

Steppe Weapons in Ancient China and the Role of Hand-to-hand Combat

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Abstract

The early societies of central China in the Yellow and Wei River valleys, concentrating on cereal crops, were surrounded to the north and north-west by very different groups of people, who herded animals. In the paper, following Tong Enzheng, this border area is named the arc. The cultures of peoples in the arc were closely connected with those of the mobile pastoralists on the steppe in Mongolia and South Siberia. Through this link, metallurgy came into central China, as did many weapon types. However, the large populations supported by the fertile agriculture of the Central Plains were, by the Shang dynasty, organised into large infantry forces to combat the attacks by much smaller groups of invading pastoralists. Thus while the two forces used some similar weapons, their military tactics were very different. The paper points out that, individual combat by the elite does not seem to have been practised in the Shang and Western Zhou periods. Even in the Eastern Zhou, when swords and daggers were borrowed from the arc and the steppe, the central Chinese relied far more on massive armies than on individual personal military prowess typical of the steppe. The paper illustrates the routes by which these weapons were acquired and surveys some relevant textual sources. The last section emphasises the role of weaponry and armour for the dead.

Keywords: Steppe, arc, central China, weapons, armour, swords, individual combat, Shang, Zhou.

Introduction

Hitherto much attention has been given to the activities of the Shang and Zhou dynasties in central China without an equivalent understanding of the lifeways and warfare of peoples on the borders and in the steppe.¹ As, at all times, their neighbours made a significant impact on the inhabitants of the Central Plains, such an approach does not allow a full appreciation of the richness and variety of the ways in which early Chinese societies developed.² We can, however, recognise the entanglement of the early Chinese dynasties with the northerners by looking at Chinese weaponry and the different uses to which it was put.³

This paper will concentrate on two periods when the central Chinese made obvious use of steppe weapons, the late Shang (1200-1045 BC) and the Eastern Zhou (771-221 BC). It will describe the possible routes of communication across Inner Asia and into central China in those periods. The Western Zhou (1045-771 BC) was also a significant time for contact with the steppe. The Shang had taken up the chariot from the north, and it was further developed as a result of Zhou interaction with their neighbours. However, as this paper will focus on weaponry to explore the contrasts between the large-scale armies of the central Chinese and the smaller forces in the steppe, the chariot will not be a major focus.⁴

We can immediately recognise the engagement of the Shang with their neighbours by looking at the nearly two hundred weapons buried with Fu Hao, who, as consort of the powerful Shang king, Wu Ding (c. 1200 BC), is mentioned in oracle bone inscriptions as a

1 The research for this paper was supported by the Leverhulme Trust and the Reed Foundation. I am grateful for suggestions from Chris Gosden, Peter Hommel, Maria Khayutina and Wu Hsiao-yun. The maps have been created by Peter Hommel. Xiaojia Tang has made contributions to the bibliography.

2 Throughout, the terms China or central China refer only to the basins of the lower Yellow River and the Wei River. In the Eastern Zhou period, central China reached as far south as the Yangtze River.

3 The paper concentrates on the material evidence provided by weapons from tombs and hoards in central China, the borderlands and the eastern steppe by contrast with other studies in which textual evidence plays a major part, as for instance in Raimund Theodor Kolb, *Die Infanterie im Alten China, Ein Beitrag zur Militärgeschichte der vor-Zhan-Guo-Zeit* (Mainz: Verlag Philipp von Zabern, 1991).

4 Chariots as signals of early Chinese interaction with the steppe have also been discussed by many others. Wu Hsiao-yun, *Chariots in Early China, Origins, Cultural Interaction and Identity* (Oxford: BAR International Series, 2013), gives an up-to-date account of current thinking on the introduction of the chariot from the steppe.

leader in battle.⁵ In her tomb were large axes (fig. 1a), derived from the shapes of ancient jade examples, standard spearheads and dagger-axes, *ge*, for an accompanying fighting force, and knives (fig. 1b) similar to those used in the steppe (fig. 2). The axe and the knife had very different functions. While smaller axes might have been carried in battle, the larger axes, the kind found with Fu Hao, seem unlikely weapons of war. Graphs on bronze vessels suggest that large axes were used for beheading sacrificial victims (fig. 3a), and with their large size probably conferred status. The slender knife, a type that incidentally does not appear in bronze inscription graphs, probably fulfilled more mundane functions: the slaughter and skinning of animals and the cutting of entangled reins in chariot warfare, but was probably rarely used as an offensive weapon in combat. The presence of these different weapon types in Fu Hao's tomb has by some been taken as a mark that she came originally from the borders or the steppe, where women were more likely to play a central role in battle.⁶ Her status as a leader in war was thus symbolised by the axes, her homeland by the knife.

The contrast between the axe and the knife is central to the discussion in this paper. The axe represents the Shang traditions of central China, where large infantry forces came to be deployed against the much smaller bands of northerners, who relied on individual prowess and hand-to-hand fighting. The knife belonged to the lifestyle of the steppe and borderland peoples. Much attention here will be paid to the weapons for individual combat common to the steppe, some of these, including the sword, to be discussed in the section on the Eastern Zhou.

The major difference between the peoples of the Central Plains and their neighbours lay not so much in the weapon types, but in the practice of battle. High-ranking elites in central China do not seem to have carried weapons, such as battle-axes, maces, or doubled-edged long daggers that would have allowed them individually to fight hand-to-hand with their equals or with the steppe peoples; such prowess does not seem to have

5 For the report on Fu Hao's tomb see 中國社會科學院考古研究所,《殷墟婦好墓》(北京:文物出版社,1980)。

6 Katheryn Linduff, "Women's Lives Memorialized in Burial in Ancient China at Anyang," in *The Pursuit of Gender: Worldwide Archaeological Approaches*, ed. S. Nelson and M. Rosen-Ayalon (Walnut Creek, Calif.: Alta Mira Press, 2002), 257–87.

been of significance. Instead, the Shang king and his elites led relatively large infantry forces. In the steppe, however, where armed bands were inevitably smaller in the periods concerned, success of the individual in war, which judging by the surviving weaponry often involved direct engagement with an enemy, seems to have been essential for leaders to acquire and maintain position.

Within the history and literature of Western Europe, personal courage in the face of an equal played, and plays, a large, if often a symbolic, role. Bravery is vividly described in epics, such as the *Iliad* and *Beowulf*. Rock carving in Scandinavia in northern Europe and Greek painted vases in the south celebrate the individual warrior.⁷ Indeed, it is also argued that the warrior, as much in the steppe as in northern Europe, was significant in the construction of his society. It was his personal prowess that enabled him to create loyal bands and to build up his power base.⁸

Archaeologically, the Bronze Age warrior has been identified by many in the burial of a set of items: weaponry for warfare, drinking vessels for alcohol, horse harness for riding and wheeled vehicles for driving. Ornament of the body, ranging from tattoos to decoration on cloth or metal was also a constant. The weapons included swords, axes and maces, all for contact at close quarters. This form of burial appeared in Europe and the western steppe in the mid second millennium BC and can be directly compared with tombs of the inhabitants of the eastern steppe also. Short, double-edged daggers or knives, axes and maces, had spread across the steppe during the third and second millennium BC and, from these, we can infer that such personal combat was rife. Similar weapons are displayed on deer stones in Mongolia, as seen in figure 20, below. Thus, to a remarkable degree, northern Eurasia, home to many different populations and societies, shared similar martial practices, involving personal danger for the elite as much as for ‘commoners’.

These often semi-mobile peoples posed a direct challenge to the many settled societies of Western Asia, as well as to those of central China. However, in the two regions

7 Carlos A. Pícon et al., *Art of the Classical World in the Metropolitan Museum of Art, Greece, Cyprus, Etruria, Rome* (New Haven and London: Yale University Press, 2007), 80, fig. 79 illustrates a black figure vase showing a warrior putting on armour, emphasising thus the role of the individual in combat.

8 A. F. Harding, *European Societies in the Bronze Age* (Cambridge: Cambridge University Press, 2000), 270-307 describes the European ‘warrior’ and the social role of personal prowess.

at the ends of the Eurasian steppe, the impact of the challenges was different. Invaders in Western Asia from the north, such as the Mitanni and the Hittites, brought aspects of steppe warfare, including chariots, into Anatolia and Mesopotamia. But invaders and the settled communities shared some weapon types, such as maces, shaft-hole axes and fine daggers. At the great cemetery of Ur and in the tomb of Tutankhamen were daggers with golden scabbards, clearly much admired possessions. While such elite weapons appeared to glorify individual, adversarial courage among the rulers of settled states and cities, they may have been symbolic rather than used directly in combat. None the less, those rulers thought it necessary to emphasise their personal abilities in battle as part of their claims for legitimacy to rule. Remarkably, such weapons, highly esteemed in Western Asia and Egypt, are not found in Shang tombs. As we shall see, military might must have been very important for the status of some of the Shang elite, but this value was differently expressed.

David Keightley was among the first to point out that combat with swords and daggers does not seem to have been important to the early Chinese elite.⁹ And he also noted that there are no great Chinese epics celebrating the warrior, as in the *Iliad* or *Beowulf*. Keightley defined the hero, here called the warrior, “as a protagonist of exceptional courage and fortitude who engages in bold and significant actions. . . . bodily engagement and physical prowess were part of the Greek hero’s qualities.” The weapons required for such physical prowess, most especially the sword, were generally absent in the Shang period. Short, double-edged daggers, ancestors of the sword, only penetrated central China in the eighth century BC, though they were employed by peoples living along the western and northern borders.¹⁰ As illustrated in the map in figure 4, such double-edged daggers were concentrated in this region and had clearly been derived from

9 For David Keightley’s perceptive account of the contrasts between Mediterranean and ancient Chinese warfare, see “Clean Hands and Shining Helmets: Heroic Action in early China and Greek Culture,” in *Religion and the Authority of the Past*, ed. Tobin Siebers (Ann Arbor: University of Michigan Press, 1993), 253-81. A few Mycenaean gems show sword fighting. But while combat between members of the elite may have been much celebrated in literature, on the ground, ordinary members of general fighting forces may have been more significant.

10 Swords found within present-day China tend to be treated as belonging to one Chinese indigenous tradition. The division between those associated with the borderlands of the arc, and those found on the Central Plains is not usually followed, see 田偉，〈試論兩周時期的青銅劍〉，《考古學報》，2013年4期，頁431-68。

peoples in the steppe. By the Eastern Zhou (770-221 BC), highly decorated swords, such as a fine example inscribed with the name of Gou Jian (fig. 5), were much prized, but even in the fifth to fourth centuries BC, elite prowess with swords does not seem to have had a conspicuous place in Chinese warfare.

Culture and geography of Eastern Eurasia

Before taking further the discussion of the military differences between the steppe and central China, it is probably helpful to take account of the relatively sharp geographical division between the two regions, the plains of the central and lower Yellow River and the Wei River valleys, and the great Eurasia steppe with a wide intermediate border of highland and desert along the west and the north of central China. In the northeast, the land is lower, with more rivers and forest as one moves north. Although the eastern part of the region benefits from the summer monsoon, its growing season is short and it presents a less favourable environment for agriculture than that of the Central Plains. The communities who occupied the steppe and the borderlands were primarily pastoral, economically reliant on the management of animal herds—especially horses, sheep and cattle—supplemented by hunting, foraging and limited cereal cultivation. Inevitably, the populations of the steppe and borderlands were much less dense than those of the Central Plains. There, people lived in a completely different landscape, in which settled cereal agriculture dominated. There were few or no herded animals. This contrast was to have a major impact on the ways in which power could be realised.

For a determined herder, it was possible, with suitable weapons and support of his kin, to seize the animals of others in the region and so increase his power and wealth, while impoverishing his neighbours. A really successful individual could build up wealth and attract others who appreciated his prowess, so increasing his followers. The raiding so often reported by the settled was simply one part of a wider power competition within the steppe that depended on loyalty and alliances as much as on warfare. But as the bands involved were often small, individual combat and personal prowess were always crucial factors.

On the Central Plains, no doubt one member of a village could attempt and even be successful in seizing the grain of his neighbours. But the wealth gained was small, and he was immediately faced by the pressure of other villagers. In such settled societies, building up wealth and power relied on a slower incremental process. Stocks of grain were undoubtedly a source of wealth, but a large granary required cooperation of a large group. With such shared resources, larger social projects, such as defensive walls and ditches could be carried out; to consolidate wealth, explicit organisation was required. It is a convention to describe such societies as complex, implying that the mobile pastoralists' way of life was less complex. This is to underestimate the human capital required to create and hold together bands of armed pastoralists in the steppe. These bands were forever engaged in large-scale and smaller alliances, often temporary and fluctuating. Political acumen, fighting skills, control and allocation of territory and distribution of spoils were all essential. Out of these emerged the largest empires Eurasia has ever seen.

Such contrasts in environments and lifeways led to completely different forms of warfare.¹¹ As a starting point, we can look at a map of the distribution of early mace heads on the borders of central China (fig. 8), which graphically presents contrasts in military culture and practice between the steppe, the borderlands and the Central Plains.¹² A mace,

11 Many studies have considered the differences between the more mobile people of Inner Asia and the settled Chinese of the Central Plains. The absence of early textual records and limited archaeological work in the eastern steppe have complicated research. As a result there has been a tendency to underplay the importance of developments in the steppe, although there is increasing recognition that its mobile peoples brought major contributions to technological advance in central China. Pioneering work was undertaken by Jianjun Mei, "Early Metallurgy in China: Some Challenging Issues in Current Studies," in eds. Jianjun Mei and Thilo Rehren, *Metallurgy and Civilisation, Eurasia and Beyond, Proceedings of the 6th International Conference on the Beginnings of the Use of Metals and Alloys (BUMAVI)* (Beijing and London: Archetype Publications, 2009), 9-16. For a wide-ranging discussion of the interaction of the mobile peoples with central China, see Nicola Di Cosmo, *Ancient China and its Enemies: The Rise of Nomadic Power in East Asian History* (Cambridge: Cambridge University Press, 2002). A different approach, emphasising the mirroring of China's political position by the nomadic groups, underpins Thomas Barfield, *The Perilous Frontier, Nomadic Empires and China, 221 BC to AD 1757* (Cambridge Mass. and Oxford: Blackwell, 1989). An even stronger emphasis is placed on the steppe frontier of China and of other empires in Peter Turchin, "A Theory for Formation of Large Empires," *Journal of Global History* 4 (2009): 191-217. In the present paper, the emphasis is on the particular features of the societies of the Central Plains that determined the ways in which materials, artefacts and technologies were adopted from the north and adapted in what we call ancient China.

12 For studies of maces in the borderlands of China, see 李水城, 〈文化的饋贈與文明的成長〉, 吉林邊疆考古研究中心編, 《慶祝張忠培先生七十歲論文集》(北京: 科學出版社, 2004), 頁 8-20; 李水城, 〈赤峰及周邊地區考古所見權杖頭及潛在意義源〉, 赤峰學院學報編輯部, 《第五屆紅山文化高峰論壇論文集》, 2010 年 8 月, 頁 7-12。

a weapon with a large heavy head and a short staff, is suitable for battering an enemy at close reach on the head; that is, it is used in direct physical contact (fig. 6). Over millennia, it has become a symbol of status and power in many regions. Early maces of the third and second millennium have been found in Britain and northern Eurasia, as well as in Egypt and Mesopotamia,¹³ and they were taken eastwards with many other weapon types. As the map indicates, the maces did not, however, penetrate central China significantly, most probably because hand-to-hand fighting was not a major form of combat among Shang and early Zhou elites.¹⁴ A relatively clear boundary seems to have been sustained between those areas with maces and those without. This boundary also marked the use of other weapons, most especially heavy shaft-hole axes (fig. 7) and short double-edged daggers (figs. 9, 10), both weapons for individual elite fighting.¹⁵ The division so defined also, of course, separates the territories in which wealth could be quickly acquired with personal martial prowess, namely the steppe and the borders, from central China, where power was accumulated more slowly and over time required more and more cooperation and controlled organisation (fig. 11).

In the settled Central Plains, the Shang favoured weapons for infantry. Foremost among those was a blade mounted perpendicular to a long wooden staff, today described as a dagger-axe or *ge*. This is the only one of the main Shang infantry weapons that does not have an undoubted origin in the steppe (see below figure 12).¹⁶ Very early dagger axes have been found at the pre-Shang site of Erlitou; in high elite tombs, such as that of Fu Hao, they are numerous: she had 91, some highly decorated. It is unlikely, given their numbers, that they were for her personal use. They were probably for a select group of infantry.

13 While rulers in Egypt or Mesopotamia might be shown wielding maces, this was certainly a symbolic trope.

14 Rare isolated examples of maces have been found at sites along the Wei River.

15 A stone weapon-head, sometimes designated as a mace, has come from Fu Hao's tomb. It appears to be a simplified version of a shaft-hole axe, see 中國社會科學院考古研究所·《殷墟婦好墓》, pl. 172: 4.

16 It is possible that the peoples at Erlitou spontaneously mounted knife-like blades at right-angles to a staff. However, as this practice was also carried out in the steppe, the central Chinese examples may have followed a steppe precedent. For examples from the Glaskovo culture, see A. P. Okladnikov, *Neolit I Bronzovij Vek Pribajka'ya: Glazkovskoe Vremya* (Moscow: Academy of Sciences of the USSR Press, 1955), 34, fig. 13.

A dagger-axe occurs quite frequently in names inscribed on bronze vessels, indeed among all the weapons included in names, it is the most common (fig. 3b).¹⁷ Presumably, members of families or groups were associated with the weapon type as organisers of men armed with dagger-axes, for it was as leaders within larger forces that the Shang military elite gained their status.

The large infantry forces with numerous weapons were one outcome of the dense population of the Central Plains. This abundance of manpower was to prove extremely important in war, ensuring the strength of the centralised early Chinese states.¹⁸ With a large population, it was possible to muster and feed large armed forces. Further, all manufacturing and construction could be carried out on a vast scale, supported by a distinctive Chinese characteristic, very early techniques of subdivision of labour for all major hand-craft industries: bronze, lacquer, silk and ceramics.¹⁹ During the late Shang period, it is evident, from both the divinations inscribed on oracle bones and the nature of the shared bronze ritual vessel shapes and decoration, that there was a strong degree of central control.²⁰ As a result, the early dynasties could produce artefacts, such as weapons or chariots, in large quantities and to a very high quality. The other major feature of this organised state was the ubiquity of ritual.²¹ Indeed, ritual practice was a binding force and played a major role in the manufacture of jades as an interpretation of warfare.

17 Some ritual bronzes on which it appears, found at Jingyang on the Jing River, north of Xianyang in Shaanxi, suggest that the owners were middle level elites with north-western connections, see 陕西省考古研究所,《高家堡戈國墓》(西安:三秦出版社,1995)。The name with a man holding a dagger axe also occurs on bronzes in tombs in other parts of central China.

18 For the significance of a large and settled population in the success of a state, see James Scott, *The Art of Not Being Governed, An Anarchist History of Upland Southeast Asia* (New Haven and London: Yale University Press, 2009), 64-97.

19 The role of subdivision of labour, leading to mass production in the industries of early China, is discussed and illustrated in Lothar Ledderose, *Ten Thousand Things, Module and Mass Production in Chinese Art* (Princeton: Princeton University Press, 2000). The contributions of a large population, of large scale and mass production, of official organisation, and of writing and ritual were discussed by the present author, in the Slade Lectures delivered at the University of Cambridge in 2014, as fundamental to all aspects of Chinese culture and society.

20 Based on work by David Keightley and others, this evidence is summarised by Gideon Shelach-Lavi, *The Archaeology of Early China, From Prehistory to the Han Dynasty* (Cambridge: Cambridge University Press, 2015), 205-22.

21 All societies engage in ritual, Catherine Bell, *Ritual Theory, Ritual Practice* (New York and Oxford: Oxford University Press, 1992). In central China, ritual was very evidently a binding force within the organisational structures on which the central power depended.

A third geographical area, the borderlands with their inhabitants, contributes to our understanding of the ways in which the Shang and later the Zhou borrowed the weaponry of the steppe. The full range of this borderland, marked grey on the maps in figures 4, 8 and 11, was first defined by Tong Enzheng, being described by him as the *ban yuexing*, or crescent-moon-shaped region.²² Tong drew attention to the higher land and observed certain shared cultural features, such as the use of animals and the drinking of milk, particular pottery types and stone-lined graves. Much more information has been accumulated since his work in the 1980's.²³ The borderlands, here termed the arc (fig. 11), accommodated many different groups of peoples who had diverse material and social cultures. But they shared certain traits, especially animal husbandry, with limited possibilities of sedentary agriculture, and weaponry in stone and bronze that had more in common with their steppe neighbours than with central China. As Tong observed, varied stone monuments and stone-lined graves were widely used and, like the mace, did not reach into China.

The peoples of the arc had a mediating role between those of the steppe and the inhabitants of the Central Plains, making possible the transmission of bronze technology and the chariot to the early Chinese rulers. Contributions of new materials, new weapon types and the horse were positive from central China's long-term perspective, however uncomfortable the warfare and raiding seemed at the time. When discussed, contacts between central China and the arc are generally described in terms of the Northern Zone, defined as an area running from the Ordos area, south of the great bend of the Yellow River, to the north-east. Early and insightful accounts of the significance of the material remains from the Northern Zone were published by William Watson and Lin

22 童恩正，〈試論我國從東北至西南的邊地半月形文化傳播帶〉，文物出版社編輯部編，《文物與考古論文集：文物出版社成立三十周年紀念》（北京：文物出版社，1986），頁 17-43。

23 Anke Hein has edited a volume of conference papers on the Tong Enzheng's crescent-shaped region and more recent research, concentrating on the western and southwestern regions, *The Crescent-Shaped Cultural Communication Belt-Reconsidering Tong Enzheng's Model*, BAR International Series, 2679 (Cambridge: Archaeopress, 2014).

Yün.²⁴ Extensive work on this subject has been presented by Wu En,²⁵ and by Katheryn Linduff,²⁶ Emma Bunker and Jenny So.²⁷ Gideon Shelach has also published several studies on material from the area, emphasising the martial character of the occupants of the later graves excavated in the Northern Zone.²⁸ All of these scholars demonstrate that bronze knives, belt ornaments and tomb types used in this area had more in common with those of the steppe than with those of the Central Plains. However, the tomb occupants were also unusually rich by comparison with their peers to the north and west. Perhaps owing to the proximity to the fertile area of central China, the peoples in the arc in general and in the Northern Zone in particular seem to have had abundant possessions and to have been willing to bury them.

While contrasts between the lifestyles and material cultures of the steppe and arc on one side and of central China on the other are striking, the similarities within the two zones, respectively, are equally remarkable. Once these two groups of societies had set out on their particular social and material paths (despite local diversity within their regions), they remained for centuries or even millennia dependant on them.²⁹ Across the boundary

24 William Watson, *Cultural Frontiers in Ancient East Asia* (Edinburgh: Edinburgh University Press, 1971); Lin Yün, "A Rexamination of the Relationship between Bronzes of the Shang Culture and of the Northern Zone," in K. C. Chang ed., *Studies of Shang Archaeology, Selected Papers from the International Conference on Shang Civilization* (New Haven and London: Yale University Press, 1986), 237-73.

25 烏恩岳斯圖,《北方草原考古學文化比較研究:青銅時代至早期匈奴時期》(北京:科學出版社,2007)。

26 Katheryn Linduff, "Zhukaigou, Steppe Culture and the Rise of Chinese Civilization," *Antiquity* 69 (262, March 1995): 133-45; Katheryn Linduff with Emma Bunker and Wu En, "An Archaeological Overview," in Emma Bunker ed., *Ancient Chinese Bronzes of the Eastern Eurasian Steppes from the Arthur M. Sackler Collections* (New York: Arthur M. Sackler Foundation, 1997), 18-98.

27 Jenny So and Emma Bunker, *Traders and Raiders on China's Northern Frontier* (Seattle and London: Arthur M. Sackler Gallery, Smithsonian Institution, University of Washington Press, 1995).

28 Gideon Shelach, *Prehistoric Societies on the Northern Frontiers of China, Archaeological Perspectives on Identity Formation and Economic Change during the First Millennium BCE* (London and Oakville: Equinox Publishing Ltd. 2009); Gideon Shelach-Lavi, "Steppe Land Interactions and Their Effects on Chinese Cultures during the Second and Early First Millennium BCE," in Reuven Amitai and Michael Biran eds., *Nomads as Agents of Cultural Change, The Mongols and Their Predecessors* (Honolulu: University of Hawai'i Press, 2015), 10-31.

29 The theories of economists about present decisions being constrained by past ones, known as path dependency, are certainly relevant to cultural practices, both in the nature of artefacts that can be chosen at any one time and indeed in the range of beliefs and ideas available. Indeed, each individual only has a given portfolio of opportunities from which to choose. This portfolio is moulded by their society's past and present activities and practices.

between these two groups, interactions were not so readily achieved.

Views of diffusion have long been criticised and rejected. Other concepts have been recruited to explain the similarities within the two regions and the contrasts between them.³⁰ I choose here the notion of social fields, in the terminology of Eric Wolf and Philip Kohl, to capture the idea that social groups with related lifestyles and within similar, adjacent geographical contexts interact with their neighbours on equivalent terms, exchanging materials, artefacts and ideas.³¹ Where the social fields are not shared, as between the steppe and arc on one side and central China on the other, major interventions, such as warfare, conquest or economic collapse, were often needed to make exchanges across the boundary possible. When materials or technologies make the transition, such interactions cannot be described simply as influences. For the borrowed materials or technologies are usually transformed in their new environments. Over long periods of time, regular engagement across very different social fields might be termed entanglement, as skirmishes, trade, and mercenary employment of people from the steppe by the central Chinese brought about significant cultural changes.

We can illustrate the concept of social fields in the present context by looking at the development of bronze technology and its quite different uses in the steppe and the arc and in China. Metallurgy in the steppe and the arc predated the use of bronze in central China, and indeed bronze was probably introduced to the Central Plains from the north. The social fields of the steppe and the arc led to extensive use of similar, but not identical, weapons and ornaments across a vast area; groups of people were networked across the whole of northern Eurasia, with many centres making similar artefacts.³² There political allegiances fluctuated continuously, allowing exchange and development of a common set

30 A very good description of the ways in which societies in ancient Mongolia interacted with one another is given by William Honeychurch, *Inner Asia and the Spatial Politics of Empire, Archaeology, Mobility, and Culture Contact* (New York: Springer, 2015), 32-43.

31 For a discussion of social fields see Philip Kohl, "Shared Social Fields: Evolutionary Convergence in Prehistory and Contemporary Practice," *American Anthropologist* 110.4 (2008): 495-506.

32 Fundamental work on Eurasian metalwork has been undertaken by Evgenii Chernykh. E.N. Chernykh, *Ancient Metallurgy in the USSR, The Early Metal Age*, trans. Sarah Wright (Cambridge: Cambridge University Press, 1992). Many authors have now plotted the use of similar weapon types across Eurasia and into the borderlands of the arc, see for example 李剛,《中國北方青銅器的歐亞草原文化因素》(北京:文物出版社,2011);烏恩岳斯圖,《北方草原考古學文化研究:青銅時代至早期鐵器時代》(北京:科學出版社,2007);劉學堂、李文瑛,《中國早期青銅文化的起源及其相關問

of weaponry. Shared weapon types, borrowed by neighbouring groups, moved them in an eastward direction. In this way, spearheads, trilobed arrowheads, chisels, and large shaft-hole axes of the Sintashta-Petrovka types were taken east.³³ Going west were the weapons of the Seima-Turbino phenomenon, including spearheads with hooks, single-bladed knives and socketed axes with geometric designs.³⁴

In central China, by contrast, bronze was introduced into quite different types of society with already well-established, sedentary social and ritual practices. Extending and also replacing the ceramic repertoire employed for thousands of years, the most elaborate bronzes were used as food and wine vessels for offerings to the ancestors. Alongside the vessels, early Chinese weapons are not impressive. Complex sets of ritual food and drink containers were products of a highly centralised settled society, being made on a large scale, requiring a large, well-organised work force, for mining, smelting, mould preparation and casting. These new bronze vehicles for communication with invisible ancestral spirits were now as essential to the social and political life of the Shang and Zhou, as fine ceramics had been in earlier centuries. In central China, over time, hierarchical organisation, supported by writing, maintained common practices, among them the use of standard bronze ritual vessel types.³⁵

The popularity of weapons in the steppe and the arc and of vessels in central China defines the areas of these two distinct social fields. In the region of contact, a mixture of the types can be identified. These combinations prove essential in understanding the routes by which the Shang (and their Erlitou predecessors) acquired metallurgy and, over time,

題新探》，《藏學學刊》，2007年3期，頁1-63；邵會秋、楊建華，〈歐亞草原與中國新疆和北方地區的有銜戰斧〉，《考古》，2013年1期，頁69-87。On occasions the authors emphasise the stimulus provided by the wealth of central China and attribute the development of Northern Zone bronzes to that stimulus, without emphasising the relative independence of the northern tradition in the arc and the steppe, 楊建華、邵會秋，〈商文化對中國北方以及歐亞草原東部地區的影響〉，《考古與文物》，2014年3期，頁45-57。

33 E. N. Chernykh, *Ancient Metallurgy in the USSR, The Early Metal Age*, 225, fig. 78.

34 E. N. Chernykh, *Ancient Metallurgy in the USSR, The Early Metal Age*, 220-21, figs. 74, 75.

35 Bryan Pfaffenburger emphasises the role of ritual in stimulating technological change and ensuring continuity, "Social Anthropology of Technology," *Annual Review Anthropology* 21 (1992): 491-516.

developed their weaponry.³⁶

The Arc and Routes into Shang and early Zhou Central China

Bronze may have been introduced to the Central Plains by several routes: by way of Xinjiang or Mongolia and down the Hexi corridor, or across the Ordos area and into the basin of the Yellow River. Small quantities of early bronze use have come to light in all these regions;³⁷ similar fragments have also been discovered in the Chifeng area. The distribution of early metal in and around China follows three areas or ‘routes’, which continued to be the primary lines of connection with the north and west throughout the later Shang and early Zhou periods and are numbered below in figure 23, in connection with the introduction of swords. Studies by Cao Dazhi on the Loess Plateau and by Linduff and Yang on tombs in the Northern Zone have drawn attention to the combination of steppe-type weapons and ritual vessels along such routes.³⁸ In the Shang period, tombs either side of the Yellow River, where it flows south, indicate significant contact between the people of the Loess Plateau and the Shang centres. Cao argues that, as a good supply of horses was essential to the management of Shang chariots, trade in horses, which the people in the arc could supply, may have been one of the drivers that brought Shang

36 In tombs of the dates of the earliest bronze ritual vessels at Erlitou were knives in the tradition of the arc and the steppe and a spatula-like axe that also had parallels in Eurasia. These are presented with the early bronze vessels in Jianjun Mei, “Early Metallurgy in China: Some Challenging Issues in Current Studies,” 9-16, fig. 6. Two early forms of the dagger-axe, *ge*, are pointed and relatively straight, with slightly bevelled edges on the sides of the blade. This detail is also found on quite a number of steppe weapons, including those of the Seima-Turbino group, see a spearhead from Rostovka, and seems likely to have been borrowed from such a source, see Ludmilla Koryakova, Andrej Vladimirovich Epimakov, *The Urals and Western Siberia in the Bronze and Iron Ages* (Cambridge: Cambridge University Press, 2007), 107, fig. 2.26.

37 See Jianjun Mei, “Early Metallurgy in China”; Katheryn Linduff, “What’s Mine is Yours: The Transmission of Metallurgical Technology in Eastern Eurasia and East Asia,” in eds. Sharada Srinivasan and Srinivasa Ranganathan, *Materials and Civilization: BUMA VII Proceedings* (September, 2009): 8-14. Compare 李水城, 〈西北與中原早期冶銅業的區域特徵及交互作用〉, 《東風西漸：中國西北史前文化之進程》(北京：文物出版社, 2009), 頁 246-93。

38 Dazhi Cao, *The Loess Highland in a Trading Network (1300-1050 BC)* (unpublished thesis, Princeton University, 2014). Cao argues that Shang efforts to obtain a supply of horses underlay the movement of ritual vessels onto the Loess Plateau; Heidouzui in Chuhua Xian in Shaanxi has revealed many weapons with steppe features, 張文立、林沅, 〈黑豆嘴類型青銅器的西來因素〉, 《考古》, 2004 年 5 期, 頁 65-73; Katheryn Linduff and Yang Jianhua, “Ritualization of Weapons in a Contact Zone: Between Past and Present,” in Charles Hartley, Bike Yazicioğlu, Adam Smith, *The Archaeology of Power and Politics in Eurasia* (Cambridge: Cambridge University Press, 2012), 173-87.

vessels to the north and took steppe and arc style weaponry south to Anyang.³⁹

We can support this identification of the major early routes by noting the sites of the early Zhou period where similar combinations have been found. First, and best known, is the site of the Liulihe, part of the Yan state. Relatives of the royal Duke of Shao, had been despatched to the north by the Zhou king, to create and control the state of Yan, near present-day Beijing, well into the edge of the arc. The Yan state tombs, excavated in the Fangshan district, present a strong Zhou identity with high-quality and inscribed cast bronze vessels. But in addition, abundant shield or horse ornaments in the form of bosses, *pao*, and fittings with steppe features, such as horse-head ornaments, illustrate a rapprochement between the Zhou elite and a variety of local groups.⁴⁰

In both Gansu and western Shaanxi, by contrast, tombs at Lingtai and those of the Yu state at Baoji suggest that outsiders had moved in and taken up Zhou vessels (and associated ritual practices), while retaining many of their own customs and material culture, especially their weapons and their preference for decorative bosses, *pao*.⁴¹ A third tomb type, seen at Baifu at Changping near Beijing, must also have belonged to outsiders, but outsiders who did not visibly take up conspicuous Zhou practices. There are no ritual vessels, but a striking array of weapons that link the owners to peoples much further north and west.⁴² These different degrees of interaction illustrate the diverse routes and ways by which the peoples of the Central Plains were fairly continuously in contact with the peoples of the arc and, further out, with those in the Eurasian steppe.⁴³

39 朱鳳瀚，〈由殷墟出土北方青銅器看商人與北方族群的聯繫〉，《考古學報》，2013年1期，頁1-28。

40 For the report on the site see 北京市文物研究所，《琉璃河西周燕國墓地 1973-1977》（北京：文物出版社，1995）；see also Yan Sun, “Cultural and Political Control in North China: Style and Use of the Bronzes of Yan at Liulihe 琉璃河 during the early Western Zhou Period”, ed. Victor Mair, *Contact and Exchange in the Ancient World* (Honolulu: University of Hawai’i Press, 2006), 215-37; Yitzchak Jaffe, “Materializing Identity—A Statistical Analysis of the Western Zhou Liulihe Cemetery”, *Asian Perspectives* 51.1 (2013): 47-67.

41 甘肅省博物館文物隊，〈甘肅靈臺白草坡西周墓〉，《考古學報》，1977年2期，頁99-129；盧連成、胡智生，《寶雞魚國墓地》（北京：文物出版社，1988）。

42 北京市文物管理處，〈北京地區西周木槨墓的新啟示〉，《考古》，1976年4期，頁246-258。

43 For a study of the ways in which chariots entered China from the north, see Wu Hsiao-yun, *Chariots in Early China*, 64-6, fig. 3.7. Wu illustrates an important case of a chariot burial excavated at Luoyang with weapons typical of the arc.

With the geographical and archaeological framework in mind, we should now consider the weapons employed at Anyang.

Weapons in the Anyang period

There is no doubt that warfare was endemic in the Shang period, especially during the Anyang phase.⁴⁴ Moreover, the numbers of weapons buried in tombs of the highest elite greatly increased. Oracle bone inscriptions name some northern groups as the adversaries of the Shang.⁴⁵ Two major developments resulted from repeated interaction with the arc and the steppe. First of all, many of the standard weapons carried by what appears to be the infantry were modified forms of the types standard in the steppe and the arc, namely spearheads, socketed axes with geometric decoration, chisel-like axes, and single-bladed knives (fig. 12). The heavy shaft-hole axe, employed across the steppe (fig. 7), was never fully assimilated by the Shang or Zhou, presumably as the acquisition of status via prowess in personal combat was not recognised among the elite. Nevertheless, the *ge* dagger-axe was sometimes supplied with a socket. Figure 12 illustrates some parallels between weapons from Anyang and those from the two important Middle-Late Bronze Age communities in the steppe, the Sintashta-Petrovka culture east of the Urals and in the northern Kazakh steppes, and the renowned Seima-Turbino transcultural phenomenon, famous for thin-walled tin-bronze castings. Numerous sacrificed individuals or low level chariot drivers or soldiers buried at Anyang were accompanied by copies of steppe-type weapons, suggesting that peoples from the arc or the steppe were employed at Anyang, either as part of the infantry or as chariot managers (fig. 13).⁴⁶

These suggestions are supported by a second conspicuous feature of Anyang warfare, the import and development of the chariot, and associated technologies, from the steppe.

44 Discussions of Shang warfare are limited and usually very dependent on oracle bone texts, 宋鎮豪、羅琨，〈商代的戰爭與軍制〉（北京：中國社會科學出版社，2010）；Robin Yates, “Early China” in *War and Society in Ancient and Medieval Worlds*, ed. Kurt Raaflaub and Nathan Rosenstein (Cambridge Mass. and London: Harvard University Press, 1999), 7-45.

45 Shima Kunio has used evidence from oracle bone inscriptions to create a map that records the possible locations of these groups near the great bend of the Yellow River, Shima Kunio, *Inkyo bokuji kenkyū* (Hirosaki: Hirosaki daigaku Chūgoku gaku kenkyukai, 1958), 414.

46 朱鳳瀚，〈由殷墟出土北方青銅器看商人與北方族群的聯繫〉，頁 1-28。

The so-called chariot was first developed in the steppe, just east of the Urals, almost certainly as a light vehicle that could be pulled at speed by horses. From there, this light cart or chariot spread southwest to Western Asia and across Inner Asia to China. Traces of its movement over these enormous distances are marked by petroglyphs engraved on mountains. The steppe origins of the chariot found in central China, as it is now described, are clear.⁴⁷ Unlike the vehicles known from the eastern Urals, chariots at Anyang were, in many cases, decorated with small bronzes on the woodwork and horse harness. The drivers were very often equipped with steppe or northern-type knives, indicating the association between chariot driving and the steppe, or at least the arc, among the Shang.

The functions of chariots are debated. They must have been used for archery, as in hunting recorded on oracle bones, and they may have acted as command platforms for the elite in war. Archery from chariots was practised in the steppe and must certainly have been a new skill at Anyang. Buried ceremonially in pits, the importance of chariots was carried into the next life.

We can take an elite tomb at Anyang, M54 at Huayuanzhuang, as an illustration of these aspects of Shang warfare.⁴⁸ Its occupant seems to have been one of a relatively new group of members of the higher elite closely linked with combat. This is an impressive tomb with bronze ritual vessels, very similar to those in the tomb of Fu Hao, the consort of Wu Ding, suggesting a date in the same period, c. 1200 BC. As with all other intact high elite tombs at Anyang, it contained numerous weapons, possibly the equipment of an infantry force of around a hundred, though perhaps representing a far greater force.⁴⁹ There were 78 spears, 73 dagger axes, with 881 arrowheads. But the tomb also included six bow-shaped rein holders (or bow-fittings), most of them fully decorated, signs of high status in the use of chariots. In addition, three knives and a jingle are typical of the steppe and the arc (fig. 14), as are the 149 bosses, *pao*, which may have adorned shields, clothing, chariots or harness. In addition, an unusual sheet gold ornament carrying a star indicates

47 See Wu Hsiao-yun, *Chariots in Early China* for earlier discussions on this topic.

48 中國社會科學院考古研究所，《安陽殷墟花園莊東地商代墓葬》（北京：科學出版社，2007）。

49 Chen Zhida discusses different numbers of weapons in tombs for individuals of different status, 陳志達，〈殷墟武器概述〉，慶祝蘇秉琦考古五十五年論文集編輯組編，《慶祝蘇秉琦考古五十五年論文集》（北京：文物出版社，1989），頁 362-37。

further contact with outsiders.⁵⁰

The small knives (fig. 14) and the rein holders are sufficiently distinguished by their decoration to be seen as personal, though in steppe manner. Like Fu Hao herself, the occupant of tomb M54, as a military leader in central China, was free to admire and own such steppe items. But most striking among the weapons that can be interpreted as belonging to the occupant himself are seven *yue* axes, three long vertical blades⁵¹ and one large knife with an up-turned tip and a tang, which would have been held in a hilt of some organic material, now lost (fig. 15). This last example can be interpreted as originating from the shape of a steppe knife, here much enlarged to give it symbolic status.

Other tombs, such as that of the royal consort, Fu Hao, and the late Shang tomb, M160 at Guojiazhuang, also have impressive versions of these three weapon types: Fu Hao had four *yue* (fig. 1a), no vertical blades, but ten knives with up-turned tips and perforated flanges along the back edge, making them conspicuous.⁵² The occupant of M160 at Guojiazhuang had three *yue* axes, two large vertical blades and one knife with an upturned tip.⁵³ This example has a ring handle, recalling steppe knives from which the shape was derived. The same feature is also seen on a rare graph (fig. 3d). All three weapon types share a large flat surface, reminiscent of earlier Neolithic jade blades. The axe is directly based upon jade axes, especially those with a large, almost central hole, as in examples from the Liangzhu culture near Shanghai or later versions seen at Erlitou. The small horizontal holes along the edge of the axe mirror those on the vertical knives. Both recall the line of circular holes seen on some large jade blades, especially those based upon

50 Gold during the Shang period was almost always connected with outsiders. For a survey of some of the early uses of gold in China see Emma Bunker, "Gold in the Ancient Chinese World: A Cultural Puzzle," *Artibus Asiae*, 53.1/2 (1993): 27-50.

51 The typology of these narrow vertical knives is not well understood. Early examples are very narrow, as in a pair found at Panlongcheng 盤龍城, see 湖北省文物考古研究所, 《盤龍城: 1963 至 1994 年考古發掘報告》(北京: 文物出版社, 2001, 冊 2), 圖版 96。Late examples have tubular lugs, not small holes, for attachment to a staff, as in the Changzikou 長子口 tomb at Taiqinggong 太清宮 in Luyi Xian 鹿邑縣, Shandong Province, see 河南省文物考古研究所、周口市文化局, 《鹿邑太清宮長子口墓》(鄭州: 鄭州古籍出版社, 2000), 彩圖版 67。This form was widely used and taken up in the arc, where simplified forms were also made in the early Western Zhou period.

52 中國社會科學院考古研究所, 《殷墟婦好墓》, 頁 105-106、101-102。

53 中國社會科學院考古研究所, 《安陽殷墟郭家莊商代墓葬》(北京: 中國大百科全書出版社, 1998), 頁 105-7、111。

reaping knives.

What these three examples illustrate is a tendency to create weapons for visual display in battle, or perhaps primarily for ceremony, that had large conspicuous blades, typical of the Neolithic jade tradition. All three weapons appear in graphs in bronze inscriptions (figs 3a, 3c, 3d). Both the knives are shown as held vertically. On the basis of these facts, we can recognise that these large weapons were highly valued and were intended to be conspicuous, as they are in the graphs. However the graphs are rare by comparison with those including a dagger-axe (fig. 3b); the numbers of people with such weapons were probably relatively small.

It seems unlikely that the elite put themselves at risk in individual combat with such unwieldy weapons. Their role would have been as organisers and leaders of groups of infantry, whether on foot or from a chariot. In battle, they are likely to have been protected by the force that they commanded. Thus military command was probably keenly celebrated, but was not primarily seen as depending upon individual prowess on the lines of the combat skills of the Bronze Age warrior. Indeed, inscriptions on weapons and representation of weapons in graphs would suggest that warfare and the high-ranking individual in war were subsumed within a larger social-military system, controlled ultimately by the Shang king.

Jade copies of weapons in such tombs as M54 also indicate some strong central control, as jade manufacture must always have been highly organised. It involved the acquisition of a very rare material from some distance and its working, a long painstaking process, required high skill. Tomb M54 held seven jade axes, eight dagger-axes, *ge*, two spear heads and a further two with jade blades in bronze mounts, and one copy in jade of the broad bladed knife (fig. 16).⁵⁴ These examples indicate that the Neolithic jade tradition continued or was even revived in the late Shang. The jades also illustrate a direct ritualization of warfare, turning combat, with the death it entails, into a ceremonial practice embodied in a material that the peoples of central China had valued highly from the Neolithic. We do not know what such ceremonies might have involved, but, visually,

54 中國社會科學院考古研究所，《安陽殷墟花園莊東地商代墓葬》，頁 184-198。

jade gave weapons an additional and non-human value, removing their functional sharp edges, replacing them with the softer surface of the precious stone.

Large numbers of beautifully-made jade copies of weapons buried in Shang tombs were probably more than simply depositions made ceremonially by the living. Ancient Chinese tombs were provisioned to ensure the well-being of the occupant. Therefore, it seems probable that jade weapons were to protect the tomb occupants against harm from demons and ghosts.⁵⁵ Jade cannot kill the living, but might well fend off evil spirits. I shall take this theme up later in the paper in connection with the Eastern Zhou, Qin and Han, for which periods we have yet further evidence.

If then we sum up the evidence from tomb M54, we see close links with the steppe, or at least the arc, in standardised weapons (fig. 12) and special features, such as the small knives (fig. 14) and rein holders. At the same time, ancient traditions of the Central Plains were presented in large-bladed bronze weapons (fig. 15) and ritual weapons in jade (fig. 16).

We can now think about how we might use this information with respect to the main Shang fighting forces; we can see that they may have been made up of a number of elite leaders accompanied by their own personal infantry. They seem to have owned or to have been allocated chariots by the ruler or local lord. The chariots were almost certainly the platforms for archers, who were a significant component of the Shang army, given the large number of arrowheads found in tombs, over 800 in tomb M54. In addition, from the over 700 weapons recovered from a looted royal Anyang tomb, M1004, we know that the king too had a large personal force. We can recognise from a few oracle bone inscriptions that a late Shang force might have been in the region of 3000-5000 men in size; the king did not always lead, but delegated this duty to named individuals.⁵⁶

To interpret the Shang enterprise, we need to return to the general characteristics of the activities in the Central Plains, namely the relatively dense population, organised

55 This suggestion is raised by Alain Thote with reference to Neolithic tombs of the Liangzhu culture, Alain Thote, "Shang and Zhou Funeral Practices: Interpretation of Material Vestiges" in ed. John Lagerwey and Marc Kalinowski, *Early Chinese Religion, Part One: Shang through Han (1250BC-220AD)* (Leiden and Boston: Brill, 2009), 103-42.

56 The largest force recorded for the Shang is 10,000 under King Wu Ding, with another group of 3,000, see Robin Yates, "Early China," 13.

for manufacture as well as for war, on a basis of some subdivision of labour, with tasks relatively rigidly assigned. The large numbers of almost identical weapons and, indeed, chariots are themselves evidence of the large-scale production overseen by the state. Some members of the elite were certainly present in the fighting force, but how they contributed to the organisation of battle, and who was the supreme leader at any one time we do not know. While these elites certainly had high military status, as seen in their large-bladed weapons, it seems unlikely that, at this stage, the Shang valued individual military prowess of the kind celebrated in northern Europe and the Mediterranean world and so vividly recorded later by Homer in the *Iliad*. The very early establishment of an army of massed infantry and the absence of a warrior class famous for hand-to-hand combat set the template for warfare for the following thousand years.

Many of the Shang traditions were continued by the early Zhou. However, several modifications were made. Among the infantry weapons, dagger-axes and arrowheads dominated. Spears were less important, though the combination of a spearhead and a dagger-axe in a type of halberd known as a *ji* 戟 enjoyed some esteem. On present evidence, the fine, wide-bladed elite bronze weapons declined after the early Zhou, as did the number of jade weapons. On the other hand, from inscriptions in bronze vessels, we know that chariots were presented to nobles by the king, and formal archery ceremonies were significant aspects of ritual.⁵⁷ These were the personal emblems of elite status, expressed indeed in military terms. The Zhou, in developing a four-horse chariot, had even advanced steppe traditions within a central Chinese framework. Burials of massive numbers of chariots alongside individual tombs indicate the high status that these chariots conferred and their importance to the Zhou concept of the afterlife.

In part, the fascination with chariot display was one aspect of Zhou choices to exploit steppe fashions in new and ritualised contexts. For the steppe people did not bury chariots so extravagantly. In the same spirit, the Zhou borrowed elaborate beaded ornaments,

57 For inscriptions mentioning gifts of chariots see Wu Hsiao-yun, *Chariots in Early China*, 71-4. Ritual archery contests are described in 袁俊傑,《兩周射禮研究》(北京:科學出版社,2013)。

originating in the paired headdress hangings employed by women in the steppe.⁵⁸ But the Zhou made them in ostentatious sizes, with jade, carnelian and other semi-precious stones.⁵⁹ The numerous chariots and the conspicuous headdress ornaments had become essential aspects of Zhou identity within a Central Plains interpretation of both status and war in the afterlife. Such an interest in imitating, but reworking, steppe traditions anticipates the ways in which the Zhou later took over the sword from the borderlands, but, at the same time, without adopting steppe prowess as individual warriors. For as in the Shang, hand-to-hand combat by the elite seems to have been absent. It is to further possible evidence of this type of contest that we must now turn.

Changes in the Steppe

In the cemetery of the small Rui state at Liangdaicun near Hancheng on the Yellow River (where it flows south between the provinces of Shaanxi and Shanxi), a Lord of Rui was interred in a tomb, M 27, dated to the eighth century, following some standard Zhou practices.⁶⁰ He had fine, late Western Zhou ritual vessels and jade copies of weapons, perhaps of Shang date. But, in addition, he had a blaze of golden bosses and fittings (fig. 17); his consorts were embellished also with carnelian beads spread across their upper bodies imitating the steppe ornaments mentioned above; the lord was equipped with bronze-handled iron knives and buried with armour made from small hammered bronze

58 Jessica Rawson, "Ordering the Exotic: Ritual Practices in the late Western and Early Eastern Zhou," *Artibus Asiae* 73.1 (2013): 5-74 discusses the way in which a borrowing of steppe practices was in some measure a way of changing dress or costume and even ritualising them, but did not transform the Zhou elite into steppe warriors.

59 A full survey of this form of headdress type ornament is given in 黃翠梅, 〈流光溢彩·翠繞珠圍——西周至春秋早期的梯形牌聯珠串飾〉, 陳光祖主編, 《金玉交輝——商周考古、藝術與文化論文集》(臺北: 中央研究院歷史語言研究所, 2013), 頁 559-600。

60 For a full discussion of the tombs of the Rui state 芮國 at Liangdaicun 梁代村 and references for related material see Jessica Rawson, "Ordering the Exotic". The dagger in the gold scabbard is of jade, exchanged for bronze or iron, to meet Chinese ritual conventions. In shape, it resembles daggers of the Tagar culture in the steppe and equivalent weapons in the Northern Zone. Otherwise, copies in jade of daggers and swords are extremely rare. More usual was the reproduction of thumb rings in jade. For a paper developing the topic based upon the gold thumb rings excavated at Liangdaicun, see 徐汝聰, 〈用韃及韃佩——以梁帶村芮國墓地M27出土韃為例〉, 陝西省考古研究院、上海博物館編, 《兩周封國論衡: 陝西韓城出土芮國文物暨周代封國考古學研究國際學術研討會論文集》(上海: 上海古籍出版社, 2014), 頁 221-35。

plates linked together. A scabbard in gold, which in death held a jade version of a bronze dagger, is an important indication that steppe weapons for high-ranking individuals had been adopted by the Zhou elite, while gold thumb-rings reinforce the value of archery (fig. 18). We have, however, to ask why did the Lord of Rui imitate the weapons and ornaments of the arc peoples? Did he simply admire the style of his neighbours, or was he preparing to meet them as equals in the combats of the afterlife?

All three materials, gold, iron and hammered bronze, were new to the Central Plains. They had a much longer history in the steppe, as did short daggers (fig. 4). Taken together, they are good signs by which to plot steppe and arc interaction with the Central Plains.

As with the Shang interest in steppe weapons and chariots, pressure from steppe peoples brought about these changes. Attacks from the north on Zhou territory are well recorded in bronze inscriptions, such as that on the Duo You *ding*, which describes a major chariot battle with the Xianyun.⁶¹ Moreover, it was defeat in a conflict with the Western Rong in 771 BC that drove the Zhou from their capital near present-day Xi'an. Yet at this very moment, the lords of Rui effectively borrowed a steppe outfit by showing their interest in gold, iron and armour. It seems that the peoples of the borders were admired as well as feared.

We can look first at Mongolia to explain this shift, for a new development, the creation of large stone monuments, khirigsuurs (fig. 19) and deer stones (fig. 20), marks significant on-going changes in steppe societies. These impressive structures are widespread across western and central Mongolia, dating from 1400-700 BC.⁶² It would have taken a large labour force to create the mounds of stones that make up khirigsuurs, which seem to have been both burial and ceremonial sites for central figures of the many small groups of Mongolian mobile pastoralist societies. The stone-built mounds were

61 For a discussion of the inscription in the Duo You *ding* and the battles of the Zhou with the Xianyun see Li Feng, *Landscape and Power in Early China, The Crisis and Fall of the Western Zhou, 1045-771 BC* (Cambridge: Cambridge University Press, 2006), 141-91.

62 William Honeychurch, *Inner Asia and the Spatial Politics of Empire*, 112-22. Francis Allard, Diimaajav Erdenebaatar, Sandra Olsen, Alyssa Cavalla and Erika Maggiore, "Ritual and Horses in Bronze Age and Present-Day Mongolia: Some Preliminary Observations From Khanuy Vally," in eds. Laura Popova, Charles Hartley and Adam Smith, *Social Orders and Social Landscapes* (Newcastle: Cambridge Scholars Publishing, 2007), 151-67.

surrounded by stone enclosures, rectangular or circular in plan, beyond which were placed many small satellite burials. Most of these smaller mounds cover horse heads and sometimes also bones and hooves. In some tombs are horse fittings, such as bits. Parts of hundreds of horses might be interred over time around a major khirigsuur (fig. 19).⁶³

Two developments had taken place. The peoples of the steppes had extended the practice of riding, developed further west, across south Siberia as well as Mongolia, accompanied by the burial of horses at monuments. Concurrently their societies had become increasingly stratified, with powerful individuals dominating ‘commoners’ in their groups and demanding resources in the form of herded animals and manpower from their dependents, as well as in creating monuments.

Deer stones tell the same story (fig 20). Although the majority are stylised, a few of these tall, originally standing, stones have a human head carved on one side at the rounded top, sometimes with temple rings shown on two of the other three sides, perhaps representing a powerful individual, or the more general concept of powerful leaders. The monuments get their name from stereotyped engraving of stags, in tiers on the main part, the body of the individual, perhaps indicating tattoos or appliqué decoration on clothing. Then comes a horizontal belt and from this hang weapons, especially knives or daggers, and shafted axes, with curved rein holders below (fig. 20). A shield is often shown higher up. Not only do these deer stones represent people, they memorialise the achievements of warriors with their personal weapons.⁶⁴ The stags are aspects of the so-called ‘animal style’, which took motifs from several sources, including Western Asia and China, to become the favoured decorative tradition of the mounted pastoralists across the whole of

63 For discussions of the role of khirigsuurs in Mongolia, see Joshua Wright, “Organisational Principles of Khirigsuur Monuments in the Lower Egiin Gol Valley, Mongolia,” *Journal of Anthropological Archaeology* 26 (2007): 350-65; Francis Allard and Diimaajav Erdenebaatar, “Khirigsuurs, Ritual and Mobility in the Bronze Age of Mongolia,” *Antiquity* 79 (2005): 547-63; William Honneychurch, Joshua Wright and Chuang Amartuvshin, “Re-writing Monumental Landscapes as Inner Asian Political Process,” in *Social Complexity in Prehistoric Eurasia, Monuments, Metals and Mobility*, ed. Bryan Hanks and Katheryn Linduff (Cambridge: Cambridge University Press, 2009), 330-57.

64 V. V. Volkov, *Olennye Kamni Mongolii* (Ulaanbataar: AN MNR Press, 1981), 202, fig. 79. 沃爾科夫, 《蒙古鹿石》, 王博、吳妍春譯 (北京: 中國人民大學出版社, 2007)。E. A. Novogrodova, *Drevnyaya Mongoliya* (Moscow: Nauka, 1989), 188, illustrates the weapons on deer stones.

Inner Asia, including, in due course, the arc.⁶⁵

The khirigsuurs and deer stone complexes, therefore, indicate that over the late second and early first millennium, the peoples in Mongolia were increasingly mobile and had a more intense interest in the visual presentation of power. These groups now had well-recognised leaders on whose individual success their strength depended; as the deer stones indicate, the leaders were fighters; they could form larger groups as their success over their neighbours increased and they could undertake large projects, such as the creation of khirigsuurs. These developments had probably had an impact on the peoples in the arc who had then interacted with the late Shang and early Zhou states.

But a further stimulus for action among the pastoralists came with the use of iron for tools and weapons. Iron had probably first been used widely in Anatolia and the Caucasus, being taken into the steppe at the beginning of the first millennium BC. From no later than 900 or 800 BC, iron reached the eastern steppe and the arc, as we can see from the iron-bladed knives in the Rui state tomb. By this date, societies were linked across the whole of northern Eurasia, and their exchanges can be plotted through the tombs for major steppe leaders with their iron weapons embellished with gold and silver.⁶⁶ The map in figure 21 illustrates the gold-embellished iron weapons shared across this vast region. Their proud owners took the leadership and organisation memorialised in the khirigsuurs and deer stones a whole stage further, with very strong visual displays of their personal wealth and authority in weaponry and dress. The abundance of gold ornaments and fine weaponry is really extraordinary and suggests large concentrations of wealth. Among the ornaments are belt plaques in ‘animal style’, found from the borders of central China all the way to the Black Sea and beyond. The shared traditions of gold and silver embellished personal weapons, horse burials and animal motifs on weapons, harness and on dress record the close links that were sustained between very different groups of mobile pastoralists over

65 The deer stones anticipate what is often rather misleadingly called the Scythian triad of weapons, horse equipment and animal style ornament, as in A.M. Khazanov, ‘The Scythians and Their Neighbors’ in R. Amitai and M. Biran (eds.) *Nomads as Agents of Cultural Change: the Mongols and their Eurasian Predecessors* (Honolulu: University of Hawai’i Press, 2015), 33. Indeed, in other areas of Eurasia the triad may have been prominent at the same period or earlier.

66 For an overview of the tombs of steppe leaders across northern Eurasia who possessed iron and gold and illustrate contact across a vast area, see Hermann Parzinger et al., *Im Zeichen des Goldenen Greifen, Königs Gräber der Skythen* (Munich, Berlin, London, New York: Prestel, 2008).

several centuries.

The great kurgans at Arzhan I and II (fig. 21j) in the Tuva Republic, of the ninth to seventh century BC, mark one of the early centres where iron weapons with gold ornament were displayed as status symbols.⁶⁷ Thereafter, these spread east and west. Such contagion is evidence of the strong social field across the steppe. The apex of this movement came in the fourth and third centuries BC, before the rise of the Xiongnu and their attacks on the Qin and Han states. In all probability, the widespread use of riding and the growing availability of iron increased the militarisation of steppe life, and with greater competition in the steppe, the northerners were also more of a problem for the sedentary peoples of the Central Plains. However, it is evident that the central Chinese not only feared but also admired and emulated their neighbours, as the tomb of the Lord of Rui clearly illustrates (fig. 18).

Iron weapons and golden ornament in the arc

Examining a map of eastern Kazakhstan, Siberia and Mongolia - to the north of present-day China - offers us ways to interpret movement towards the Central Plains as the pressures of the mobile peoples mounted (fig. 22). The lines of the roads, railways and rivers indicate possible routes across both the steppe and desert, avoiding the very highest mountains. Only the Gobi really presents a major obstacle, and, in periods of greater moisture, this barrier too would have dissolved. Sites in the arc illustrate the several routes by which iron, gold and perhaps also armour crossed into the arc and on to enter the Central Plains (fig. 23). These recall the sites already mentioned along the three major routes of contact in Shang and early Zhou times.

The site of Liangdaicun on the Yellow River stands on what I have labelled as the second route, crossing out of central Mongolia, over the Ordos into the valley and plains of the basin. This central route passes many other sites where earlier communities had owned both steppe-type weapons and some Shang ritual bronzes. Liangdaicun is also

⁶⁷ Konstantin Čugunov, Hermann Parzinger, and Anatoli Nagler, *Der skythenzeitliche Fürstengurgan Aržan 2 in Tuva* (Mainz: Verlag Philipp von Zabern, 2010).

the earliest site on the southern edge of the arc to illustrate the combination of iron blades, gold ornament, red beads and small plates of bronze armour. Of course, gold, carnelian beads and hammered bronze shield ornaments are found at several other sites in the arc, often much earlier in date. These only serve to highlight a continuous trickle of cultural practices and material from the steppe into the arc and the on-going adaptation of these novelties by the peoples who lived there.

Western routes out of Mongolia and down into the Gansu corridor, labelled as route one (fig. 23), were also clearly significant. Gold replicas of small armour scales and horse armour were found in pre-dynastic Qin tombs at Li Xian (fig. 21k), probably dating to the eighth century BC. A golden feline came from the same looted complex, while the fragments of a later iron dagger with a guard and pommel in gold were recovered nearby.⁶⁸ The same combinations of materials, albeit on a much grander scale, enriched tombs of later outsiders at Majiayuan in Gansu province, in what is sometimes described as a cemetery the Western Rong (Xi Rong) (fig. 21l). This burial group, consisting of almost sixty tombs, displayed great luxury in terms of belts, neck ornaments, beads and earrings, with numerous iron implements, some decorated as befitting the personal weapons of the highest elite. The extravagant use of gold and iron is unlike anything seen in central Chinese tombs. Weapons, ornaments, beaded clothing all match the display of wealth in tombs of other steppe leaders, notably the occupants of Arzhan II. Indeed, the people at Majiayuan favoured the weapons, horse equipment and animal ornaments of their neighbours. The many chariots found in the Majiayuan graves were also exquisitely ornamented in bronze, silver, gold and iron.⁶⁹

In the northeast, a third route brought steppe practices into the Beijing region,

68 The gold was partially looted, though some has now been returned to the Gansu Provincial Museum, see 禮縣博物館、禮縣西陸文化研究會，《秦西陸陵區》（北京：文物出版社，2004），頁 32-42；for the fragments of an iron dagger or sword with gold fittings from Yuandingshan in the same area, see page 104.

69 Brief reports on the tombs have been published in journals. The finds are summarized with good illustrations in 甘肅省文物考古研究所，《西戎遺珍：馬家塬戰國墓地出土文物》（北京：文物出版社，2014）。

where a large cemetery has been excavated at Yuhuangmiao, Judunshan (fig. 23).⁷⁰ While there is no iron, many of the tombs contained personal weapons, axes and daggers placed at the waists of the tomb occupants; they wore lavish bronze belts and chains of ornament and, like the lord of Arzhan II and the Xi Rong at Majiayuan, a few display crescent-shaped ornaments of gold or bronze around the neck.⁷¹ A close steppe link is seen in bronze S-shaped ornaments in tomb M230 at Yuhuangmiao that are shaped exactly like ones in gold from Arzhan II in the Tuva.⁷² Combinations of ornaments, personal weapons and various forms of armour made up a new and significant package. All are typical of steppe peoples and all made strong inroads into the arc during the sixth to third centuries.

Before following the major routes into central China, a short digression on the matter of armour is needed. For armour, like so much of the weaponry and ornament mentioned already, seems almost certainly to be an introduction from the steppe.⁷³ Bone and antler armour has been reported from several Siberian Middle-Late Bronze Age sites related to the Seima-Turbino transcultural phenomenon and the Glazkovo culture. Examples from Rostovka, Lebedi II, and Sopka II (Omsk Province); Perevoznoi (Krasnoyarsk Krai) and Ust'-Ilga (Cisbaikal) all fall within the period from 2300 to 1300 BC.⁷⁴ These may well have inspired the leather armour said to have been found at Anyang M1004. There is little further evidence of armour in the Shang period, though we must accept the possibility that organic materials, such as leather, may have decayed beyond recognition.⁷⁵ A few bronze helmets also found in a royal tomb at Anyang seem likely to have been inspired by steppe practice, where leather hats and helmets may have been quite common. Bronze versions

70 For the four volume archaeological report see 北京市文物研究所編，《軍都山墓地：玉皇廟》（北京：文物出版社，2007）。

71 北京市文物研究所編，《軍都山墓地：玉皇廟》，冊4，頁47-9，圖版26-31。

72 Compare 北京市文物研究所編，《軍都山墓地：玉皇廟》，冊4，頁376，圖版3-4，with Konstantin Čugunov, Hermann Parzinger, Anatoli Nagler, *Der skythenzeitliche Fürstentum*, pl. 31, 52.

73 Armour was another major possession of the Bronze Age warrior in Europe, see A. F. Harding, *European Societies*, 285-91.

74 For Ust' Ilga and Perevoznoj, see A. P. Okladnikov, *Neolit I Bronzovij Vek Pribajka'ya: Glazkovskoe Vremya*. For Lebedi II, see E. N. Chernykh, E. V. Kuz'minykh, L.B. Orlovskaya, in *Ancient Metallurgy of Northeast Asia: From the Urals to the Saiano-Altai*, in: ed. Kathryn Linduff, *Metallurgy in Ancient Eastern Eurasia from the Urals to the Yellow River* (Lampeter: Edwin Mellen press, 2004), 15-36.

75 For a survey of Chinese armour, starting with the Eastern Zhou see 白榮金、鐘少異，《甲冑復原：中國傳統藝術全集》（鄭州：大象出版社，2008）。For an illustration of decorated Chinese armour, see 宋鎮豪、羅琨，《商代的戰爭與軍制》，頁471，圖6-22。

of these leather-like helmets occur at a few later sites in the arc and Mongolia.⁷⁶ Armour and helmets make a lot of sense in the context of close fighting among the elite. With less emphasis on such individual combat by the Shang and early Zhou, armour and helmets may have been less desirable.

However, it is surmised, based on a few inscriptions that show a figure with a weapon and a box-shaped object, that the Shang had shields (fig. 3e). A whole range of round bosses, *pao*, may have been part of such shields, though many small ones of Shang date were used as chariot and horse harness decoration. These bosses turn up early in tombs at Erlitou and Panlongcheng.⁷⁷ Similar examples are known from sites in the arc, and more broadly in the steppe and Western Asia.⁷⁸ A notable group of larger examples embellished shields found in the tombs of the Yu state at Baoji, whose rulers are often discussed as ‘outsiders’.⁷⁹ In Gansu, excavations of Western Zhou tombs have produced a few massive *pao* of hammered rather than of cast bronze. As mentioned in the context of the armour at Liangdaicun, these too can be seen as an indication of contact with the north and west.⁸⁰ Such bosses were widely used in the steppe, both as decoration and on shields to increase the ways in which sword attacks could be fended off.

76 For a surveys of the use of helmets see 王彤,〈中國北方商周時期的銅冑〉(長春:吉林大學博士論文,2004); for a comparison of Northern Zone and Mongolian helmets see Diimaajav Erdenebaatar, “Burial Materials Related to the History of the Bronze Age in the Territory of Mongolia” in ed. Kathryn Linduff *Metallurgy in Ancient Eastern Eurasia from the Urals to the Yellow River*, 189-221. Y. S. Hudiakov and N. Erdene-Ochir, “Bronze Helmet Recently Discovered in Mongolia,” *Archaeology Ethnology & Anthropology of Eurasia*, 38/1 (2010): 53-60.

77 It seems likely that such bosses were developed further west, where individual combat was standard, in Western Asia and the steppe, for in both regions they remained in use throughout the Bronze Age. We know that bosses were employed in the second millennium in the Mediterranean from illustrations of shields of the Mycenaean period (see John Chadwick, *The Mycenaean World* (New York: Cambridge University Press, 1976), 163 for the use of metal bosses as reinforcement for shields). Bosses may simply have been developed independently in different parts of Eurasia, but from the late second millennium they seem more closely associated with the arc than with central China. For bosses from Erlitou see 中國社會科學院考古研究所,《偃師二里頭 1959 至 1978 年考古發掘報告》(北京:中國大百科全書出版社,1999),頁 255-56; for Panlongcheng 盤龍城 see《盤龍城》,冊 2,圖版 52。

78 Examples, from Zhukaigou, Pinggu xian and Liulihe and others in the arc are illustrated and described in 李剛,〈中國北方青銅盾飾研究〉,《文物考古》,2006 年 2 期,頁 45-54。

79 For a discussion of the traits seen in the Yu tombs that derive from the arc, see Jessica Rawson, “Miniature Bronzes from Western Zhou tombs at Baoji in Shaanxi Province,” *Radiance between Bronzes and Jades — Archaeology, Art and Culture of the Shang and Zhou Dynasties* (Taipei: Institute of History and Philology, Academia Sinica, 2013), 23-66.

80 甘肅省文物考古研究所,《崇信于家灣周墓》(北京:文物出版社,2009),彩圖版 5:1。

Entering Central China

The three conspicuous routes mentioned above can be tracked fairly clearly into central China. We will begin by looking more closely at the central route, down the Yellow River, where the Rui lords competed with their arc neighbours in the display of gold, iron blades and armour. Here, we find closely related traces of this contact in many of the other central states, such as those of Jin,⁸¹ Guo,⁸² Ying and Lu,⁸³ where similar belts and iron weapons were adopted.⁸⁴ However, these traces of the northern 'style' were accommodated within sets of burial practices that, in most other respects, were typical of the Zhou.

Much more closely allied to the steppe and arc are sites in the western Wei valley, where people took up innovations that were introduced along the western route through Gansu. Near Baoji, a tomb at Yimencun was enriched by fine iron swords with elaborate hilts, but held no bronze vessels, confirming that the tomb occupant was not part of the Zhou culture, but belonged to one of the border communities in the arc.⁸⁵ Ornaments, such as belt hooks, found in this grave were also made from gold.⁸⁶ Further Qin state items were found in the immense robbed sixth century tomb assigned to Duke Jing (r.

81 Eighth century Jin state tombs, M8 at Beizhao and a large one at Yangshe, both in southern Shanxi, display triangular gold belt ornaments very similar to those at Liangdaicun; for tomb M8 at Beizhao and the tomb at Yangshe see 北京大學、山西省考古研究所,〈天馬曲村遺址北趙晉侯墓地第二次發掘〉,《文物》,1994年1期,頁4-28,彩圖版1;山西省考古研究所,曲沃縣文物局,〈山西曲沃羊舌晉侯墓地發掘簡報〉,《文物》,2009年1期,頁4-14、26,圖14、15。

82 Gold belt ornaments were found at the important Guo state site at Sanmenxia, where a now famous iron dagger with a jade hilt was recovered from tomb M2001 and a bronze halberd, *ge*, with an iron cutting edge. 河南省文物考古研究所、三門峽市文物工作隊,《三門峽虢國墓》(北京:文物出版社,1999),冊2,彩圖版11、12。

83 王龍正、孫新民、王勝利,〈平頂山市北澧村兩周墓地一號墓發掘簡報〉,《華夏考古》,1988年1期,頁30-44;山東省文物考古研究所、山東省博物館、濟寧地區文物組、曲阜縣文管會,《曲阜魯國故城》(濟南:齊魯書社,1982),頁119,圖版72、頁121,圖版74、頁122,圖版75。

84 A gold tiger from a Zheng polity tomb at Zhengzhou also indicates steppe contact, 鄭州市文物考古研究所、登封市文物局,〈河南登封告成東周墓地三號墓〉,《文物》,2006年4期,頁4-16,圖版20、21。

85 寶雞市考古工作隊,〈寶雞市益門村二號春秋墓發掘簡報〉,《文物》,1993年10期,頁1-14。

86 This kind of gold display had a profound effect on the bronzes cast in the sixth to fifth century at Houma, granulation and striation being copied in detailed bronze surfaces, as outlined in Jessica Rawson, *Chinese Jade from the Neolithic to the Qing* (London: British Museum, 1995), 60-7.

576-537 BC).⁸⁷ These are primarily small steppe-style gold ornaments, overlooked when this major tomb was robbed, perhaps soon after burial. Other finds have come from Majiazhuang at Fengxiang.⁸⁸ In addition, in the late Eastern Zhou, craftsmen in the Xi'an area were actively casting belt-plaques for consumers in the arc, as seen in moulds and models found in a caster's tomb.⁸⁹

Turning to the east, to the third major route, we see another range of incursions and new interpretations within central and eastern China. Here sites in Shandong and Anhui show more than a straightforward borrowing of steppe and arc materials; several unusual tombs reflect the burial practice of the northerners more directly. Two striking examples are the tomb of Duke Jing of Qi (547-489) at Heyatou, Linzi (fig. 24)⁹⁰ and a circular tomb at Bengbu in Anhui, attributed to the Zhongli state (fig. 25). Both tombs share the unusual feature of a separate central chamber for the coffin and a secondary chamber for objects. In the case of the Shandong tomb, these were both robbed. The Zhongli tomb had subordinate burials of individuals entered in their own coffins. This sort of arrangement of accompanying individuals is also found at Langjiazhuang in Shandong at the same period.⁹¹ These separate coffined burials for attendants are highly unusual in the Central Plains, but fit well with steppe practice, as in the large kurgan of Arzhan II.

Other features that suggest contact with the steppe are, first, the stone linings of boulders that surround the central coffin area in the Shandong tombs,⁹² and second, a trench around the main tomb at Heyatou filled with 600 horses in neatly arranged rows. Possible referents for such extravagant horse burial are the horse heads found in the

87 Carol Michaelson, *Gilded Dragons, Buried Treasures from China's Golden Ages* (London: British Museum Press, 1999), 25-26; 韓偉等,〈鳳翔馬家莊一號建築遺址發掘簡報〉,《文物》,1985年2期,頁1-18。

88 Carol Michaelson, *Gilded Dragons*, 29-30; see also 韓偉等,〈鳳翔馬家莊一號建築遺址發掘簡報〉,頁1-18。

89 陝西省考古研究所,《西安北郊秦墓》(西安:三秦出版社,2006)。

90 張學海、羅勳章,〈齊故城五號東周墓及大型殉馬坑的發掘〉,《文物》,1984年9期,頁14,圖2。

91 山東省博物館,〈臨淄郎家莊一號東周殉人墓〉,《考古學報》,1977年1期,頁73-123;山東地區博物館、臨沂地區文物組、莒南縣文化館,〈莒南大店春秋時期莒國殉人墓〉,《考古學報》,1978年3期,頁317-345。

92 A tomb in Shandong, later than the Linzi and Bengbu examples discussed, but retaining stone boulders around the central deposition was found at Xindian 辛店 also in Linzi 臨淄, see 臨淄區文物局,〈山東淄博市臨淄區辛店二號戰國墓〉,《考古》,2013年1期,頁32-58。

satellite graves of the khirigsuurs in Mongolia (fig. 19). Slightly less systematic horse burials were interred in Arzhan II in the Tuva. Further west in the steppe, at a Scythian site at Kostromskaja, in the northern Caucasus, sacrificed horses were also buried around the main tomb.⁹³

Circular tombs at Bengbu and also at Fengyang in Anhui illustrate other Chinese transformations of steppe practices.⁹⁴ At Bengbu (fig. 25), the tomb has a stepped entrance, similar to the stepped access for the tombs at Majiayuan and later in some Mongolian Xiongnu burials. The contents here remain intact and are very revealing. A separate chamber with artefacts includes a defined section for animal bones. In the elite tombs of central China, apart from dogs in Shang and early Zhou burials, animals were not buried with the main tomb occupant. But of course such combined burials were more or less ubiquitous in the steppe, and many animal heads and bones were buried with ‘outsiders’ at Majiayuan. Given the very unusual structure of the Shandong and Anhui tombs, it seems possible that not only was there a channel of communication between communities in the eastern regions and those of the northern steppe, but that the elites of this region had absorbed northern outsiders into their courts, who would have been able to give advice on burial practice. Like the Lords of Rui, the elite at Bengbu were presenting themselves in the afterlife with a hybrid identity, combining Zhou ritual with some possessions and some aspects of tombs typical of their martial northern neighbours.

The Zhongli tomb held large numbers of copper or bronze armour sections, decorated with gold foil or gilding, including a large boss, or *pao*, from a shield or a belt.⁹⁵ It also revealed a sword. From this point in the fifth century, both armour and swords were

93 Ellis Minns, *Scythians and Greeks, A Survey of Ancient History and Archaeology on the North Coast of the Euxine from the Danube to the Caucasus* (Cambridge: Cambridge University Press, 1913), 225, fig. 128; see also Jessica Rawson, “The Eternal Palaces of the Western Han: A New View of the Universe,” *Artibus Asiae* 59.1/2 (1999): 5-58, fig 10-11. Given the similarities between the activities of very different groups of mobile pastoralists, which imply constant interaction and communication, the notion of burying large numbers of horses is likely to have been practised in many regions wealthy enough to afford such extravagance.

94 安徽省文物考古研究所、蚌埠市博物館，《鐘離君柏墓》（北京：文物出版社，2013）；闕緒杭、周群、唐更生，〈安徽鳳陽卞莊一號春秋墓發掘簡報〉，《文物》，2009年8期，頁21-29。

95 安徽省文物考古研究所、蚌埠市博物館，《鐘離君柏墓》，冊3，圖版161。

widely used throughout the centre and eastern part of China.⁹⁶ The southeastern states of Wu and Yue were especially renowned for very fine swords, including the Gou Jian sword illustrated at the beginning of the paper (fig. 5). On these swords, the gold and silver ornament valued in the steppe was often replaced by fine inlaid inscriptions and expert patterning in the bronze itself. Swords made in the Yue state were of extraordinary quality and highly prized as the illustrated example demonstrates, having come to light in the coffin chamber of a high elite tomb at Wangshan in the state of Chu.⁹⁷ By contrast, swords and daggers from southwest China were simple and workmanlike, deriving more directly from the weapons of the steppe, whose features were better known along the western mountain region.⁹⁸ Iron for weaponry was not so popular among Eastern Zhou elite and only came into its own under the Qin and Han.

With such fine armour and elegant swords, the elite now appeared to advertise their capability to take on the enemy in person. But in fact, the central Chinese had adopted the dress and appearance of their neighbours, but not necessarily their practices.⁹⁹ The numbers of excavated decorated swords are not great, though we can increase the numbers of fine personal weapons by adding ornamented and inscribed spearheads. Hunting scenes on some vessels of the fourth century BC show men killing animals in which swords or daggers play a role. But many of these suggest that they are based upon images borrowed from the neighbours in the arc and the steppe and do not necessarily record activities

96 Bronze armour, decorated with tin foil, was also found in Danyang Caojiagang 當陽曹家崗, see 趙德祥, 〈當陽曹家崗五號楚墓〉, 《考古學報》, 1988年4期, 頁455-499。Swords were also very popular in the Chu area, and it seems likely that they were taken up the Huai or Yangzi Rivers from the Wu and Yue areas.

97 湖北省文物考古研究所, 《江陵王山沙塚楚墓》(北京: 文物出版社, 1996)。As Li Xueqin has noted, the bronzes made in the states of Wu and Yue have been found scattered in a number of different provinces; inscriptions on several swords name kings, Li Xueqin, *Eastern Zhou and Qin Civilizations*, trans. K.C. Chang (New Haven and London: Yale University Press, 1985), 197-200.

98 For a detailed discussion of the typological relations of central Chinese swords with those of their northern neighbours, see Alain Thote, "Origine et premiers développements de l'épée en Chine," *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres*, 147e année, no.2 (2003): 773-802.

99 This same mimicking of the appearance of the northerners, already mentioned above, is seen in the use of beads of faience and carnelian combined with jade and other semi-precious stones in tombs of the Western and Eastern Zhou periods, discussed in Jessica Rawson, "Ordering the Exotic".

within central China.¹⁰⁰

In making the suggestion that prowess in individual combat was not highly significant, I am influenced by accounts in the famous eastern Zhou texts, the *Zuo zhuan* and the *Zhangguo ce*. They certainly indicate direct involvement of the elite in war, often in chariots. But these accounts never touch on the level of personal engagement described in the *Iliad* and in other Western epics. Where swords are mentioned, the *Zuo zhuan* and the *Zhangguo ce* present stories that show that the sword was favoured not for combat between equals, but rather for assassination, suicide and ambush.¹⁰¹ In addition, it is likely that swords were used by groups of soldiers in *mêlées*. As armies were now led by professional soldiers rather than by lineage leaders, individual prowess by the elite was probably not an important factor. Merit and status were not achieved by an individual in wielding a sword, but in astute planning and leadership. Hallmarks of success within the hierarchies of central China were now civil rank and ritual display.

One major reason for the role of civil rank was the ever growing size of the administration of the state, which became more and more complex. An outstanding sign was the increasing size of armies. From the 10,000 men or so in the armies of the seventh and sixth centuries BC, armies in the fifth to third centuries BC rose to huge numbers, with claims that the forces in the Warring States were immense.¹⁰² Behind such warfare were highly organised societies, managing land, grain storage, weapon and armour

100 For many examples see Charles Weber, *Chinese Pictorial Bronze Vessels of the Late Chou Period* (Ascona: Artibus Asiae, 1968).

101 For some examples of incidents where swords are mentioned see *Zuo zhuan* (see Yang Bojun 楊伯峻 (ed.) 1990), “Eighteenth year of Xiang gong 襄公十八年,” 1040; “Twenty-seventh year of Zhao gong 昭公二十七年,” 1484; “Fourteenth year of Ding gong 定公十四年,” 1595. *Zhangguo ce* 戰國策 7.7, “Qin ce: Wenxinhou chuzou 秦策·文信侯出走,” 289 (Shanghai: Shanghai guji chubanshe, 1988); 18.4, “Zhao ce: Jin biyangzhisun yurang 趙策·晉畢陽之孫豫讓,” 597; 25.27, “Wei ce: Qinwang shiren wei anlingjun 魏策·秦王使人謂安陵君,” 923; 27.22, “Han ce: Hankui xiang han 韓策·韓傀相韓,” 993.

102 Mark Lewis, *Sanctioned Violence in Early China* (Albany: State University of New York Press, 1990), 60-61, gives figures in the hundreds of thousands. This suggestion is criticised in Raimund Theodor Kolb, “Anmerkungen zu *Sanctioned Violence in Early China*” von Mark Lewis, *Monumenta Serica* 39 (1990-1991): 351-64.

manufacture,¹⁰³ as well as the necessities and luxuries of elite life.¹⁰⁴ Civil administrators were as significant as the military leaders. Chariot battles had declined in importance, with the infantry now dominating overwhelmingly. Inevitably, central China's dense population and high level of organisation supported the achievements of large armies rather than celebrating the skills of a Chinese Hector or Achilles. Indeed, when we are given an example of the use of a dagger or a sword, as in Jing Ke's attempt to assassinate the First Emperor, we are not expected to be edified by the account. There is no attempt to use such an engagement to present the moral standing of Jing Ke. Rather the reverse. The tale illustrates the low esteem of those who turn to daggers or swords.

A completely new factor was introduced from the steppe and the arc in the late fourth century, namely cavalry, when the king of the state of Zhao ordered that his troops wear trousers and tunics and ride to battle. Archery rather than sword skills now became essential. While this step might have brought central China's warfare closer to that of their northern neighbours, it also heralded the growing use of 'outsiders' in armies of central Chinese states. This practice of delegating war on the field to those skilled on horseback was to remain a major feature of all Chinese battles thereafter. Here was a further reason why the elites of Eastern Zhou China did not seek to impress in face-to-face combat.

Weapons and the Afterlife

Deposition of weapons in tombs was predicated not only on the status of the living, but also on the pleasures and perils of the afterlife. After all, ritual vessels were for banquets with the ancestors; musical instruments were no doubt for ceremonies after death. The early jade copies of weapons were certainly emblems of status (fig. 16), but probably also functioned as protection against demons.

103 While the inscriptions on the bamboo slips from Shuihudi in Hubei are slightly later in date than the period under discussion, they present a good picture of the detailed organisation in the making of weapons, A. F. P. Hulswé, *Remnants of Ch'in Law, An Annotated Translation of the Ch'in Legal and Administrative Rules of the 3rd Century B.C. Discovered in Yun-meng Prefecture, Hu-pei Province in 1975* (Leiden: E. J. Brill, 1985).

104 Frank Kierman and John Fairbank eds., *Chinese Ways of Warfare* (Cambridge Mass.: Harvard University Press, 1974), 18.

However, the success of the Zhou, with their strong links to the arc, seems to have disturbed the practice of burying jade weapons. In general, jade versions of later weapon types, for instance the Zhou forms of the *ge* blade, with a right-angle bend along the shaft, were rarely created. Instead, the older types, such as the Shang *ge*, were preserved and re-used or indeed reproduced. Miniature versions, almost like talismans, were also made. The seemingly personal weapon, the sword, was not generally copied in jade, which may again underline its lesser importance at the heart of central Chinese culture.

Instead the pressure of ever increasing armies must be taken into account in our understanding of the deposition of weapons in tombs of the Eastern Zhou period. Mass deaths in major battles left multitudes of potential enemies, who might be encountered in the afterlife. Thus, we should look on the buried weapons as likely reflecting fears of the armies of ghosts and demons. A major tomb of the Jin state excavated at Taiyuan was especially well provided with weapons.¹⁰⁵ The main occupant was buried with four swords, and several other subordinate individuals in the same tomb had numerous halberds near them. Peoples of this region must have had close contact with the arc and its inhabitants, as the tomb offers us evidence of steppe-type vessels and equipment. As in other tombs of this period, finds of several gold foil sheets were probably parts of fine armour. Therefore, yet more emphasis was now placed on actual weapons and armour for protection in the other world.

Jade appeared in new forms in this period.¹⁰⁶ A jade version of the gold belt (like the one buried at Liangdaicun) in the tomb of a high ranking individual from Ying State, in Henan, underlines the greater value of jade over gold in central China (fig. 26) and emphasises a new role for jade in the afterlife.¹⁰⁷ The belt has a triangular element, just like the gold version, with seven square plaques with a central hole replacing the openwork rings of dragons in the belt of the Lord of Rui. However, from the appearance of the jades, especially of the piece identified as a clasp, this version seems unlikely to have

105 山西省考古研究所等編，《太原晉國卿墓》（北京：文物出版社，1996）。

106 Highly decorated jade plaques often replaced the gold ornaments so valued in the steppe, see Jessica Rawson, *Chinese Jade*, 64-72.

107 河南省文物考古研究所、平頂山市文物管理局、河南大學歷史文化學院，〈河南平頂山春秋晚期 M301 發掘簡報〉，《文物》，2012 年 4 期，頁 4-28，圖 30。

been as efficient as the gold one and may only have been intended for the afterlife.

Yet more telling was the replacement of metal with stone for armour at the site of the third century tomb of the First Emperor. For the afterlife, an armoury was supplied, filled with suits made of small limestone plaques joined by copper threading. Initially the sets would have been placed on racks, presumably of wood, which later decayed and collapsed. On racks, the suits would have been ready for use after death. It seems likely that they were intended for high-ranking members of the Emperor's court, possibly those who accompanied him in adjacent tombs, as the suits were often designed in the styles associated with generals among the terracotta warriors.¹⁰⁸ War with the spirits seems to have been as much feared as battle in life.

Conclusion

Central China cannot be closely examined or understood without recognising that the peoples of the vast Eurasian steppe were at all times interactive neighbours, whose customs and material culture reached the heart of the Central Plains by way of the arc. The profound environmental and social differences of the steppe and the arc to the north and west of central China on the plains were essential to this exchange. In the north, the steppe and arc societies were drawn together by individuals whose personal prowess legitimised their command of resources, in seizing herds of animals from others, for example. On the Central Plains, fertile agricultural land supported a dense, less mobile population, whose resources of grain needed to be organised if they were to support other activities. Such control was honed in the construction of large platforms and walls from the later Neolithic period. Personal prowess in combat was not the route by which to achieve these large social projects. As a consequence, two different forms of warfare and two ways of using closely related types of weaponry became and remained embedded in the two different regions, with their distinctive social fields.

At the heart of the transformation stimulated by warfare between the peoples of the

108 James Lin, "Armour for the Afterlife" in *The First Emperor, China's Terracotta Army*, ed. Jane Portal (London: British Museum Press, 2007), 180-91.

steppe and the central Chinese were two contrasting tendencies. The weaponry of the steppe was readily adopted on the Central Plains, as were many technologies, such as those for the use of bronze, iron and the chariot; indeed this was inevitable as interactions with the peoples of the arc and the steppe were continuous. But as important was a second factor, the resistance of the well-organised Chinese polities to adopting the military tactics of their neighbours, while taking advantage of what they could gain. The Shang were able to adapt steppe and arc weapons to suit their large armies, while retaining and developing large bladed bronze weapons as symbols of elite status. They did not often take up the mace, and only rarely the short sword or dagger. Prowess in hand-to-hand combat was not an essential part of their repertoire and did not, it would appear, lead to higher rank. To gain status, the Shang elite, as military leaders, had to arm and control large groups of men as infantry and to acquire the support of the king in owning chariots. The early Zhou, likewise, made extensive use of steppe and arc military weapons and chariots, but again adapted them to the large scale, ritualised systems of their state, most especially in their fondness for the chariot. For both the Shang and the Zhou, large-scale burial of weapons and chariots signalled status, but also provided the forces needed against demons and other opponents in the afterlife.

The changes in the Eastern Zhou were clearly products of developments in the steppe. While armour and swords widely used in the steppe now made a mark in central China, it seems that these were above all a form of dress or symbols of status. A similar concern with imitating the outer garments and appearance of the northern neighbours is very evident in the early fashion for beaded hangings in the Western Zhou. This desire to replicate some aspects of steppe style but not their practices remained one of the most revealing characteristics of the ways in which the central Chinese responded to conflict with the northerners. For it is doubtful whether the elite ever truly esteemed the personal combat of the type celebrated in Western epics as significant. The Lord of Rui may have dressed as a steppe leader, but he probably did not wish to fight like one in life. His display of gold in death may possibly have had other purposes, namely to deter potential afterlife enemies from the steppe by presenting himself, through his dress, as being one of them. Indeed, the afterlife offered as many fears as warfare in life. Shang period jade weapons, massed weapons in Eastern Zhou tombs and the terracotta warriors and stone

armour from the tomb of the First Emperor all tell us that we should consider the dangers the elite faced in the afterlife alongside the battles between the states and with the warriors of the steppe.

Warfare certainly engaged thousands of men. But the endless battles with northerners did not create a parallel martial spirit in central China. Incessant warfare increased China's dependence on a strong hierarchically organised society, producing both enough weapons and grain to arm and feed a mass of soldiers. This structure contrasted with or was indeed in opposition to that of the societies and military practice of the much more fragmented groups along the northern borders. Such contrasts were to remain constants in China's relations with its neighbours down to the eighteenth century, if not longer.

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中國古代的草原式兵器與一對一 單兵作戰的意義

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提 要

位於黃河與渭河平原的早期中國社會依賴稻穀種植，而在他們的北方和西北方卻是許多憑藉畜牧業生存的人群。這篇文章沿襲童恩正先生的理論，將這些位於中原邊緣地帶的地區稱作為半月形地帶（arc）。生活在這個半月形地帶的人們，他們的文化面貌與蒙古和南西伯利亞草原地區的遊牧民族緊密相關。在這樣的聯繫之下，冶金技術以及很多草原兵器逐漸被引進中原腹地。但值得關注的是，中原地區龐大的人口和支撐這大量人口的勞動密集型農業經濟被當時的商王朝加以利用，組織成為大型的步兵部隊，用來抵禦來自草原的眾多小規模入侵。因此，這兩股互相對抗的軍事力量運用相似的武器，但他們的軍事策略卻大相逕庭。本文指出，西方社會崇尚的一對一單兵作戰形式似乎並沒有被中國的商或者西周社會採用。甚至在隨後的東周時代，儘管劍和匕首等武器從半月形和草原地區被引進，中原地區依舊更多地依靠人數眾多的大型部隊而不是草原文明典型的個人英勇或者戰鬥技藝。另外，這篇文章闡明了草原武器進入中原地區的幾種可能路徑，並且梳理了相關的文獻材料。本文的最後一個部份強調了死者的兵器與盔甲的重要性。

關鍵詞：草原、半月形地帶、中原、武器、盔甲、劍、一對一單兵作戰、商、周

（唐小佳翻譯）



1a. Bronze axe, *yue*, from the tomb of Fu Hao at Anyang. Height 39.5 cm, weight 9 kilos. After 《中國考古文物之美 2：殷墟地下瑰寶·河南安陽婦好墓》，pl. 21.



1b. Bronze single-bladed knife from the tomb of Fu Hao at Anyang. Length 36.2 cm. After 《殷墟婦好墓》，pl. 66: 1.



2. A group of single-bladed knives and arrow heads, Elunino Culture (2000-1700 BC), Russian Altai, photographed in the museum at Barnaul. Author's photograph.

3. Inscriptions, late Shang and early Zhou with weapons included in the names:



3a. Axe, *yue*, Sandai
2:4:6; 《三代吉金文存》, 3 vols.



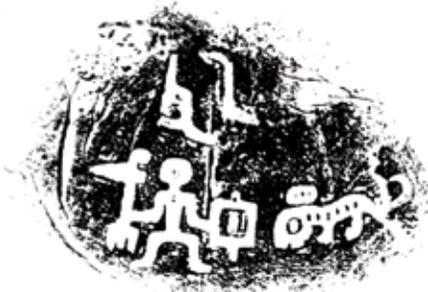
3b. Halberd YHB0920
《新收殷周青銅器銘文暨器影彙編》



3c. Vertical knife JC3079
《殷周金文集成》

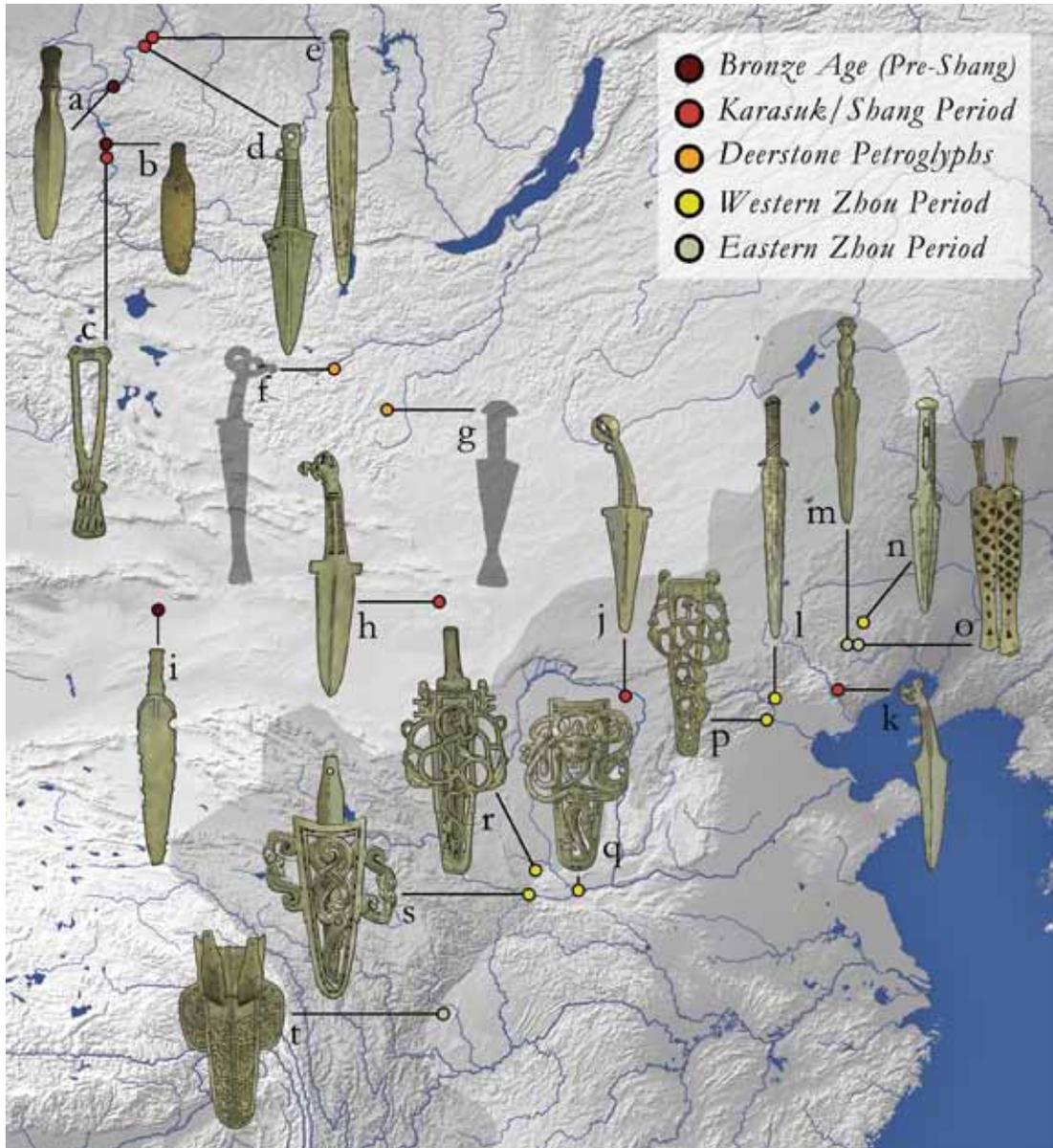


3d. Knife with upturned tip 《三代》2:17:1

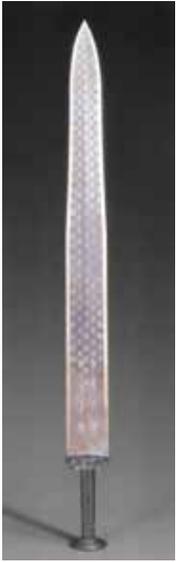


3e. Halberd and shield JC7223.

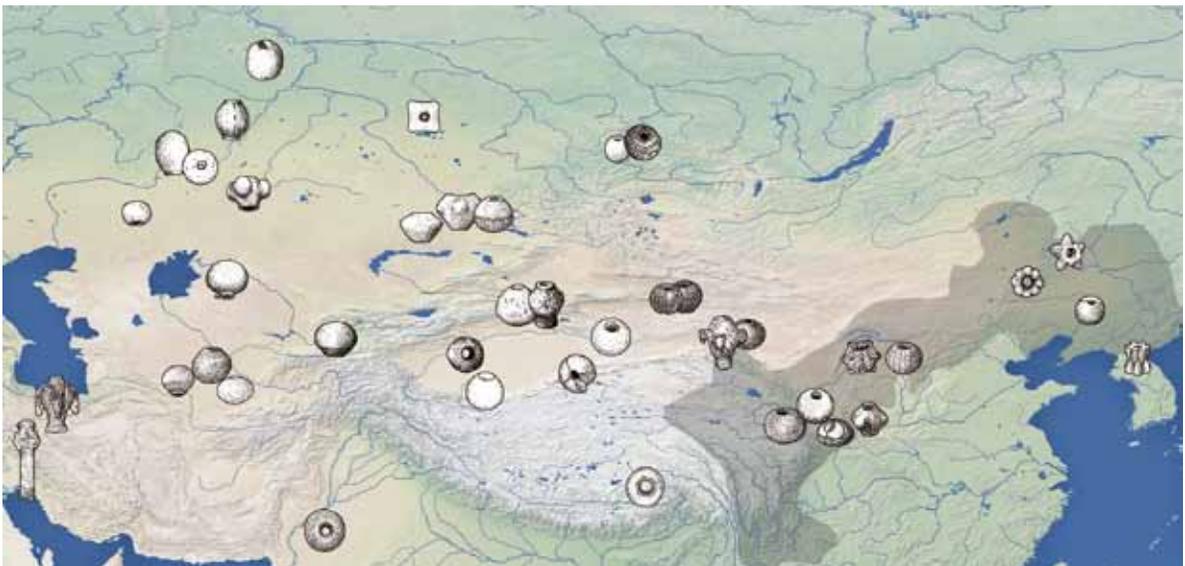
父乙
斃
虎
觚



4. Map of the eastern steppe and the arc showing the distribution of small swords or daggers along the arc. Minusinsk Basin (a-e): a-Krivosheino (Andronovo), b-Potroshilovo (Okunevo), c-Krasnopol'e, d-Kaptyrevo, e-Chasto-ostrovsoke; Mongolia (f-h): f, g-Galt, Khovshol Province, h-Battsengel, Arkhangay Province, i-Chance Find, Ömnögovi Province; China (i-u): i-Tianshanbeilu, Xinjiang, j-Xuhaishuwan, k-Chaodaogou, l-Baifu, m-Nanshangen, n-Shaoguoyingzi, o-Ningcheng City, p-Liulihe, q-Xi'an, r-Baicaopo, s-Baoji Zhuyuanguo, t-Chengdu. Drawing Jessica Rawson and Peter Hommel.



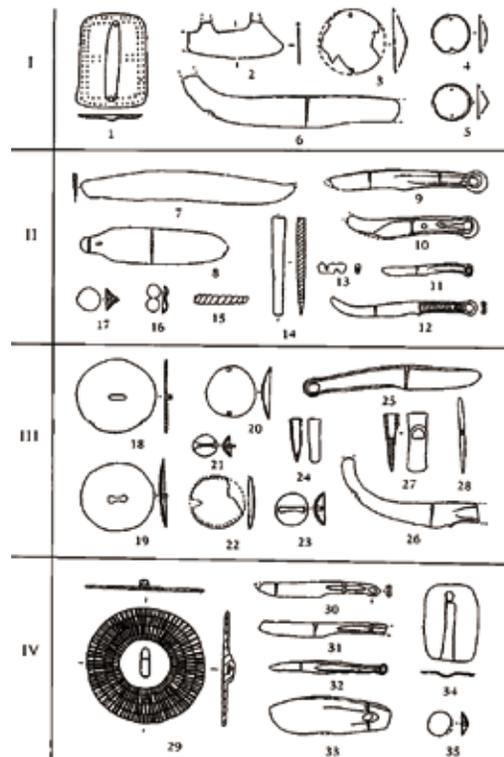
5. Sword decorated with a geometric pattern and with an inscription inlaid in gold, Excavated from Wangshan 望山 in Jiangling 江陵, Hubei province, 6th-5th century BC, length 55.7 cm. After 《中國青銅器全集》, vol. 11, no. 100.
6. A group of stone mace heads and stone shaft-hole axes of the Catacomb Culture (2500-2200 BC). State Historical Museum, Moscow. Author's photograph.
7. Bronze shaft-hole axes of the Abashevo Culture (2500-1900 BC). State Historical Museum, Moscow. Author's photograph.



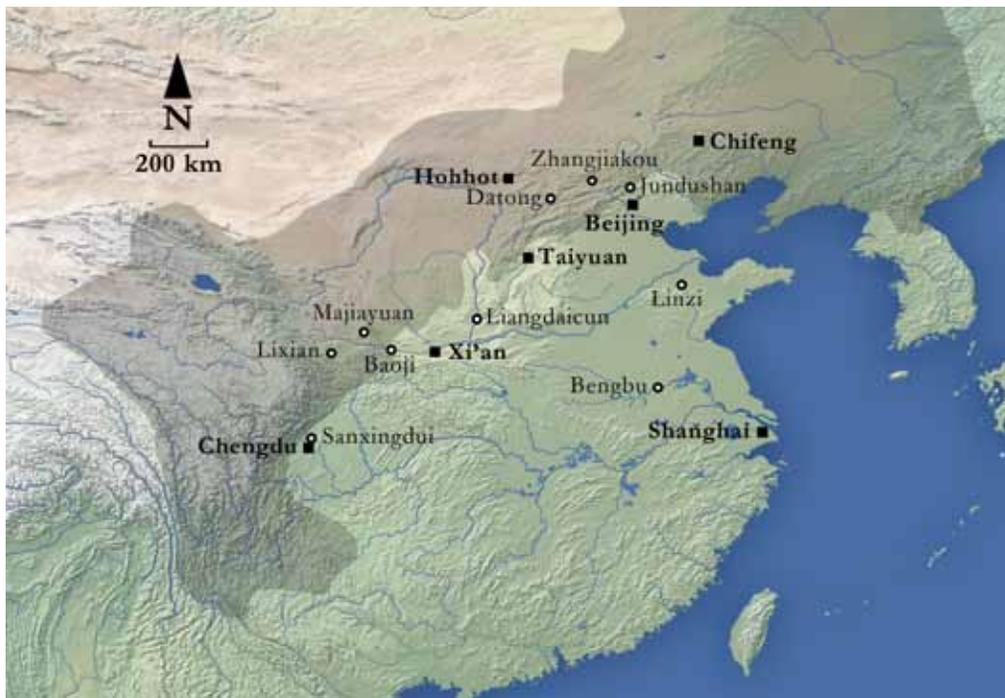
8. Map of the arc and the eastern steppe showing the distribution of mace heads in the steppe and on the borders of central China. Drawing Peter Hommel.



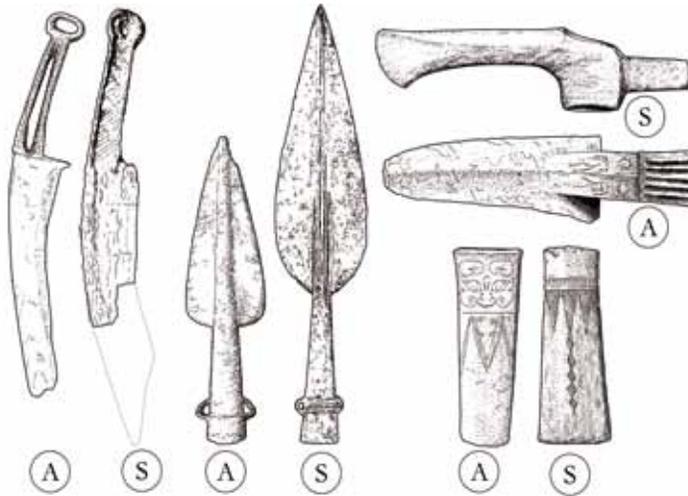
9. Two bronze knives of the Okunev Culture (2000-1500 BC). Hermitage Museum, St Petersburg. Photograph Peter Hommel.



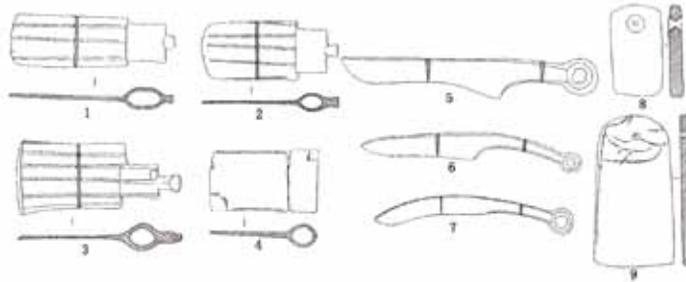
10. Drawings of copper and bronze artefacts from Tianshanbeilu 天山北麓 cemetery, Hami 哈密, Xinjiang province. These include steppe style single-bladed knives, one doubled edged knife, some *pao*, and a mirror. Second millennium BC. After 〈新疆青銅時代考古文化淺論〉, figs. 15-18.



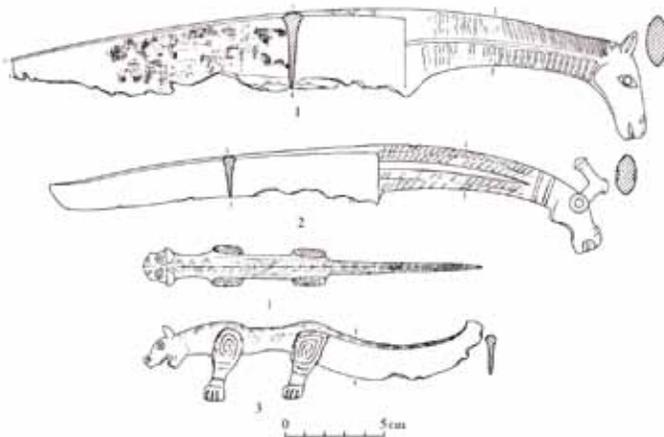
11. Map of the arc and central China with sites mentioned in the paper. Drawing Peter Hommel.



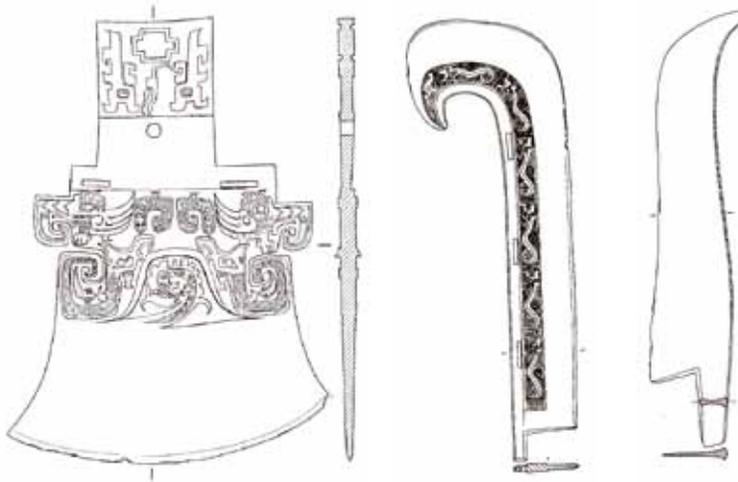
12. Comparisons of steppe (S) and Anyang (A) excavated bronze weapons. Drawing Peter Hommel.



13. Bronze axes with tubular shafts, single-bladed bronze knives and grinding stones, made at Anyang but copied from arc examples. From 殷墟丁組遺址一號房基 M10. After 〈由殷墟出土北方青銅器看商人與北方族群的聯繫〉, fig. 9.



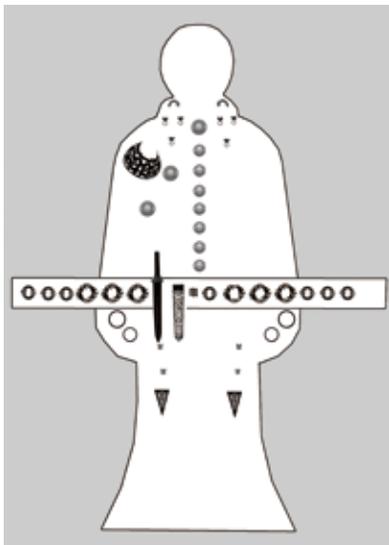
14. Drawings of three bronze knives of steppe type from tomb M54 at Anyang Huayuanzhuang 安陽花園莊. Length of the knife with a horse's head 31.5 cm. After 《安陽殷墟花園莊》, figs. 126, 127.



15. Drawings of three weapons with large blades from tomb M54 at Anyang Huayuanzhuang. Height of axe 40.5 cm, weight 5.96 kilos; height of vertical knife 44,5 cm; length of knife with upturned tip 31.5 cm. After 《安陽殷墟花園莊》, figs.103:2, 118:1, 127:1.



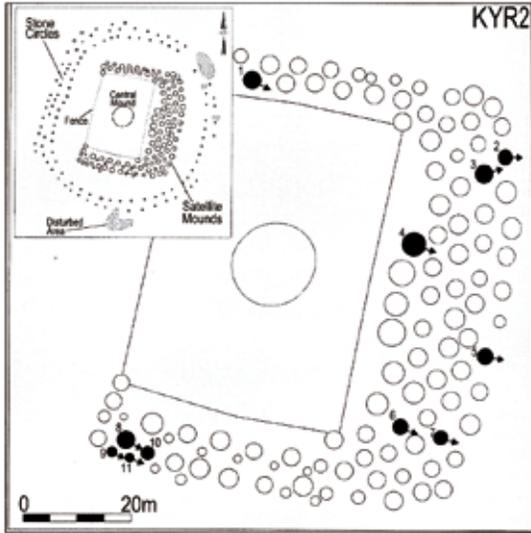
16. Jade knife with and upturned tip from tomb M54 at Anyang Huayuanzhuang. Length 25.2 cm. After 《安陽殷墟花園莊》, col. pl. 40:4.



17. Drawing of the arrangement of gold ornaments and a belt from tomb M27 at Liangdaicun 梁代村, Shaanxi province, 8th century BC. Based upon a reconstruction shown at the Shanghai Museum, August 2012. Drawing by John Rawson. The individual items are drawn after 《芮國金玉選粹：陝西韓城春秋寶藏》, nos. 57, 59-72.



18. Arrangements of the gold ornaments and a belt from tomb M27 at Liangdaicun, Shaanxi province. After 《芮國金玉選粹：陝西韓城春秋寶藏》, nos. 57, 59-72.



19. Plan of a khrisuur in the Khanuy Valley, Mongolia. After "Ritual and Horses", 152.



20. Drawing of a rubbing of four sides of a deer stone, showing weapons hanging from a belt and a shield in the upper right section. From northern Mongolia, c. 1200-700 BC. After *Olenyye Kamni Mongolii*, fig. 79.



21. Map of Northern Eurasia from the Black Sea to the western Yellow River illustrating a shared interest in the prestige of iron daggers and swords with gold or silver decoration. a-Chertomlyk (Late 4th BC); b-Solokha (Early 4th BC); c-Kul'-Oba (4th BC); d-Kelermes (Mid-Late 7th BC); e-Filippovka (5th-4th BC); f-Tagisken (6th-5th BC); g-Tiliya Tepe (1st BC-1st AD); h-Issyk (4th-3rd BC); i-Berel' (4th-3rd BC); j-Arzhan II (6th-5th BC); k-Lixian (4th-3rd BC); l-Majiayuan (4th-3rd BC). Drawing Jessica Rawson and Peter Hommel.



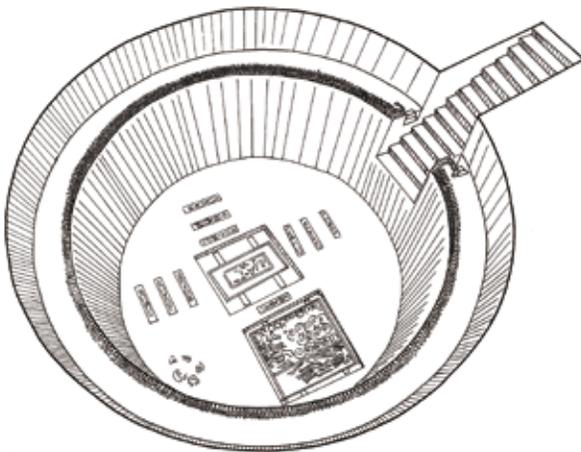
22. Map of Eastern Eurasia, Mongolia and Northern China illustrating the major present-day routes of communication by road and rail.



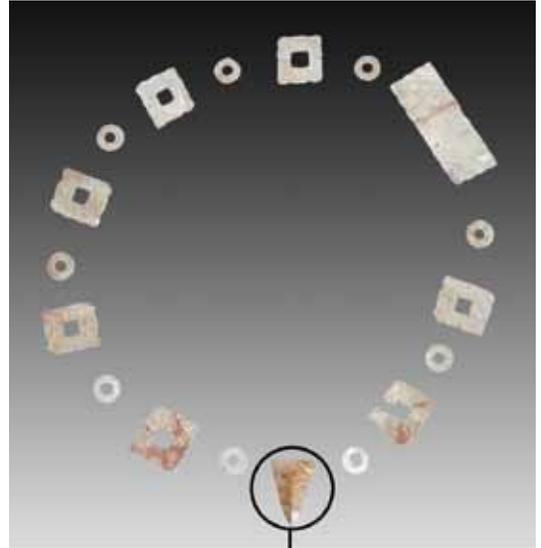
23. Map of the arc showing three main routes into China: 1. In the west along the Hexi corridor; 2. In the centre down the Yellow River and 3. in the north-east near Beijing. Drawing Jessica Rawson and Peter Hommel.



24. Detail of the sacrificed rows of horses from the tomb of Duke Jing 景 of Qi 齊 at Heyatou 河崖頭, Linzi 臨淄, Shandong Province. Museum of the History of the State of Qi, Linzi. After *The Formation of Chinese Civilization, An Archaeological Perspective*, fig. 7.42.



25. Drawing of the plan of the tomb of the Zhongli 鐘離 state at Bengbu 蚌埠. After 《鐘離君柏墓》, vol. 1, fig.6.



26. Jade belt with a detail of the triangular plaque from a state of Ying 應 cemetery at Pingdingshan 平頂山. 6th century BC. . After 《河南平頂山春秋晚期 M301 發掘簡報》, figs. 30, 34.

