots of the Xiongnu peoples, did not have silver, gold, silk or lacquer ornaments, and that the Xiongnu's artifact making lack skilled craftsmanship (*Yantie lun* 9, 543).

What makes the filigree work of the Haihun gold unusual is the specific use of the beaded wire and the corrugated wire. Both of these decorative wires were rarely seen in ancient China, but were very common in the ornamentation of Etruscan and Greek jewelry. Use of the beaded wire was found to exist in Phanagoria on the periphery of the Greek world in the fifth century BCE. The joint use of the beaded and twisted wire appeared on the decoration of a gold appliqué inscribed with Greek letters (Fig. 7a) in the Thracian burial (c. third-second centuries BCE), located next to the outflow of the Veleka River (Manov 2009: 27-30). Excellent examples of filigree work include a gold pendant in the form of a female head of the Goddess Hera recovered from the fourth century BCE Scythian burial near the village of Velyka Bilozerka, Ukraine (Fig. 7b). The woman's headdress, framed by a beaded wire, is ornamented with a delicate filigree pattern of palmettes, lotus flowers and scrolls. In the ornamentation of a pair of gold ear studs (350-300 BCE) found in Russia's Taman peninsula (Fig. 7c), the inner surface of the disc is decorated with concentric rings of decorative wires, both



Figure 6b. Arm band of Majiayuan M16.
After Gansu 2014: 63

beaded and twisted (Reeder 1999: 212-213; William and Ogden 1994). This type of spiral-beaded wire is particularly characteristic of Classical Greek and Hellenistic filigree, and was less common in Roman times (Ogden 1992: 47). The finest filigree work, as shown on the decoration of the well-known pectoral (mid-fourth century BCE) of an ancient Scythian treasure (Fig. 7d) discovered in a burial kurgan at Tovsta Mohyla, near Ordzhonikidze, Ukraine, is surely a Greek contribution, as some Scythian gold was actually manufactured by Greek goldsmiths (Reeder 1999:

327). Corrugated wire appeared as early as the seventh century BCE in the decorations of gold fibula in the Etruscan Necropolis of Tarquinia in Tuscany (Fig. 7e), Italy (Eichhorn, Rasche and Schneider 2013: 60), and a similar design, but made with hammered strip, appeared in the gold earring (Fig. 7f) found at the Maiemer site (seventh-sixth century BCE) in Central Asia (Onggaruly 2018: 320-321). Corrugated wire became very popular in Greek jewelry dated to the fourth-third centuries BCE, such as the boat-shaped gold earrings found in the holding of the British Museum (Ogden 1994: fig. 146).



Figure 7a. Gold plaque with beaded wire from Thracian tumulus Sinemorets. After Manov 2009:27-30.



Figure 7b. Gold pendant in the form of female head of the Goddess Hera from Kurgan 2, burial 3, near Village of Velyka Bilozerka, Ukraine. After Reeder 1999: fig.95.



Figure 7c. Gold ear stud from the Taman peninsula of Russia. After Ogden 1994: 172



Figure 7d. Gold pectoral from a Scythian tomb at Tovsta Mohyla, and detail of the twisted wires. After Reeder 1999: fig.172.





Figure 7e. Gold dragon fibula from the tomb of warrior in Tarquinia. After Eichhorn and Rasche 2015:60.



Figure 7f. Gold earring found in Maiemer site, Kazakhstan. After Onggaruly 2018:320-321.

Significant differences were evident in terms of ornamental details between the filigree work from the classical world and that of Haihun gold. In ancient Greek gold design, filigree was used principally as a surrounding for enamel and seldom as a decorative process on its own. Filigree and granulation have also been found in Roman jewelry, but neither process was popular, with granulation in particular producing a coarse effect (Higgins 1961: 23-24; see also Perea et al., 2018). In the Etruscan and Hellenistic filigree work, a flat gold sheet was often used as substrate for decorative wires, and the most popular filigree patterns were circles, spirals and corrugated lines. In the case of Haihun gold, adhering thin decorative wires to the circular surface of cast pieces required a high level of skill with soldering technology, because the thin wires are very easily melted themselves. The ornamentation present in the Haihun hoof gold consist of a greater variety of decorative wires, and their intricate designs represent fine craftsmanship.

Furthermore, certain peculiar decorative motifs, such as fish-tailed dragons, occurred in the Han period prestige art. The Yanqi belt buckle, for example, presents a central figure of a dragon with two pointed horns and large staring eyes (Fig. 8a). The dragon's body is densely covered with tiny granules and was originally embedded with colourful semiprecious

stone inlays. In the Han period, dragons were often depicted as snake-bodied creatures with the requisite scales, claws, and a mouth full of teeth. Interestingly, the Yanqi dragon has a fish's tail; a close similarity with this can be found in the low-relief prowling dragon (Fig. 8b) on a dagger sheath, and the engraved one (Fig. 8c) on the gold plaque found in the Tillya-Tepe tombs of northern Afghanistan (Sarianidi 1985: 98), sharing some common features with the iconography of the *ketos* (sea monster) (Fig. 8d) in Hellenistic art (Piotrovsky 1973-1974: Pl.15). Standing at the crossroads between East and West, the Tillya-Tepe tombs yielded numerous gold artefacts, and their artistic styles presented a fusion of Greek, Chinese and Persian arts (Hickman 2012: 78-87). Many of these gold objects were elaborately decorated with granulations and filigrees, as well as being embedded with turquoise and an inlay of semi-precious stones, dating back to the beginning of the Christian Era (Antonini 1994: 296). One remarkable discovery pertaining to the Tillya-Tepe treasure was a gold pendant portraying a master confronting two winged dragons, whose horns were notably created by beaded wires (Fig.8e). This evidence, along with the filigree work from the Haihun tomb as discussed above, indicate the application of the filigree technique to gold making in Central Asia and China from the first century CE, or even earlier.

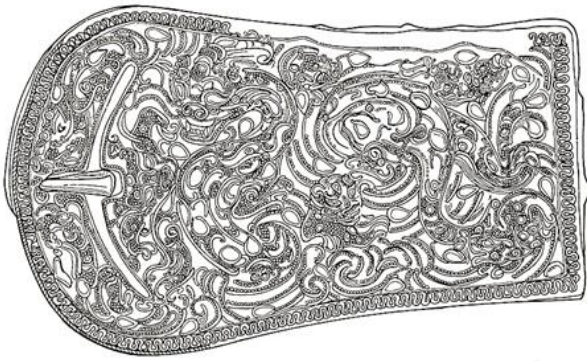


Figure 8a. Drawing of the dragon belt buckle from Yanqi.
After National Museum of China 2002:260.



Figure 8b. Gold dagger sheath decorated with a prowling dragon with fish tail from Tillya-Tepe.
After Sarianidi 1985: 215



Figure 8c. Gold plaque with a dragon from Tillya-Tepe.
After Sarianidi 1985: 98.



Figure 8d. Gold plaque with the ketos from the Kul-Oba burial mound.
After Piotrovsky 1930-1974: Pl.15



Figure 8e. Gold pendant with a human figure confronting two dragons from Tillya-tepe (left);
Detail of beaded wire (right). After Sarianidi 1985: 94.

The influence of Hellenistic art also appeared in the iconography of a woven wool cloth found in an elite burial at Sampul (dated to about 100 BCE), near the south-western Tarim Basin oasis and east of the important Silk Road city of Khotan in Western Xinjiang.

On this cloth, a Macedonian warrior wearing a Hellenistic diadem holds a spear at his side, while on the right side is the image of a running centaur (Fig. 9a), cape flying while playing a flute within a rosette of flowers (Xinjiang 2001: 27-38). More samples of Greek origin

were unearthed in the burial sites of ancient Kroran, dating from the first century onward. The well-known robe found in Yingpan (Fig. 9b), portraying cupids,

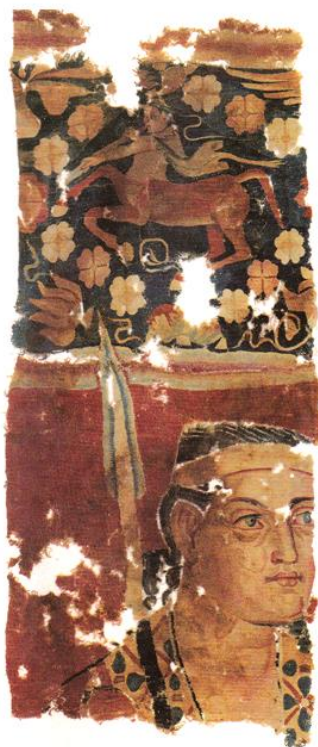


Figure 9a. Wool fragments with Hellenistic motif, second century BCE, Sampul, Xinjiang. After Genito and Qi 2018: 104.

Like these exotic motifs that were influenced by Hellenistic art, it can be argued that the filigree work of the Haihun gold was not a case of simple borrowing, but of local development. The technical and ornamental details outlined above point to a shared craft tradition, while the usage of decorative wires has been linked to the Hellenistic world. While the manufacturing of the variety of filigree work seen on the Haihun gold shares the same techniques and basic designs, it employs selective use of different decorative wires, along with a range of variations in composition and placement, ultimately creating very different overall effects. The filigree works found in the royal Han tombs that have thus far been uncovered testify to an innovative local craft tradition partly inspired by foreign technologies and decorative styles. The archaeometrical evidence reveals that the soldering technology of Han period filigree work found in central China was distinguished from the Mediterranean world. The usage of beaded wires and corrugated filigree demonstrates the strong influence of Hellenistic art. Conversely, little evidence of the helicoid wires has been found in the gold ornamentations uncovered in Central Asia and the Mediterranean world, suggesting that the latter wires were a local invention of Han China. Two key

centaurs and flowers in Hellenistic traditions, attests to China's extensive contact with the Hellenistic world (Jones 2009: 23-32).

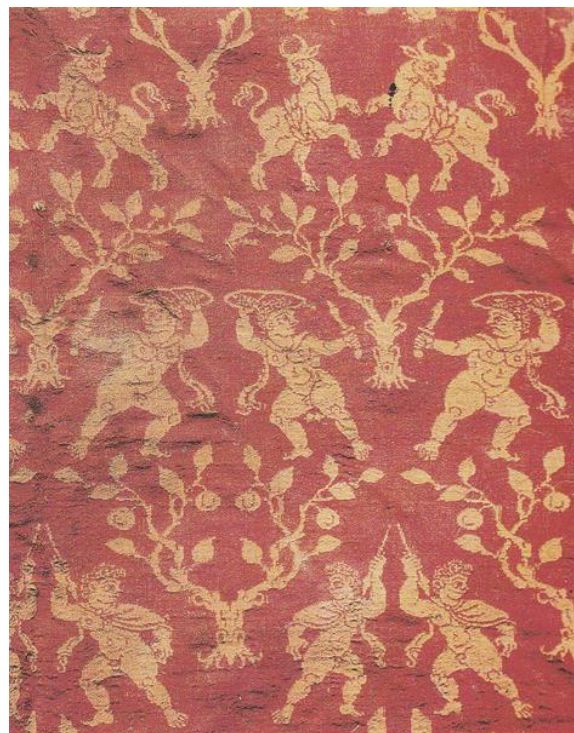


Figure 9b. Wool robe depicting cupids, centaurs and flowers. After Genito and Qi 2018:108.

questions then naturally arise: why were such peculiar manufacturing techniques used for the decorations of hoof gold? Who were the carriers of these foreign techniques?

4. THE SIGNIFICANCE OF GOLD IN HAN SOCIETY

Gold is a precious metal, and in Han society was mainly used between aristocracies in the endowment of awards, gifts and tributes, while copper coins were more widely used as the currency in circulation. Historical texts such as *Hanshu* describe that the Han emperors bestowed a large number of gold to royal members and high officials. From the second century BCE, references to gold bullions or coins measured in *jin* frequently appeared in the record: the Grant Commandant Zhou Bo was gifted 5000 *jin* of gold, while General Huo Guang was given 7,000 *jin* of gold, to name just two examples (*Hanshu* 40, 2055; *Hanshu* 68, 2947). The vassal kings of the Han Empire paid gold ingots to the Emperors as tributes every year since the reign of Emperor Wen (180-157 BCE). In 111 BCE, a total of 106 vassal kings were stripped of their rank by Emperor Wu due to the poor purity of gold tributes (*Hanshu* 6, 187). Over 1,000 gold ingots were found in

30 archaeological sites of 14 provinces across the Han Empire, including burials and hoards (Scheidel 2009). In the first century BCE, one *jin* of gold was valued at 10,000 coins in cash. Gold mining and production were practiced under strict control of the Han government. Any unofficially authorized mining and casting of gold would receive severe punishment. Two official workshops located in the Shu commandery (present-day Chengdu) were responsible for manufacturing luxury goods made of gold and silver (*Hanshu* 72, 30170). Some gold ornaments served as imperial gifts among a variety of tributes, including textiles, lacquers, and grains to appease Xiongnu, a nomadic pastoral tribe on the northern borders (*Hanshu* 94.3758; Ban 2006).

By the second century BCE, gold had become increasingly popular for use in personal ornaments and served as a status symbol. Gold thus reinforced social distinctions. A hierarchy of metals reflected the social hierarchy, with gold and silver associated with those at the top. Sumptuary rules ascribed the usage of gold, silver and copper threads sewn onto jade suits to the ranks of their owners, such as emperors, princes and marquises. For instance, Liu Sheng (d. 112 BCE), the King of Zhongshan, was found enshrouded in a set of goldsewn jade suits in a tomb near Mancheng, Hebei province, which also yielded a variety of gold ornaments, including plaques embossed with rams' heads, and gold buttons decorated with granulation and filigree, as well as bronze and lacquer table wares prepared for feasting. Many elite tombs like this one were constructed as a home to provide every comfort for the deceased in the afterlife, and luxury goods buried with the dead, served as status symbols (Pirazzolli-Serstevan 2009: 949-1026).

The association of gold with immortality is described in the *Hanshu*. During the reign of Emperor Wu (141-87 BCE), it was believed that eating from gold utensils and performing the appropriate rituals could bestow immortality, and the search for immortality reached its height in the imperial court (*Hanshu* 25, 1215-1216). A rich variety of gold vessels were gifted to royal members and high officials, as described in the historical texts denoting dynastic history; regrettably, however, gold vessels rarely survived in the many Han tombs that did not escape looters. The quest for immortality became a recurring theme in the ornaments of elite objects.

5. THE HEAVENLY HORSE AND IMPERIAL EXPANSION

Hoof-shaped gold comprised one of the iconic ingots in the Han dynasty, with the design taking miraculous animals for inspiration (*Hanshu* 6, 206). The "heavenly" horse, also called "Han xue ma (blood-

sweating horses)", were said to come from the kingdom of the Dayuan, in an area located in the Ferghana valley of Central Asia, corresponding to the area bordering modern Uzbekistan, Tajikistan, and Kirghizstan. Emperor Wu sent his envoy, Zhang Qian, to travel west of China to the territory of Yuezhi in order to try and secure an ally who would attack the Xiongnu from the west while China attacked from the south, under the leadership of the Han generals Wei Qing and Huo Qubing. It was Zhang Qian who told Emperor Wu that there was a special breed of horses of great stamina in the Ferghana Valley, which could equip China with a formidable cavalry. Emperor Wu sent an envoy and gifts westward into the Ferghana valley, hoping to acquire some of these heavenly horses, but the Dayuan king refused and killed the Chinese envoy. In response, Emperor Wu sent troops against the Dayuan Kingdom, seized thousands of horses, and wrote a poem to celebrate the victory, called "The Ode to the Heavenly Horse" (*Hanshu* 96, 3894).

The "Accounts of the Western Region" in the *Hanshu* describes this state of affairs as follows:

"Reports of the heavenly horses and of grapes necessitated the opening of the roads to Dayuan and Anxi. From this, rare treasures such as brilliant jewels, turtle shell, rhinoceros horn, and kingfisher feathers filled the palace. The four splendid horses – Pushao, Longwen, Yumu – and the blood-sweating horses are kept within the palace gates; and elephants, lions, fierce dogs, ostriches kept in the outer gardens. Rare items of foreign lands arrive from all four directions." (*Hanshu* 96,3928)

The hoof-shaped gold made up 15 percent of ingots excavated from the tomb of Marquis Haihun. Surrounding the rim are intricate designs created by complex applied filigree and granulation. So far, only two royal tombs have been found to contain hoof-shaped gold of this kind (Hebei 1981: 1-13; Li, Fu and Chao 1977:74-76). This rarity subsequently led to the conclusion that these hoof ingots were not in regular use, but held ritual and religious significance. Some scholars suggested that they served as ceremonial objects for ancestral offerings, the hoof-shaped gold objects were heirlooms buried in the tomb of Marquis Haihun, originally belonging to Liu Bo (100-88 BCE), the first king of Changyi, and that these objects were manufactured during the reign of Emperor Wu, who eagerly sought the elixir of immortality (Wei 2017: 105-112).

Given the local invention of the hoof-shaped design, it is unlikely that these prestige objects were initially imported as finished products to southern

China. Rather, it appears that the technologies for producing the precious gold may have had ideological value in Han society because of their association with the Far West. The social significance of such exotica has long been studied by archaeologists, art historians, and cultural anthropologists who see luxury goods, especially exotic objects, as material symbols of status and power. There is some uncertainty associated with distance, which is often seen as an obstacle to be overcome. One who overcomes such an obstacle by traveling to or accessing distant places may be considered to have special power or control within a given society. "The materialization of power was accomplished through the acquisition of exotic goods, as well as through the application of foreign techniques in manufacturing..., which provided tangible proof of one's access to distant places and people (Helms 1988: 59)."

6. EXOTIC HORSES AND FOREIGN ENVOYS

By the late second century BCE, after a successful campaign against the Xiongnu in 111 BCE, a number of military colonies were established along China's western borders to protect the country's trade from nomadic intrusions. These colonies became important trading posts on the Silk Road. The bamboo manuscripts (Fig.10a) found at a posthouse at Xuanquan in Gansu Province recorded the arrival of foreign tributes and goods in transit between the second century BCE and the second century CE. Strikingly, the 'heavenly horse' appeared in this official record.



Figure 10a. Bamboo manuscript found in the Xuanquan posthouse. After Zhang 2020:pl.002.

"In 74 BCE, Emperor Zhao sent the ambassador Gan [Yanshou] and the Imperial Counsellor [Tian] Guangming to meet the [envoy] with a heavenly horse at Dunhuang Commandery" (Hu and Zhang 2001:104, translated by the author)

The written source reveals that the Xuanquan posthouse in Gansu witnessed a large influx of foreigners and goods between the first century BCE and the first century CE. The exotic horses, along with camels and other prestige goods, became a primary source of tributes or trading goods to Han China. A variety of envoys visited the Han court, including a large envoy of 71 people from Dayuan (Ferghana) and other envoys from Daxia (Bactria), Da Yuezhi (Kushan) and Kangju (Sogdiana). Many oasis states and kingdoms in the western regions were listed in this official document and could find their counterparts in Han dynastic history, including Shanshan, Qiemo, Shache, Shule, Yutian, Qule, Jingjue and Wushun (Zhang 2015). In addition to the official envoys of noble rank, some foreign merchants were incorporated into official tributary visits, or those who traveled under the protection of nomadic states (Zhang 2016). In 72-71 BCE, the Xiongnu was defeated by the Han and its allies, and lost its control of the Silk Road. It is interesting that almost immediately thereafter, in 68 BCE, the Anxi (Parthia) and Dayuan (Ferghana) began sending embassies to Loulan. The *Shiji* described that the states from Dayuan to Anxi spoke different languages, while their customs were similar and their languages mutually intelligible, and that all the states in the region were "skilled at commerce", with Dayuan "overflowing with Han goods" (*Shiji* 123, 3160-3162). The well-known bronze sculpture of a galloping horse treading on a flying swallow (dated to the second century CE) in the Gansu Provincial Museum was believed to portray the "heavenly horses" (Fig.10b).

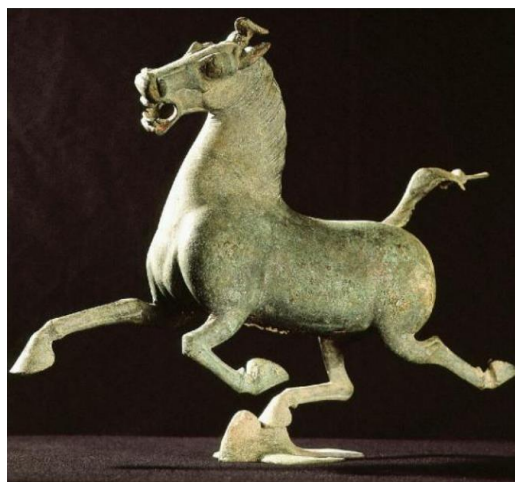


Figure 10b. Bronze heavenly horse in the Gansu provincial Museum. After Kleiner 2016: 468.

Amongst the various trading goods, horses were highly valued by the nomadic groups living in the western frontiers, as they were essential to their life-style. A letter written by the Colonel Protector of the Qiang, who was positioned by Emperor Wu to take charge of Qiang's affairs in the Hexi Corridor, described a conflict regarding the ownership of a valuable horse with a gold harness between two Qiang people:

"The Colonel Protector of the Qiang transferred the official document. It states that Nanguai, who is a Qiang person of the Liu Weizhong tribe, sued Lingyu, who is another Qiang person of the Zangyezi tribe mistakenly owned a horse claimed by Nanguai, and a gold horse ornament with *qingbi* decoration. It has been decided these two people would meet to deal with this ownership issue on the 15th of this month. Here I report the decision." (Hu and Zhang 2001:159, translated by the author)

Interestingly, the use of "*qingbi*" (turquoise blue) as a decorative feature was documented in the inscription of a bronze wine container (Fig.10c). A bronze container with three legs sculptured as crouching bears and decorated with polychrome inlay, bearing the inscription "Made in the 21st year of Jianwu (45CE) by the western workshop of Shu commandery...." This object was produced in the western workshop of the Shu Commandery, one of the state-owned official workshops in present-day Sichuan. Many official bronze products carried quality control marks indicating the vessel type, capacity, provenance, and the names of the craftsmen involved in the different manufacturing procedures. According to the inscription, the stand of this wine vessel, with three legs in the form of crunched bears, and the polychrome inlay on the decoration of the three bears is described as "*qingbi*." Polychrome inlays were very common in Achaemenid Persia, and in the Greek cities of the Black Sea area. Such a technique seemed to gain its popularity in the second century BCE in central China when gold became a major symbol of wealth and prestige (Bunker 1993: 27-50).¹ It is noteworthy here that, horse ornaments decorated with "*qingbi*" were archaeologically documented in the royal Western Han tombs, such as the Jiulongshan Han tomb in Qufu, Shandong province, where a silver horse harness was embedded with tear-drop turquoise, amber and carnelian inserts (Fig.10d).



Figure 10c. Bronze wine container with bear feet in polychrome inlay. After Beijing Palace Museum.



Figure 10d. Silver horse harness of Jiulongshan Han tomb. Shandong Provincial Museum. Photo by the author.

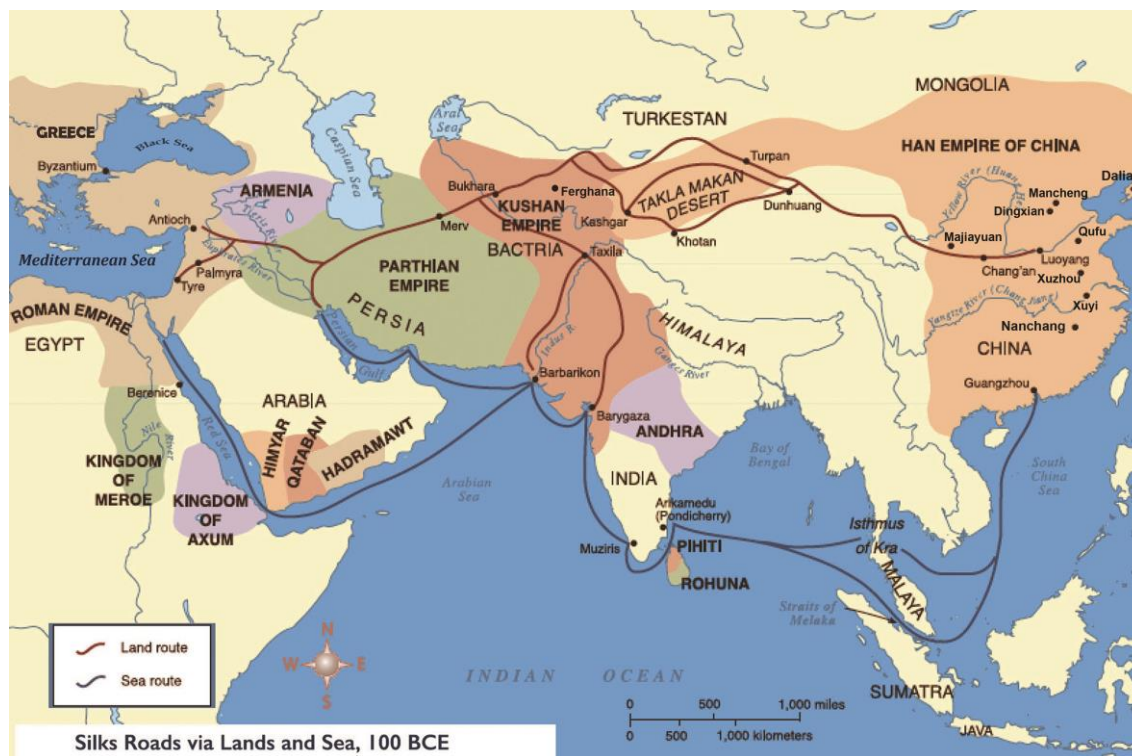
Using precious metals as horse ornaments occurred as early as the fourth–third centuries BCE in the northern Chinese States, which had constant contacts with their nomadic neighbors in the northwest. In tomb 30 of Xinzhuangtou (fourth-third centuries BCE) in the ancient city of the Yan state, some gold horse ornaments were found that were made in the Scytho-Siberian animal style, but which carried inscriptions of Chinese characters, indicating that they could be local productions. In ancient China, chariots and horses were means of status display. The *Yantie lun* (Debates of Iron and Salt) mentions that the head gear and trappings of wealthy families' horses were made of gold and silver, and decorated with jade hangings and exotic ornaments in the Han period (*Yantie lun* 6, 350). Some gilt frontal ornaments found in the horse pits of the western Han (206-25 BCE) tombs at Luozhuang (Shandong) and Yongcheng (Henan) were decorated in the Scytho-Siberian animal style, while the Hellenistic influence is notably

¹ Bunker has argued that an initial interest in gold might have been introduced into the ancient Chinese world during the latter part of the 2nd millennium BCE through contact with neighboring

minority groups. No later than the second century BCE, gold became one of the material symbols of wealth and prestige, as well as a talisman used with jade against decay.

evident in the ornamentation of luxury objects found in the western Han royal tombs (Jinan 2005: 3-24). The horse harness and chariot parts found in the tombs at Dayunshan (Jiangsu) and Jiulongshan (Shandong) sites were embellished with teardrop agates and tur-

quoises, adding to the grandeur of these prestige objects (Nanjing 2013:25-66; Shandong 1972: 39). From this evidence, it may thus be deduced that in order to meet an accelerating demand for exotic goods, local artisans translated foreign designs into a Chinese style.



Map 2 Silk Roads in the Han period

While there is some uncertainty as to whether the hoof ingots were made in a central imperial workshop or in a regional factory patronized by royal members. But it is clear that the hoof gold decorated with foreign techniques catered to the Han elites' taste for exotica. The 'Accounts of the Western Regions' in the *Hanshu* describe that the breadth, wealth, and diversity of the Han Empire were expressed through collecting and displaying exotic materials, designs and products. The luxury gold produced in the Han dynasty absorbed various designs and manufacturing techniques from many sources. The text dated to the third-fourth centuries CE, *Xijing zaji* (A Miscellaneous Record of the Western Capital), narrates how when Emperor Wu received a set of horse fittings with an inlay of precious stones from the Shendu kingdom (India), luxury horse ornaments fashioned in foreign style became the trend, and generated numerous imitations in Chang'an city (Xiang and Liu 1991: 78). Personal adornments with exotic features, such as belt plaques found in princely Han tombs, were made in the Scytho-Siberian animal style, including rendering such as confrontational beasts, animal combat, and single animals with reversed hindquarters that were

borrowed from the steppes (Rawson 2001: 23-32). Ultimately, the findings of the current research point to the conclusion that the adoption of distant material forms, technologies and practice may have been motivated by the need for high elites to display their power and privilege. The possession of such exotica also meant that their owners could share in the world from which the artefacts were derived, and emphasise their capacity to extract objects from that world.

Both beaded and corrugated wires had their roots in ancient Greek jewellery and artistic traditions. It is not surprising that the Hellenistic legacy was one of the primary sources in Han ornamentation. Jessica Rawson has pointed out that the scroll pattern, a fashionable Han period decorative motif, clearly borrows from Greek art (Rawson 2012:23-36). With the expedition of Alexander the Great (356-323 BCE) into Asia, the influence of Hellenistic art extended as far as Persia and India, and even the nomadic people of the Asian steppes grew accustomed to Greek traditions. Following the death of Alexander the Great, a large number of his soldiers were forced to remain in the Asian fortified cities of Bactria and northwest India. The Greco-Bactrians and their Hellenized Scythian

troops reached China through the Tarim Basin and established colonies in its southern portion, along the northern range of the Himalayas. From the third century BCE to the early first century CE, Greek kingdoms continued to exist in Central Asia. Even after the collapse of the last kingdom, the Greek style still remained present in sculpture, metalwork, textiles and jewelry, continuing to be a major aesthetic in the region (Bordman 1994). During the third and second century BCE, the Bactrian were known for trading gold and silver throughout the Mediterranean, and also travelled to China and India (Christopoulos 2012: 1-79). When Han China dispatched missions westwards to seek allies against the nomadic incursions of the Xiongnu, China had direct contact with Bactria and many other Hellenized cities in Central Asia. It was in this way that new technologies and ideas reached China, accompanied by exotic horses and precious metals.

Material imprints of contact between Central Asia and China in both directions – namely, western-style goods, such as the silver box in the Han royal tomb

and the “grape picking” textile from Palmyra (Nickel 2012:98-107; Zuchowska 2014; Brosseder 2014:199-332) – are attested to in a period from the late second to the early first centuries BCE. This is exactly the time when Zhang Qian returned from his assignment in Central Asia, and when the first diplomatic missions were sent from the Han court to the western regions and beyond. Bactrian gold was mainly found in the six graves of Tillya-tepe in Northern Afghanistan. The graves are dated from the first century BCE to the mid-first century CE. Many gold ornaments found there were decorated with granulations and lavishly embellished with a turquoise inlay (Fig.11a), showing the strong influence of Mediterranean and Parthian art (Hickman 2012:78-87; Belaňov 2016). Some gold ornament manufacturing techniques and decorative motifs (Fig.11b) could clearly be attributed to the Han Chinese tradition (Leidy 2012: 112-133). It can be assumed that these shared, culturally hybrid objects may reflect shared socio-political practices and exemplify the manner by which foreign innovations were deemed useful for social identity construction.



Figure 11a. Gold clasps with cupids riding dolphins. After Hiebert and Cambon 2011: 256.



Figure 11b. Boot buckles with men in carriage drawn by dragons. After Hiebert and Cambon 2011: 266.

7. CONCLUSION

During the Han period, the imperial obsession with heavenly horses and objects acquired from further afield resulted, for several centuries, in a lingering interest in the exotic and distant amongst the ruling elites, as attested by textual sources and archaeological evidence. Although foreign influences had penetrated China since early times, official interest in the West began only during the Western Han period. When Emperor Wu launched a military campaign against Ferghana in search for warhorses, long-distance contact began to open up across deserts. The representation of western techniques, such as filigree and granulation, and some peculiar decorative motifs in the gold artefacts found in Nanchang and other re-

gions affirm Han China’s extensive contact with pastoral nomadic groups in the Eurasian steppe, extending as far west as the Mediterranean world. In later centuries, numerous prestige goods such as luxury gold, lacquers, Roman glass, exotic animals and plants were transmitted along the Silk Roads.

Both archaeometrical and epigraphic evidence affirm that the hoof-shaped gold of Nanchang and other Han period filigree work could be local productions of borrowing foreign techniques. The current paper’s examination of existing data reveals that the Han dynasty artisans employed different technical choices for soldering techniques, and that filigree work found in the tomb of Marquis Haihun in central China used Au-Ag binary alloys for soldering, which differed to those of other contemporary examples found in Mongolia and Korean Peninsula, as well as

in the Mediterranean world. This finding provides some clues to understanding how new techniques and ideas were transmitted. While the form or decoration of filigree work can be imitated through a simple observation of the finished product, the actual reproduction of the soldering techniques requires direct contact with the original craftsmen. The ornamental details of the Haihun gold examined in this study showed a strong influence from the Hellenistic world. Extensive technology transfer and the influx of prestige goods across Eurasia would be explanations for

the sporadic signs of Mediterranean influence in Chinese goldwork. The Han elites' incorporation of foreign techniques into imperial manufacture was probably motivated by their aspirations for exotica from the Far West.

While the results of the current study show that the production of luxury gold clearly employed foreign decorative techniques, the mechanisms behind the knowledge communication and technology transfer relating to such gold making require further study due to there being insufficient comparable data to conduct this analysis here.

ACKNOWLEDGEMENTS

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