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**EARLY NICHE GRAVES IN THE  
TURFAN BASIN AND  
INNER EURASIA**

ILSE TIMPERMAN

Thesis submitted for the degree of PhD

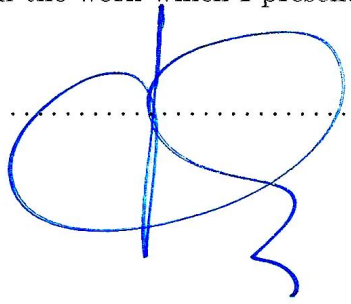
2016

Department of the History of Art and Archaeology

SOAS, University of London

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## Abstract

This PhD research analysed mortuary variability at Yanghai and the Turfan Basin to understand the emergence of lateral niche graves around 200 BCE and its significance in an Inner-Eurasian context. This research relates to a larger niche grave debate which has existed for decades.

Attributes of 519 graves at site level and 150 graves at regional level were fed into a specially designed database. More than 5300 entries were collected at the lowest possible level, so that they could be aggregated at any time to the desired research constructs. This made it possible to look at the data from multiple perspectives, views or paradigms. A fivefold set of parameters was assessed related to grave architecture, human remains, animal remains, grave goods and chronology.

The results suggest the Yanghai niche grave occupants represented an emerging pastoralist elite skilled in mounted shooting, who controlled the Turfan Basin and part of the Tianshan area from c. 200 BCE onward. They depended on the Jiaohe Goubei elite who occupied a strategic position and borrowed their power from a clever navigation between western and eastern powers. Jiaohe Goubei showed close connections with the Balikun grasslands. The niche grave practices of both areas probably originated in the Hexi Corridor but also showed different affiliations. Another niche grave centre in the Yili Basin was not responsible for the emergence of this grave type in the Turfan Basin, but triggered instead a series of events west of the Tianshan.

Analysis of Yanghai demonstrated that the introduction of niche graves did not result in a sudden replacement of the local population. Adoption by locals was more important than migration and there was a close symbiosis between shaft and niche grave occupants. The regional analyses indicated a differential integration of niche grave practices by different communities in the Turfan Basin.

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Ilse Timperman

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# Part I

## Research Framework

# 1 Research context

## 1.1 Research questions and structure

Around 200 BCE, the Turfan Basin saw the sudden emergence of lateral niche graves. The latter can be defined as rectangular shafts with one or two niches positioned laterally to the shaft and holding one or more bodies. Who were their occupants and how did their burial practices differ from predecessors and contemporaries in the area?

The core research questions are: 1) Was the lateral niche grave form in the Turfan Basin an autochthonous or allochthonous development? 2) If allochthonous, was this resulting from acculturation and/or migration, and can it be linked to similar practices elsewhere in Inner Eurasia?<sup>1</sup> 3) Finally, is the research category ‘niche grave’ significant at all, and relevant to understand the identity of its occupants and makers?

This research is articulated at supra-regional, site and regional level: Inner Eurasia (Part II); Yanghai (Part III); and the Turfan Basin in the Xinjiang Uyghur Autonomous Region (Part IV). It concludes by discussing the main findings at these levels, related to the identity of the niche grave occupants of Yanghai and the Turfan Basin while suggesting possible mechanisms of transmission (Part V).

Part I frames the emergence of niche graves in the Turfan Basin within a broader context and theory to position this dissertation and demonstrate its relevance and originality within these discussions. The research questions are to be understood in a specific physico-geographical, chronological and socio-economic context (§ 1.2, § 1.3, § 1.4). The archaeological evidence is assessed in § 1.5.

Reconstructing the niche grave debate in Chapt. 2 allowed identifying past approaches, the theoretical models behind them, and their flaws. Chapt. 3 discusses the methodology used, and Chapt. 4 summarises the research framework.

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<sup>1</sup>The term ‘Inner Eurasia’ comes from David Christian, Christian 1994; Christian 2006 [1998].



## 1.2 Physico-geographical context

Environment affects subsistence strategies and the way people live, but human agency should not be ignored. Moreover, people have their own specific way of perceiving the landscape; the same thoughts that structure their behaviour, order their landscape and influence burial practice. I do not intend to comprehend the meaning behind burial rituals, or to fall back upon environmental determinism. However, even when palaeoclimate and palaeoenvironment are not entirely understood, the physico-geographical context forms a major framework within which cultural change should be understood, and therefore each region in Part II starts with a physico-geographical introduction.

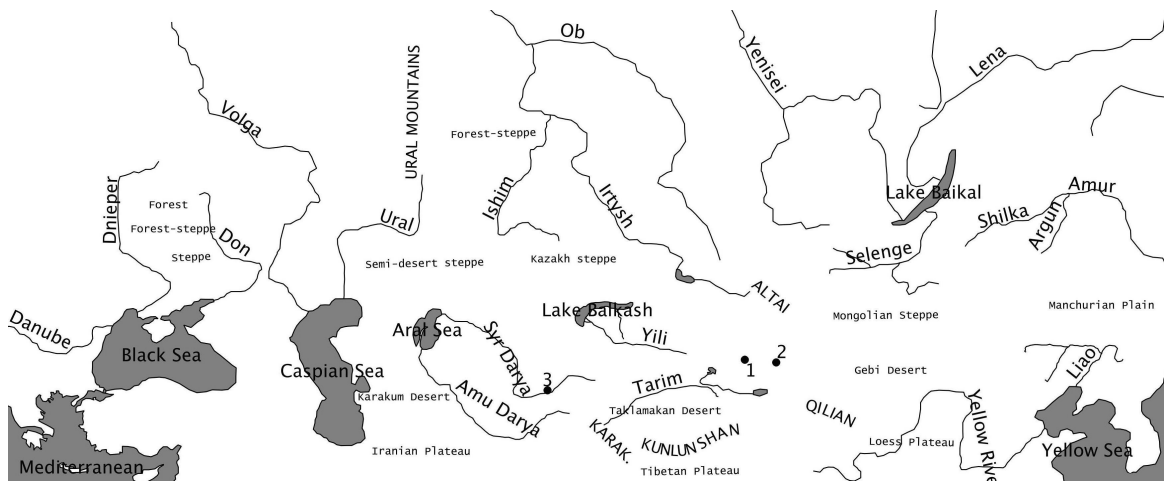


Figure 1.1 – Map of Inner Eurasia

The supra-regional research perspective in Part II covers Inner Eurasia (Fig. 1.1). Christian defined the latter as including the lands ruled by the Soviet Union in 1990, Mongolia, and by extension also Xinjiang and Manchuria. Along the southern rim, mountains form a natural border with Outer Eurasia, with openings towards the Balkans, Persia, and northern China.<sup>2</sup> Despite its vastness, Christian convincingly defended Inner Eurasia as a regional unit of analysis of world history, based mainly on its geography.<sup>3</sup>

Most niche grave practices discussed here, are distributed in a steppe belt that extends from the Pontic steppe in the west to the Mongolian steppes in the east. This area includes desert land with sparse oases, and patches of forests concentrated in mountain areas. Climate and geography support herding more than crop farming, though the latter was possible in confined areas. Movements of people were guided by rivers and mountain valleys with grassland that connected different drainage systems.

<sup>2</sup>Christian 1994, 175; Christian 2006 [1998], 3–4.

<sup>3</sup>Christian 1994; Christian 2006 [1998].

## 1.3 Chronological and historical context

The pre-/proto-historical part of this research depends largely on the archaeological record. Its biggest challenge is the chronology. Despite a growing body of radiocarbon dates, unreliability of the latter, insufficient understanding of early metallurgy, lack of stratigraphic context due to wind erosion and little grave overlap, large-scale grave looting, and incomplete reporting, all complicate establishing chronologies in Xinjiang.

The lack of reliable radiocarbon dates is partly due to improper sampling. Wood samples often provide older dates of up to several hundred years, and are less reliable than short-lived samples like grains, grasses, reeds, single tree rings, or carbon and bone material. Atmospheric circumstances too influence radiocarbon dates (§ 17.3).

An insufficient understanding of the Neolithic – if existing – and the lack of more precise dates on the beginnings of metallurgy in Xinjiang complicate using a three-age system of Stone, Bronze and Iron Age.<sup>4</sup> Progress has been made in the field of metallurgy.<sup>5</sup> Mei Jianjun claimed that copper and tin bronze came into use during the first part of the second millennium BCE, as evidenced from Gumugou and Tianshanbeilu, and that Yili-Semirechye played a pivotal role in the development of Iron Age cultures in Xinjiang in the mid 1<sup>st</sup> millennium BCE.<sup>6</sup> I therefore adopted a date of c. 2000–1000 BCE for the Bronze Age and c. 1000–100 BCE for the Early Iron Age of east Central Asia.

Recent typological research enabled the establishment of chronological and regional sequences.<sup>7</sup> Given the issues with absolute dating, scholars largely depend on relative dating for interpreting archaeological remains in Xinjiang. However, while typologies are relatively reliable, their sharpness depends on the quality of the typological research.

For the historical period of this research, ancient Chinese records form a complementary source of information, next to archaeological remains. They are especially relevant from the 2<sup>nd</sup> c. BCE onward when parts of the ‘Western Regions’ came under control of the Western Han (206 BCE–9 CE). For the 3<sup>rd</sup> and early 4<sup>th</sup> c. CE there are also documents in Kharoṣṭhī, the script for the Gāndhārī language used in the Kushan Empire and southern Tarim Basin. These are less relevant here as they are generally younger and of an administrative nature. Greek and Roman sources inform us on the other side of the Pamirs up until the mediterranean world.

<sup>4</sup>This system was introduced by Christian Jürgensen Thomsen (1788–1865).

<sup>5</sup>Chen Ge 1990, 366–374; Mei 2000; Mei et al. 2002, 213–234.

<sup>6</sup>Mei 2000, 15 and 71.

<sup>7</sup>see Han Jianye 2007b; Guo Wu 2012.

Chinese records describe the nature and movements of pastoralist tribes in the ‘Western Regions’. The ethnonyms ‘Xiongnu’, ‘Yuezhi’, ‘Wusun’, ‘Sai’ and ‘Saka’ used here, are generic terms constructed from a centre-periphery perspective. The attribution of these people to linguistic, racial, and archaeological entities is problematic (§ 2.7). Therefore, the primary sources of this dissertation are archaeological relicts and will not be used to proof narratives from ancient records, but as objects of an independent research line with its own strengths and weaknesses.

## 1.4 Socio-economic context

Discussions on the formation and distribution of cultures including burial practices of Inner Eurasian prehistory are intersected with a number of interrelated issues. These include migration (§ 2.7), the emergence of horse riding, pastoralism, nomadism, and mobility, which played a prominent role in the 1<sup>st</sup> millennium BCE. Both horse riding and pastoralism enhanced mobility and cultural (ex)change.

Pastoralism can be defined as a form of livestock raising, whereby people migrate over larger areas to pasture livestock. It is combined with other activities in various ways. Part of the community can engage in crop farming, while the other part herd animals in vertical or horizontal transhumance. Another possibility is a symbiosis between independent herders and crop farmers. These forms are not always archaeologically distinguishable. Nomadism was a steppe adaptation, implying mobility of the whole group without a fixed base, though with the option of a long-term stay in a summer or winter camp.

Pastoralism required a more extensive and mobile lifestyle than crop farmers. The degree of mobility is closely related to the dependence on pastoralism and domesticated animals.<sup>8</sup> As Roger Cribb stated, *the greater the degree of pastoralism, the stronger the tendency towards nomadism.*<sup>9</sup> Classifying different forms of mobile subsistence practices requires a critical assessment of the tense relation between mobility and sedentism, and the organisation of subsistence activities. Dualistic interpretations as in Anatoly Khazanov’s definition of nomadic pastoralism, implying dichotomies of sedentaries/nomads, crop farming/herding, steppe/sown, muddle our understanding of what are fluid entities.<sup>10</sup>

The earliest proof for domestic horse and horse riding in Inner Eurasia comes from Botai

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<sup>8</sup>Christian 2006 [1998], 86.

<sup>9</sup>Cribb 1991, 16.

<sup>10</sup>Khazanov 1984, 14 ff; Cribb 1991, 16. See same publication for a discussion on defining nomads in archaeology.

in Kazakhstan, dated c. 3500 BCE.<sup>11</sup> David W. Anthony claimed that horse riding – first applied in pastoralism and then in warfare in combination with the chariot – had tremendous socio-economic implications for people dwelling the Eurasian steppes. Horse riding enabled quick and easy transport, facilitated migration and the development of mobile subsistence strategies, while also leading to intensified interaction and dramatic changes in warfare.<sup>12</sup>

The development of mounted warfare led to major political and economic power shifts in Eurasia. Anthony contested Andrew Sherratt's claim that the primordial role of domesticated horse lay in its contribution to warfare, first in chariot warfare (c. 2000 BCE) and then in mounted warfare (c. 800 BCE).<sup>13</sup> Anthony emphasised instead that horse riding was first used to increase the efficiency of pastoralism. He claimed that wear on premolar teeth and mandibles caused by bits in domesticated horses at Botai and Khozai 1 in the steppes of north Kazakhstan demonstrated that horses were ridden between 3600–3100 BCE and perhaps used for tribal raiding, though not for organised mounted warfare which only figured after 1000 BCE.<sup>14</sup>

As Anthony argued, mounted archery was another critical development following horse riding. From about c. 800 BCE mounted warriors began to figure in Eurasian art. Anthony emphasised the difference *between tribal raiding on horseback, which probably began before 4000 BC, and cavalry, which appeared only after 1000 BC, initially as a specialised force of mounted archers*. In combination with the invention of recurved bows – as opposed to long bows much more suited for mounted archery and having a more deadly impact – and standardised arrows, this gave a tremendous advantage in battle.<sup>15</sup>

No absolute relation exists between horse riding, and pastoralism or warfare. Early forms of mobility existed among pastoralists herding sheep/goat and cattle in south-east Kazakhstan c. 2000 BCE. Based on a study of the faunal record, Michael Frachetti and Norbert Benecke claimed horse riding was limited and probably applied to hunting forays. This discredits simplistic diffusion or migration models of mobile pastoralists in Inner Eurasia.<sup>16</sup>

Pastoralism had a long tradition in Xinjiang. The highland areas with its many valleys provided excellent pasture for herding. The desert oases and piedmont areas allowed for herding and small-scale crop farming (77 ff.). The Bronze Age people of the 2<sup>nd</sup> millennium

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<sup>11</sup>Anthony 2007.

<sup>12</sup>Anthony 2007; Anthony et al. 2011.

<sup>13</sup>Sherratt 1983; Sherratt 1997b; Sherratt 2003; Littauer et al. 2001.

<sup>14</sup>Anthony et al. 2011, 132.

<sup>15</sup>Anthony et al. 2011, 154.

<sup>16</sup>Frachetti et al. 2009.

BCE in Xinjiang were pastoralists relying heavily on herding alongside some hunting and crop farming, and mobile pastoralism developed in the early 1<sup>st</sup> millennium, characterised by horse pastoralism and iron metallurgy.<sup>17</sup> This transition between Bronze Age and Early Iron Age in Xinjiang is not well understood, but Chen and Hiebert highlight the rise of horse nomadism in the highlands and its effect on the lowlands.<sup>18</sup>

The earliest evidence for domesticated horse in Xinjiang comes from Chawuhugou in the central Tianshan mountains, and is dated early 1<sup>st</sup> millennium BCE.<sup>19</sup> The earliest horse bits and cheekpieces attesting to horse riding in the Tianshan and surrounds appear rather late in comparison with the Near East or southeastern Europa.<sup>20</sup> They are made of metal, bone and wood and were found at Chawuhugou and Yanghai, dated to the early 1<sup>st</sup> millennium BCE (see 240, 273).<sup>21</sup>

By the late Early Iron Age, several pastoralist communities showed a strong sedentary character in Inner Asia, as evidenced by Yanghai (Chapt. 11) and Jiaohe in the Turfan Basin (§ 20.5), Dongheigou and Heigouliang in the eastern Tianshan area (103 ff.), and Sanjiaocheng in the Hexi corridor (142 ff.). Other examples include the fortified settlement of Ivolga in Mongolia.<sup>22</sup> Evidence of sedentism is often at odds with (interpretations of) mobile pastoralist groups described in historical sources but has sparked new interest and research.<sup>23</sup>

Sedentism facilitated seasonal movement between winter pastures in the oases and summer pastures in the mountains. Such vertical transhumance still exists today. As observed during fieldwork in the Turfan Basin, part of the family herd sheep in the mountains, while the others cultivate fields in the oasis. During the Early Iron Age, the material culture from the Turfan Oasis was related to that north of the mountains, and reflects a similar system of shared economic tasks, or a symbiosis between oasis and mountain people (§ 8.4; 241).

Horse riding and pastoralism were quite developed at Yanghai (Chapt. 15; § 16.4; Chapt. 18 and 17), and together with other developments discussed in Part III, these provided a context for assessing mobility, interconnectivity and change in burial practice (see Chapt. 18, esp. 273–274; § 28.3; Chapt. 29).

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<sup>17</sup>The period before 2<sup>nd</sup> mill. BCE yielded very few remains in Xinjiang and is poorly understood.

<sup>18</sup>Chen et al. 1995, 290.

<sup>19</sup>An Jiahuan et al. 1998; see also Flad et al. 2007, 191; and Fu Luowen et al. 2009.

<sup>20</sup>Compare with Littauer et al. 2001.

<sup>21</sup>Wang Mingzhe 1999; Tulufan Diqu Wenwuju et al. forthcoming.

<sup>22</sup>Davydova 1995.

<sup>23</sup>Waugh 2010, especially 97–102; Brosseder 2011b, 21–22; Di Cosmo 1994.

## 1.5 Archaeological evidence

The primary sources of this research are archaeological relicts. Information was mainly retrieved from excavation reports, next to four fieldtrips in P.R. China and Central Asia in 2013 and 2015. The latter focused on the Turfan Prefecture, but also the Yili Kazakh Autonomous Prefecture, Bayinguoleng Mongol Autonomous Prefecture, Changji Hui Autonomous Prefecture, Balikun Kazakh Autonomous County, Hami City, Gansu Province and Beijing in China. Visits in Central Asia included Uzbekistan (Tashkent, Samarkand and the Fergana valley), Tajikistan (Isfara valley); Kyrgyzstan (Bishkek) and Kazakhstan (Shymkent, Almaty, Yili Basin). Fieldtrips encompassed visiting sites, regional museums, archaeological institutions, documentation centres, studying objects, collecting literature, and meeting specialists.

Reviewing an extensive body of excavation reports showed that the quality of archaeological evidence in Xinjiang is variable, depending on the research intensity of the area, preservation conditions, and reporting standards.

Early explorers focused on Eastern Xinjiang, the Turfan Basin, Lop Nur, the northern and southern Tarim Basin up to Khotan in the south and Kizil in the north. Modern research included the northern and southern Tarim Basin, the Turfan and Hami basins, and eastern and western Tianshan area. The Lop desert was investigated less intensively, but is complemented by work of early explorers as Stein, Hedin and Bergman. Research in the Dzungarian Basin, southern Altai and eastern Pamirs gained more attention recently.

Settlements are less documented than cemeteries, due to poorer preservation, the location on lower grounds, and higher exposure to erosion and/or sand coverage. Few campsites were discovered, which can be expected as nomads leave few traces behind.

Organic remains are well preserved in the dry Turfan and Hami basins, the Taklamakan and southern Tarim Basin, less so in the slightly more humid northern Tarim Basin, and far worse in the upper Yili valley due to more frequent rainfall. In the southern Tarim Basin, the enormous accumulation of sand has buried many sites. Widespread looting led to damage of grave structures and disappearance of grave goods.

Excavation reports vary from a few to several hundred pages, describing the distribution and structure of graves, the nature of the burial, inventories, with plan and section drawings, and discussing chronology. Summary reports describe model examples of each grave type.

## 2 Positioning within the niche grave debate

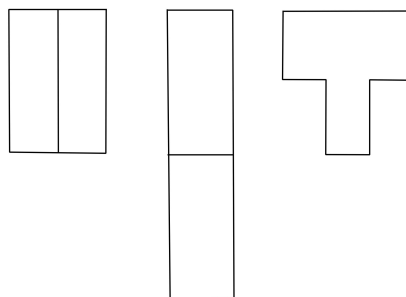
The emergence of niche grave practices across Eurasia from the Pontic in the west to the Loess Plateau and Manchurian Plain in the northeast has drawn widespread attention among scholars, who investigated their form, origins and distribution.

This chapter sets off defining what is understood by ‘niche grave’ (§ 2.1), before reconstructing the debate on niche grave practices in Inner Eurasia (§ 2.2–§ 2.6). This enabled evaluating the development of niche graves as a research category, understanding how cultural change has been explained against different theoretical paradigms, and positioning my own research within this debate (§ 2.7).

### 2.1 Terminological ambiguity

In Chinese literature, no single term exists to describe this grave form and its many manifestations, but common denominations are *pianshimu* 偏室墓, *ceshimu* 侧室墓 (‘side chamber tomb’) and *tudongmu* 土洞墓 (‘earthen cave tomb’) next to numerous variations. In English literature, *catcombs* and occasionally *niche grave* are found. In Russian and Central Asian literature *katakomba* or *podboi* are common. The latter figures as loanword in other languages. In German literature, *Katakombengrab*, *Grüfte* and *Stollengrab* are used.

In this dissertation, *niche grave* is defined as an entry shaft with one or more niches in which one or more bodies are deposited. Niches differ from chambers in their small size, so complex tunnel graves or graves with one or multiple chambers organised along a corridor are excluded from the definition.



**Figure 2.1** – Lateral (L), longitudinal (C); and perpendicular (R) niche grave.

This ambiguity shows the need for sharp definitions to distinguish different regional traditions. To facilitate discussion, I distinguished three categories, based on the relative positioning of the niche (and body) versus the entry shaft: 1) lateral niche graves, with niches laterally adjacent to the long walls of the entry shaft (*podboi*); 2) longitudinal niche graves, with niches lengthwise along the axis of the entry shaft cutting one of the short walls; and 3) perpendicular niche graves, with niches perpendicular to the entry shaft (Fig. 2.1). Further variability exists in the form of entry shaft and niche (oval, circular or quadrangular) and the connection between the two (flat, sloping or stepped).

## 2.2 ‘Catacomb migrations’ of the Bronze Age

Discussions on niche graves started with the discovery of the Catacomb culture, which emerged c. 2800/2700 BCE (§ 6.2). The latter was identified by V.A. Gorodtsov, who divided the Northern Pontic Bronze Age into a Pit Grave (Yamnaya), Catacomb (Katakombnaya), and Timber Grave (Srubnaya) culture. Gorodtsov saw the catacombs – existing of a (stepped) entry pit leading to one or more niches – as introduced by newcomers.<sup>1</sup> The increasing chronological and regional articulation of these cultures gradually exposed flaws in this categorisation.<sup>2</sup>

Discussions initially focused on autochthonous vs. allochthonous development of the Catacomb cultures and, as J.P. Mallory stated, niches in graves were used as *diagnostic cultural markers* to map *catacomb migrations*.<sup>3</sup> Indo-European specialists quickly dominated the debate, since the Northern Pontic not only represented a centre of the Catacomb culture, but also a popular candidate for the Indo-European homeland. Gimbutas merged the Catacomb culture together with the Pit Grave and other cultures into one *Kurgan culture*

<sup>1</sup>Gorodtsov 1905; Gorodtsov 1907.

<sup>2</sup>Kaiser 2003; Kaiser 2007; Chernykh 2008; Gerling 2015, 19–25.

<sup>3</sup>Mallory 1997; Klein 1963.



and saw its distribution as a dispersion of a Proto-Indo-European language community.<sup>4</sup> Others claimed a Proto-Indian-Iranian identity for the Catacomb cultures.<sup>5</sup>

Katarzyna Ślusarska criticised the migrationist approach: *...cultural change was explained by migration, a conflict between indigenous people (in this case Yamnaya culture) and newcomers (Catacomb culture), or by evolution within the same ethnos without, however, dwelling on the mechanisms that precipitated the process of change.*<sup>6</sup> She stated that, behind any taxon related to the catacomb phenomenon, lies the conception of two rivalling groups: a pit and catacomb one.<sup>7</sup>

By investigating mortuary variability and drawing on archaeology, ethnolinguistics and semiotics, Ślusarska aimed at reconstructing the symbolic system and funeral theory encoded in the 'catacomb entity'. By focusing on ritual behaviour *in se* and explaining funeral rites from the perspective of Indo-European mythology, she adopted a strongly interpretive approach. She attached meaning to funeral space, location of the burial space, the barrow, grave, treatment of the body, grave goods and offerings. The bipartite grave structure of the catacomb, was associated with the notion of a cave as a border place between the underworld and the living.<sup>8</sup> Ślusarska further advocated a bi-centric origin of the catacomb entity in the Dnieper and Northern Donets-Don basin.<sup>9</sup>

N. I. Shishlina supported an allochthonous development interpreting (im)migration of pastoralist catacomb people as a response to environmental change facilitated by seasonal mobility.<sup>10</sup> Other studies used population genetics to investigate the origins of the Catacomb people.<sup>11</sup>

The above shows that traditional diffusionist theories of 'Catacomb migrations' of Indo-European speakers gave way to *cognitive-processual* attempts to develop funeral theories – *volens nolens* confirming Indo-European narratives – and other explicatory models emphasising the role of the environment or biological identity of the catacomb builders.

<sup>4</sup>Gimbutas 1956; in Anthony 2007, 306–307.

<sup>5</sup>Parpola 1999.

<sup>6</sup>Ślusarska 2006, 24.

<sup>7</sup>Ślusarska 2006, 157–158.

<sup>8</sup>Ślusarska 2006, 136–153.

<sup>9</sup>Ślusarska 2006, 156.

<sup>10</sup>Shishlina 2004.

<sup>11</sup>Wilde 2014.

## 2.3 Niche graves and historical migrations of the Early Iron Age

From the start, scholars have linked niche graves and their corresponding archaeological cultures in Central Asia to ethnonyms from ancient written sources. Greek, Roman, and Chinese historical records refer to the Saka, Yuezhi, Wusun, Rong, Xiongnu, Huns, Sarmatians and Massagetae. Niche grave practices have been attributed to all of them.

In the 1930's, Aleksandr N. Bernshtam attributed the mounded niche graves at the Kenkol cemetery in the Talas valley in the upper Syr Darya basin to the Xiongnu, dating it 1<sup>st</sup> c. BCE to 1<sup>st</sup> c. CE.<sup>12</sup> He was criticised by S. S. Sorokin, who advocated local development between c. 2<sup>nd</sup>–4<sup>th</sup> c. CE.<sup>13</sup> Hermann Parzinger attributed them to the middle and late Wusun Period (1<sup>st</sup>–4/5<sup>th</sup> c. CE) claiming strong Hunnic influence.<sup>14</sup>

Sergei Minyaev observed similarities between niche graves from 'Xiongnu Period' sites in the Yenisei area in south Siberia including the KII burial site of Kok'el, Aymirlig (both in Tuva) and Tepsey VII in the Minusinsk Basin, and those from Daodunzi in the Ordos. Shared features included a northward (or slightly deviating) body orientation, lateral niches closed with stone or plankwood, animal sacrifice, and artefacts common for the Xiongnu period, although he claimed niche graves were not diagnostic of Xiongnu tradition.

Minyaev argued niche graves were virtually absent from Xiongnu cemeteries in Transbaikalia, Mongolia, and the Ordos. He therefore postulated it was introduced by people who entered into an alliance with the Xiongnu during the 2<sup>nd</sup> or 1<sup>st</sup> c. BCE. These people probably came from an earlier culture where niche graves were common. He suggested the Subashi culture in the Turfan basin as a good candidate.<sup>15</sup>

Wu En agreed the niche graves of Daodunzi were introduced from outside, highlighting the complex origins of the Xiongnu.<sup>16</sup> Han Xiaomang attributed such influence to the Rong, referring to written sources and similarities between niche graves from Daodunzi and Yanglang Mazhuang in southern Ningxia.<sup>17</sup>

The Yuezhi are another popular candidate for ethnic attribution. A.M. Mandelshtam identified the occupants of lateral niche graves from Tulkhar, Aruktau and Kokkum in the

<sup>12</sup>Bernshtam 1940, 30–31; Bernshtam 1949, 359–365.

<sup>13</sup>Sorokin 1954; Sorokin 1956.

<sup>14</sup>Parzinger 2011 [2006], 819.

<sup>15</sup>Minyaev 1990b, 74–81; Minyaev 1990a, 91–99.

<sup>16</sup>Wu En 1990, 427.

<sup>17</sup>Han Xiaomang 1994, 11.

Beshkent valley and those from Babashov in the Amu Darya Basin, with the Yuezhi.<sup>18</sup> Iurii A. Zadneprovsky agreed with Mandel'shtam on the Yuezhi connection but went even further. Referring to ancient Chinese sources, he claimed that lateral niche graves existed along all migration paths of the Yuezhi including in their homeland Gansu, the Tarim Basin, Semirechye, Fergana Basin, Zeravshan Valley, and northern Bactria. He concluded all these belonged to the Yuezhi.<sup>19</sup>

Lü Enguo countered Zadneprovsky's view stating that the Yuezhi could not have dwelled in so many places and periods as there are niche graves in Xinjiang and Gansu, since many sites post- or antedate the recorded migrations, and their material culture varies significantly. He claimed that the niche graves of Chawuhugou Cemetery III – the only site Zadneprovsky discussed for Xinjiang – were used by Xiongnu rather than Yuezhi.<sup>20</sup> He stated that Zadneprovsky's reasoning implied all niche graves of the Subeixi culture belonged to the Yuezhi, a point Lü contested resolutely: not only do niche grave practices in the Turfan basin exhibit strong local features and homogeneity but they also share similarities with Pazyryk in the Altai (implying Saka affiliation) and Noin Ula in Inner Mongolia (implying Xiongnu affiliation). Lü concluded that the coexistence of shaft and niche graves in Xinjiang made it problematic to claim different ethnic affiliation.<sup>21</sup>

Gorbunova was also sceptical towards diffusionist theories, but equally referred to multi-ethnic influence from the Wusun, Yuezhi, and Sarmatians to explain innovative grave forms including niche grave practices in the Fergana valley.<sup>22</sup>

In the southern Ural steppes, the emergence of niche graves is commonly attributed to the Sarmatians. This practice emerged in the Early Sarmatian or Prokhorovka culture (4<sup>th</sup>–2<sup>nd</sup> c. BCE), with some earlier examples of the late 5<sup>th</sup> c. BCE. This culture, distributed along the Ilek and Or rivers, is seen partly as a continuation of local Sauromatian culture, and partly resulting from a population influx from the forest-steppe trans-Urals, northwestern Kazakhstan, and possibly the Aral Sea region.<sup>23</sup> Graves with lateral or perpendicular niches, graves with side-ledges, and southern body orientation, are attributed to newcomers.

T. Sulimirski noted that foreign influence is obvious in the late 5<sup>th</sup> c. BCE remains found in the Ilek River area south of Orenburg. He pointed to the striking resemblance with earlier remains in central Kazakhstan, notably the Syr Darya delta. He suggested

<sup>18</sup>Mandel'shtam 1968; Mandel'shtam 1978; Mandel'shtam 1984.

<sup>19</sup>Zadneprovsky 1999, 3–6.

<sup>20</sup>He also reacted against scholars attributing them to the Tujue based on the type of horse sacrifice, claiming instead greater similarity with 'Xiongnu sites' dated 1<sup>st</sup>–3<sup>rd</sup> c. CE.

<sup>21</sup>Lü Enguo et al. 2001, 102–103.

<sup>22</sup>Gorbunova 1986, 197–209.

<sup>23</sup>Smirnov 1964; Smirnov 1975; Moshkova 1963; Moshkova 1974.

Massagetan migrants from that area were responsible for discontinuity in the Prokhorovka culture, referring to the mounded niche grave architecture, southern body orientation, and attribution of the Prokhorovka population to the ‘Pamiro-Fergana’ type.<sup>24</sup>

M. Julio Bendezu-Sarmiento stated that the emergence of *podboi* and catacombs in late Early Iron Age in Central Kazakhstan was linked to the Sarmatians and resembled 2<sup>nd</sup> c. BCE Wusun practices (graves with *podboi* or other grave types with stone mounds) in the Yili valley in Semirechye.<sup>25</sup>

Zoya A. Barbarunova claimed that, during the 4<sup>th</sup>–3<sup>rd</sup> and 3<sup>rd</sup>–2<sup>nd</sup> centuries BCE, ‘massive nomadic migrations’ from the southern Ural steppes towards the lower Don and Kuban basins, mid-Ishim region, and Zaravshan Basin, resulted in a near-abandonment of the southern Ural steppes by the 1<sup>st</sup> c. BCE.<sup>26</sup>

## 2.4 Alternative explanations and regional approaches

Without historical references to burial practices, it is difficult to identify ethnic groups in the archaeological record. Some scholars relied more heavily on the archaeological record and tried to investigate the emergence of niche graves from a regional perspective. *Volens nolens*, many scholars advocating autochthonous development still departed from ethnic attributions, which they now simply took for granted.

K.A. Akishev and G.A. Kushaev, explained niche graves in the Yili Basin as a local development. Their archaeological work in the middle Yili Basin in Kazakhstan in the nineteen sixties is a core reference for scholars in Central Asia and China.<sup>27</sup> The ethno-chronological framework they created by matching archaeological data with Chinese historical accounts is widely adopted, i.e. that of a Saka Period (7<sup>th</sup>–4<sup>th</sup> BCE) and Wusun Period (3<sup>rd</sup> c. BCE–3<sup>rd</sup> c. CE). It thus became common practice to attribute archaeological remains including graves to the Saka respectively Wusun Period and subsequently to these ethnic groups. While mounded graves in the middle Yili Basin were attributed to the Wusun by Akishev and Kushayev, scholars in China associated those in the upper Yili Basin with the Saka.

It was assumed that when the Wusun emerged, they took over Saka territory, including Semirechye and northern Kyrgyzstan, up to the Chu and Talas rivers in the west, the Tianshan area in the east, the Balkash area in the north, and Lake Issyk-Kul in the south.<sup>28</sup>

<sup>24</sup>Sulimirski 1970, 82–84.

<sup>25</sup>Bendezu-Sarmiento 2004, 75.

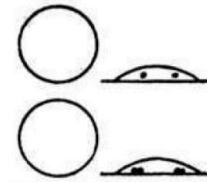


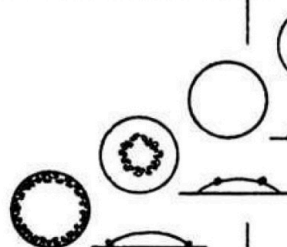


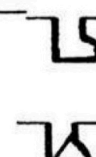
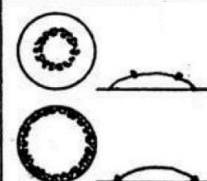
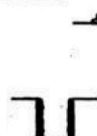

<sup>26</sup>Barbarunova 1995, 121–122.

<sup>27</sup>Akishev et al. 1963.

<sup>28</sup>Aqishefu et al. 2013, 116.

But why were niche graves in the upper Yili Basin attributed to the Saka, and those in the middle Yili Basin to the Wusun; and why did they have different assemblages despite their geographical proximity? How well could Saka and Wusun assemblages be distinguished? Kazim Abdullaev noted the difficulty of identifying Wusun remains, and argued continuity between both cultures is reflected by the term ‘Saka-Wusun’ introduced by Bernshtam.<sup>29</sup> These issues drew my attention during my fieldtrip in 2013 and are addressed from an archaeological rather than an ethno-historical perspective in § 8.2.

Akishev and Kushayev claimed autochthonous development for the niche graves in the middle Yili Basin. Firstly, they distinguished two grave types. Shaft graves were attributed to both Saka and Wusun culture, and niche graves mainly to Wusun culture, which they claimed originated from Saka culture. Secondly, they hypothesised that niche graves originated from shaft graves, and that the existence of transitional types supported this.

	Type of surface structure		Type of subsurface structure		
	Type I	Type II	Type I	Type II	
2 <sup>nd</sup> – 3 <sup>rd</sup> c. CE					II-III
1 <sup>st</sup> c. BCE – 1 <sup>st</sup> c. CE					I-II-III
3 <sup>rd</sup> – 2 <sup>nd</sup> c. BCE					I-II

**Figure 2.2** – Grave typology Yili Basin, Wusun period (c. 300 BCE–300 CE) (Adapted from Akishev and Kushayev 1963, 244).

Fig. 2.2 illustrates their theory. Shaft graves evolved from simple shafts to shafts with a shutter placed diagonally creating a separate space for the dead. That space was gradually enlarged to take the form of a niche so that the grave was divided into a niche and an entry shaft. In the final stage a step was spared out of the floor of the entry shaft, which not only demarcated the niche but also supported the shutter. Akishev and Kushayev argued that

<sup>29</sup>Abdullaev 2007; Bernshtam 1952.

surface structures concurrently developed from mounds with a pronounced circular stone enclosure to a less visible one, and that shaft graves coexisted at all stages with other grave types.<sup>30</sup> As argued in § 8.2, this theory of local development does not hold.

Akischev and Kushayev explained the origins of niche graves in the middle Yili Basin from a local, and perhaps also national perspective. The underlying assumption was that niche graves emerged with the Wusun who, they claimed, descended from the Saka. Claiming descent was necessary to defend autochthonous development.

Wang Yue advocated local development for niche graves in the Turfan Basin. In a comparative analysis of Kakeqiake, Subeixi, and Jiaohe Gouxu, he argued the small structural differences between shaft and niche graves indicated both were by definition shaft graves. Both, he stated, occur in the same stratigraphic context —though shaft graves occurred in earlier periods too — and have similar grave goods. Wang attributed shaft and niche graves to the same culture, allowing for chronological differences but ignoring any influence from outside. He admitted the relation between both remained difficult to explain.<sup>31</sup>

Finally, some advocated local development based on practical considerations. In a study on Han graves in the Luoyang area in Henan, Lukas Nickel noted the appearance of *Stollengräber* from the late Zhanguo Period onward. Following Zhang Jian, he allowed for some influence from the Qin in Shaanxi, when they controlled the Luoyang area after 256 BCE.<sup>32</sup> Nickel claimed that allegiance to Qin rulers alone could not explain the fast changes in grave construction, and that economic motivations were decisive: not only did the *Stollengrab* protect the dead, it was also less energy-consuming and therefore first used by common people. In the early 2<sup>nd</sup> c. BCE, the local Han elite increasingly used the *Stollenbauweise*, which they now lined with hollow bricks, bricks or stone slabs. Nickel saw a continuous development from shaft to niche graves and finally tunnel graves with multiple chambers. Although he had no intent to link these to a wider niche grave phenomenon, the term *Stollenbauweise*, accommodating both simple niche and complex tunnel graves, illustrates how terminology steers the discussion into different directions.<sup>33</sup>

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<sup>30</sup>Aqishefu et al. 2013, 201–203, 261.

<sup>31</sup>Wang Yue 2001, 42–63.

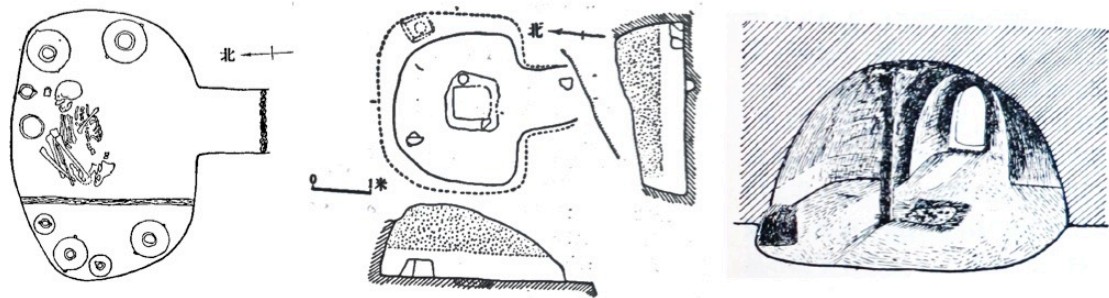
<sup>32</sup>Wang Zhongshu 1954.

<sup>33</sup>Nickel 2011, 96–101.

## 2.5 The Chinese perspective: eastern or western origins?

In the 1980's, Su Bingqi promoted a regional approach in Chinese archaeology as an alternative to the traditional model of cultural diffusion from the Huang He basin.<sup>34</sup> Mapping and investigating burial systems were instrumental in defining and understanding the rise, fall, and distribution of regional cultures. Soon afterwards, niche grave practices gained increasing attention as one of the most popular and characteristic grave forms in China.

Scholars in China initially shared the view that niche grave practices originated in Gansu and Qinghai, or Mongolia. Xie Duanju set the tone claiming that niche graves – which he called early *tudongmu* 土洞墓 or ‘earthen cave tombs’ – in China originated in the upper Huang He basin. He distinguished two types with a ground plan in the form of the character *tu* 凸 respectively *yue* 凹. Both types, he stated, originated in the Majiayao culture, after which they developed differently. The *tu* 凸-shaped graves prevailed in the Banshan and Machang types of the Majiayao culture, although *yue* 凹-shaped graves existed too. The Qijia culture only featured *tu* 凸-shaped graves.<sup>35</sup> In the Huoshaogou, Kayue, Xindian and Shajing cultures the former type disappeared and *yue* 凹-shaped graves became the rule. Xie assumed the architecture of niche graves was originally inspired by local cave dwellings.<sup>36</sup>



**Figure 2.3** – LEFT: Grave of Tuyutai, Lanzhou, Gansu; CENTRE: Groundplan of House F5, Shilouchagou, Shanxi; RIGHT: Reconstruction of House F5. (After Xie Duanju 1987, 1100, Fig. 1.2; 1103, Figs. 3.2 and 3.4).

Xie could not find direct evidence that the Majiayao-Banshan niche graves had their parallels in local house architecture, and therefore referred to Shilouchagou in Shanxi to support his theory (Fig. 2.3).<sup>37</sup> Han Xiaomang adduced the evidence of both late neolithic

<sup>34</sup>Su Bingqi 1984, 10–17.

<sup>35</sup>At the time Xie wrote his article, the Mogou site had not yet been excavated. The latter would prove that *yue* 凹-shaped graves did exist too (129 ff.).

<sup>36</sup>Xie Duanju 1987, 1097–1104.

<sup>37</sup>Xie Duanju 1987, 1103–1104.

niche graves and cave dwellings of Caiyuan in Ningxia, which resembled each other strikingly and, according to him, constituted direct evidence for coexistence and influence.<sup>38</sup>

Niche grave practices from the former Qin territories also drew scholarly attention. Zhao Jianlong investigated the origins of ‘niche grave and flexed burial practice’ of the Warring States period (480–221 BCE) in the middle and upper Huang He basin. He suggested attribution to the Qin(-Rong), and claimed niche graves and flexed burials originated in the early Majiayao culture in the upper and middle Huang He basin. This area was historically associated with the pastoralist Rong, Di and Qiang. Following the eastward expansion of the Qin-Rong, a branch of the western Rong, the niche grave tradition could have spread into the Central Plains and beyond. The broad term *dongshimu* 洞室墓 or ‘cave chamber tomb’, forced Zhao to expand the discussion to any horizontal grave type in China.<sup>39</sup>

The importance of ‘niche graves and flexed burials’ as diagnostic Qin features was somewhat downplayed by Lothar von Falkenhausen. Allowing for flexed burials as a typical Qin custom, he argued that *Catacomb tombs (in which the coffin is placed in an enclosed chamber laterally adjacent to a vertical shaft) ... are common in antecedent Neolithic cultures and occasionally seen during the Western Zhou, they appear in Qin contexts only during the second half of the fourth century BCE, when they seem to be a new phenomenon, undoubtedly linked to changes in the mortuary ideology that occurred during that period.*<sup>40</sup>

Chen Ge drew Xinjiang into the debate, supporting eastern origins for the niche graves and adopting Xie Duanju’s terminology. In the absence of recent excavations in the Yili Basin, Chen dated niche graves in Xinjiang no earlier than the 1<sup>st</sup> c. BCE. He claimed introduction into Xinjiang from the east via the Hexi Corridor attributing a core role to the Shajing culture (3000–2500 BP, sic), claiming pottery and niche graves from the Shajing site (1000–450 BCE) were similar and earlier than those from Subeixi in the Turfan Basin.

To support transmission from east to west, Chen stated that *tu* 凸- and *yue* 凹-shaped graves represented the earliest niche graves, exhibiting a long tradition from c. 2500 to 500 BCE, while geographically and chronologically providing the most proximate parallels to those of Xinjiang. He argued niche graves could easily be excavated from the loess – contrary to Xinjiang where soil conditions were less favourable – and could be inspired by local cave dwellings. He claimed similarities between niche graves from Shajing in Gansu, Subeixi in the Turfan Basin, and Tiemulike in the Yili Basin, all dated to the Early Iron Age. He concluded that the distribution of niche graves corresponded with the recorded

<sup>38</sup>Han Xiaomang 1994, 1028, 1030.

<sup>39</sup>Zhao Jianlong 1988.

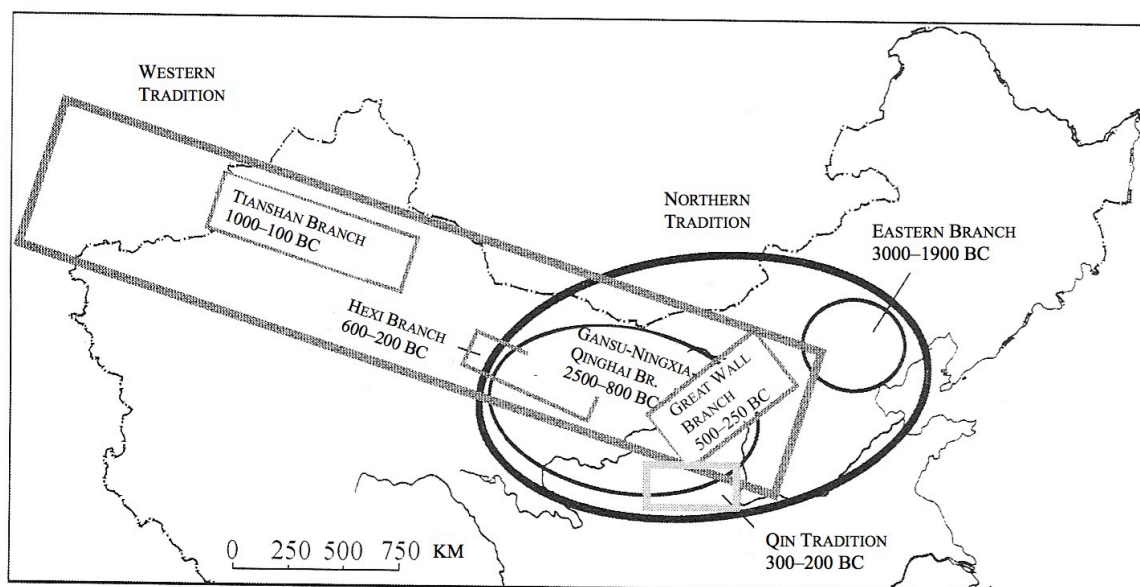
<sup>40</sup>Falkenhausen 2002, 496.



migrations of the Yuezhi and Wusun.<sup>41</sup> When I met Chen Ge in 2013, he was reviewing his article from 1993 and now advocates transmission from the west.

Niche graves from the Shajing culture in the Hexi Corridor also raised questions about their origins. Similar practices from Huoshaogou of the chronologically most proximate Siba culture seemed to provide a clue. However, both were attributed to different systems. Niche graves from Shanshan in Xinjiang and Tongxin in Ningxia were so similar and later than than the Shajing ones, that the former were interpreted as possible influence from the latter.<sup>42</sup> In short, the Shajing niche graves could not be linked to immediate antecedents, but were thought to have initiated traditions in Xinjiang and Ningxia.

Following recent excavations, Han Jianye challenged the view that niche graves originated in the upper Huang He Basin inspired by local cave dwellings. He set up a pedigree of niche grave practices in the north – they hardly occur elsewhere in China – using a broad comparative analysis. Three traditions were identified for the pre-Qin period: 1) a Northern Tradition; 2) a Western Tradition; and 3) a Qin Tradition (Fig. 2.4).



**Figure 2.4** – Han Jianye’s niche grave systems of the pre-Qin period. (Translated from Han Jianye 2013, 59, Fig.1)

The Northern Tradition (c. 3000–800 BCE) represented the earliest appearance and disappearance of niche graves lasting from the early Chalcolithic to the Bronze Age. Han distinguished a) an Eastern Branch (3000–1900 BCE) in Inner Mongolia and Hebei where niche graves first appeared and from where they spread more eastward to initiate the b)

<sup>41</sup>It should be noted that Chen Ge’s definition of *shuxue dongshimu* 竖穴洞室墓 includes also chamber tombs with sloping passageways from Astana and Halahezhuo postdating 300 CE, see Chen Ge 1993, 401–414.

<sup>42</sup>Gansusheng wenwu kaogu yanjiusuo 1990, 230.

Gansu-Qinghai-Ningxia Branch (2500–800 BCE). The Northern Tradition was associated with a flexed body posture and an agropastoral lifestyle. Han argued that niche graves from the northern tradition probably developed from the local shaft graves. Once niche grave practices spread to the Gansu-Qinghai-Ningxia area, they were possibly influenced by the architecture of local cave dwellings.

Han Jianye stated the Western Tradition (1000–100 BCE) only emerged in the Early Iron Age and could be divided into a) Tianshan Branch (1000–100 BCE) represented by the Yili and Subeixi cultures; b) Hexi Branch (600–200 BCE) represented by the Shajing culture; and c) Great Wall Branch (500–250 BCE) represented by the Yanglang culture in Southern Ningxia, Eastern Gansu and the Taohongbala culture in mid-southern Mongolia. He associated this tradition with extended burials on the back and pastoralism/nomadism, and assumed they also originated from shaft graves. Han saw the Western Tradition as originating in the Don and lower Volga basins, from where it spread along the Amu Darya Basin towards the Tianshan, the Hexi Corridor and the Great Wall area in the east. The Qin Tradition (c. 300–200 BCE), he claimed, appeared late but quite developed and was the forerunner of niche graves appearing from the Han onward.<sup>43</sup>

Han Jianye’s comparative research provided the first comprehensive study on niche graves in northern China. However, it is somewhat generalist and the imposed timeframe of the pre-Qin Period implies niche grave practices of the Subeixi culture in the Turfan Basin fall outside the studied period, even though he attributed them to the Tianshan Branch of the Western Tradition. Finally, Han did not substantiate his theory of western origins for his ‘Western Tradition’, and I contest that niche grave practices of the Yili and Turfan basins belonged to the same tradition (152; § 28.3; and § 28.1).

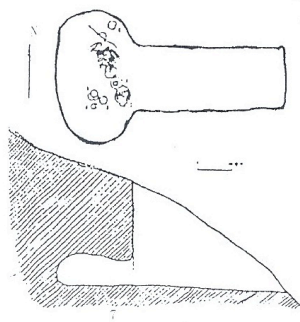
## 2.6 Setting up niche grave typologies

Xie Duanju was the first to classify niche graves, dividing them into those with a ground plan in the form of the character *tu* 冂 respectively *yue* 冂 (see § 2.5).<sup>44</sup> In their analysis of niche graves in Gansu and Qinghai, Zhang Zhonghua and Chen Honghai adopted Xie Duanju’s typology, which they labelled Type A and B, while adding another Type C. The latter resembled Type B, but was an open structure without actual niche, with an entry shaft and chamber separated from each other by roundwood and/or a ledge. They assumed a relation of descent between the three types. Type C was concentrated in the Gonghe Basin

<sup>43</sup>Han Jianye 2013, 58–72.

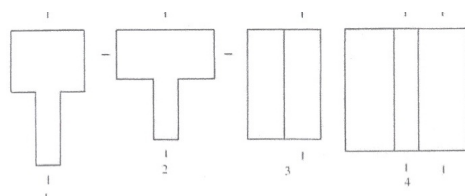
<sup>44</sup>Xie Duanju 1987.

in Qinghai and considered a local tradition. Their contribution was that grave typology was studied in combination with body posture, number of individuals, burial device, position of the body versus the entry shaft, and setting in the landscape.<sup>45</sup>



**Figure 2.5** – Grave M61, Minhe Mapai, Qinghai (After Zhang Zhonghua and Chen Honghai 2010, 3, Fig. 1.7).

Zhang and Chen argued that moving from higher to lower grounds could explain the shift from Type A to B graves. Type A was mainly distributed on hills in large burial sites, featuring large amounts of burial goods. Its design was likely the result of excavation from a hillside rather than flat grounds (Fig. 2.5). After people moved to lower grounds, they reasoned, grave design was adapted and became much smaller. During the early Qijia culture (c. 2000 BCE), the climate worsened and people shifted from a predominantly agricultural to a pastoralist way of life, requiring less equipment and therefore smaller graves.<sup>46</sup>



**Figure 2.6** – Typology of niche graves A, B, Ca and Cb (Ma Jinlei 2013, 34, Fig. 1).

In his study of Bronze Age niche graves in Gansu and Qinghai, Ma Jinlei presented a new typology to understand their variation. Although he departed from Xie Duanju's general term *tudongmu* 土洞墓 or 'earthen cave tomb', his innovation lay in considering the direction of the entry shaft relative to the niche (Fig. 2.6). *Tu* 凸-shaped graves were split into Type A, where niches form a straight line with the entry pit (*zhixianshi tudongmu* 直线式土洞墓), and Type B, where niches stand perpendicular to the entry shaft (*chuishishi tudongmu* 垂直式土洞墓). *Yue* 曰-shaped graves were represented by Type C (*pingxingshi tudongmu* 平行式土洞墓) with the niche positioned laterally to the entry shaft. Sub-type Ca featured one niche, while Cb, featured two or more niches at both sides of the shaft.<sup>47</sup>

<sup>45</sup>Zhang Zhonghua et al. 2010, 1–14.

<sup>46</sup>Zhang Zhonghua et al. 2010, 9.

<sup>47</sup>Ma Jinlei 2013, 32.

## 2.7 Migration and models of cultural change

The niche grave debate as reconstructed in Chapt. 2 demonstrated that it was largely monopolised by scholars in China and Central Asia. It also exposed methodological issues.

Despite attempts to establish typologies (§ 2.6), terminological ambiguity raised questions about the validity of ‘niche graves’ as research category (§ 2.1). To facilitate comparative research, I suggested a distinction into lateral, longitudinal and perpendicular niche graves, which could be used as a basis for further regional and chronological categorisation (10, Fig. 2.1).

The debate illustrated how the emergence and distribution of niche grave types have been explained methodologically. Scholars rarely advocated autochthonous development (§ 2.4). External influence was mostly explained as resulting from migration, based on linguistic, historical, ethnic, racial, archaeological grounds (§ 2.2, § 2.3, § 2.5), and occasionally, environmental and biological arguments (11). Scholars were less concerned with the reason why people migrated.

Migration was largely supported by ethno-historical interpretations. The latter are particularly persistent for the Early Iron Age and early historic period, for which written records abound (§ 2.3). This is problematic in various ways. As most grave occupants left no written records, scholars predominantly rely on historical records from agrarian civilisations in which these people are presented from a core-periphery perspective. Moreover, translating generic ethnonyms from these sources into specific ethnic groups on linguistic, racial or archaeological grounds is fraught with difficulties. As there is no one-to-one relationship between archaeological cultures and ethnic groups, specific burial practices can hardly be attributed to the latter. Finally, dwelling places and migration routes of ethnic groups are ambiguously documented and open to multiple interpretations. Using these to explain the distribution of niche grave practices is therefore speculative.

Despite these pitfalls, culture-historical interpretations have largely dominated the niche grave debate. While it was commonplace to equate archaeological cultures, or distinct traits like grave types, with ethnic groups, migration models were permeated with notions of nationalism and imperialism. The latter is illustrated by the claim for eastern origins in § 2.5, the claim for local development by Akishev and Kushayev (14–16), and the implicit opposition between civilised farmers and invasive barbarian nomads (Han and Xiongnu).

The above can be explained by the fact that the culture-historical approach was deeply rooted in Soviet and Chinese archaeology. *Ethnische deutung* of archaeological unities in-

cluding burial practices was particularly tenacious here and persists into modern scholarship.<sup>48</sup>

As Michael Frachetti stated, migration theories dominated the post 1950 Soviet archaeology, parallel to the culture-history tradition in the west, where it was strongly criticised. The increasing reconciliation between western (Anglo-American) and non-western (Soviet, Chinese and postcolonial) scientific paradigms in the post-Soviet period, he argued, along with new data and innovative scientific methods, have refuelled discussions on migration.<sup>49</sup>

While migration paradigms have reclaimed their position as a model of cultural change, socio-economic developments including the adoption of horseback riding and mobile subsistence strategies are now central to them (see § 1.4). However, traditional theories as the wave-of-advance model introduced by A. J. Ammerman and L. L. Cavalli-Sforza claiming permanent expansion as a result of demographic pressure have largely been abandoned.<sup>50</sup>

Migration made its come-back with David Anthony a few decades ago. As an alternative to demic diffusion, or dismissing migration as explicative model altogether, Anthony proposed a model of cultural diffusion (acculturation) to explain cultural change. He argued migration was socially motivated rather than resulting from demographic pressure. Understanding the form of migration (short- and long-distance) was considered more important than the cause (environmental, economic, political, push and pull factors).<sup>51</sup>

As Frachetti stated, the migration debate evolved into two main streams, *short-and long-distance populations movements are seen as fundamental mechanisms for the formation and distribution of regional and archaeological culture... and as a primary social response to environmental, demographic, and political pressures. Critics view the archaeological record of Eurasia as a product of complex local and regional interaction, exchange, and innovation...*<sup>52</sup>

In this dissertation I depart from the question of autochthonous versus allochthonous development, based on a quantitative assessment of burial practices as explained in Chapt. 3. This a necessary basis upon which theories of migration or acculturation can be formulated (Part V). This discussion is intricately linked to socio-economic developments, whereby horse riding and mobility are seen as catalysts for the movement of people, goods and ideas (see § 1.4). All these elements are crucial in understanding the identity of niche grave users (§ 3.1), and I will return to them in my conclusions (273–274; 347).

<sup>48</sup>See Moshkova 1992; Dani et al. 1996 [1994]; Parzinger 2011 [2006], and in most Chinese excavation reports, see present chapter and Part II.

<sup>49</sup>Frachetti 2011.

<sup>50</sup>Ammerman et al. 1973; Ammerman et al. 1979; Ammerman et al. 1984.

<sup>51</sup>Anthony 1990; For the push-pull model of migration, see Lee 1966.

<sup>52</sup>Frachetti 2011, 195.

# 3 Methodology

## 3.1 Mortuary variability and identity

Analysing mortuary variability to understand patterns of continuity and discontinuity in burial practices, and the identity of their occupants and makers, was central to my research at the site and regional level (Parts III–IV). This formed the basis upon which theories of autochthonous or allochthonous development (implying migration or acculturation) could be formulated or refuted (§ 2.7).

The concept of mortuary variability was introduced by Lewis Binford and other New Archaeologists, who sought to explore different roles and identities of individuals as expressed in burial customs.<sup>1</sup> Binford claimed that mortuary variability was intricately linked with basic cultural features as subsistence activities and organisational complexity of the society, and thus challenged philosophical perspectives and culture history traditions, whereby cultural variation or change was seen as resulting *from either differential intellectual creativity or differential linear transmission and/or intergroup communication of ideas.*<sup>2</sup>

Quantitative analysis of mortuary variability focused initially on understanding associations between burial types and grave goods, and their significance in terms of social complexity and status.<sup>3</sup> Such approaches investigated different aspects of the *social persona* of the deceased, a term borrowed from Goodenough, and described by Binford as *a composite of the social identities maintained in life and recognized as appropriate for consideration at death.*<sup>4</sup>

The analyses in Parts III and IV combined a quantitative approach (investigating mortuary variability) with a critical research attitude (§ 3.3) to answer the research questions in § 1.1 and investigate different aspects of the identity of the niche grave occupants and

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<sup>1</sup>Binford 1971; O’Shea 1984.

<sup>2</sup>Binford 1971, 15.

<sup>3</sup>See O’Shea’s study in O’Shea 1984.

<sup>4</sup>Goodenough 1965, 7; Binford 1971, 17.

their makers.

Intra-cemetery mortuary variability, as understood here, reflects differences in chronology, expressions of identity such as status, gender, age, mode of subsistence, affiliation to different groups, kinship relations, profession, belief/ideology, environment, landscape as perceived by the local population, biological identity and diet. In understanding the identity of the niche grave occupants, I focused on unravelling different aspects of the *social persona* rather than ethnic or racial attribution.

Only a fraction of all aspects influencing mortuary behaviour can be linked to archaeological variables, and given the scope of this dissertation, a limited set of variables was investigated. These included a fivefold set of parameters related to chronology, grave architecture, human remains, animal remains and grave goods, as these were considered the main referers of information in the cemetery. Although landscape and space are important referents too, they are barely quantitatively assessed here.

Studying variability required departing from a polythetic culture model as introduced by David Clarke.<sup>5</sup> Here, individual cultural traits rather than archaeological cultures form the basic analytical units. The process of analysis used in the present dissertation is described below and includes sampling (§ 3.2); data collection (§ 3.3); structuring, shaping and aggregating the data (§ 3.4); and analysing and interpreting the data (§ 3.5).

## 3.2 Sampling

Mortuary variability was investigated at site and regional level (Parts III–IV). Assessing the reliability of the inferences made from the data requires some explanation on the sampling and its representativeness.

All documented sites with lateral niche graves in the Turfan Basin predating 300 CE were included into the database. Yanghai was chosen as case study because of the presence of niche graves, exceptional preservation conditions, and the long and continuous use of the cemetery (171). All excavated graves including their attributes were inputted into the database. For Yanghai, these included 218/c. 1000 graves on Terrace I, 223/c. 1500 graves on Terrace II and 78/c. 500 graves on Terrace III, yielding a total of 519 out of an estimated 3000 graves or c. 17% (see 173).

At the regional level, I inputted the graves of all reported sites in the Turfan Basin with lateral niche graves predating 300 CE, i.e. Subeixi, Shengjindian, Jiaohe Goubai and Jiaohe

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<sup>5</sup>Clarke 1968.

Gouxi. These yielded a pool of 150 graves, which were less well documented in comparison with the solid data set of Yanghai. Apart from Shengjindian which was fully excavated, there are no estimates available for the total number of graves at the other cemeteries (for more details on the sampling, see 173; 278).

### 3.3 Data collection

The strength of the methodology applied in Parts III and IV lies in its bottom-up approach. Data were collected and inputted into the database at the lowest possible level, so that these basic analytical units could be aggregated at any moment to the level needed. This made it possible to look at the data from multiple perspectives, views or paradigms. Quantitative methods could thus be used to enhance a critical attitude towards the data without starting from predefined categories (§ 3.4).

To facilitate the bottom-up approach, a database was designed in mySQL with the help of a specialist.<sup>6</sup> Each entity – including graves, surface and subsurface structures, human remains, animal remains, grave goods, visuals, radiocarbon dates, cemeteries – was entered as a separate record into the database and subsequently classified by defining it based on specific attributes. Decoding the latter as child tables technically enabled deconstructing and aggregating variables of mortuary behaviour in any desired fashion.

I manually entered a total of 5337 records into the database. Although not all these entities or their attributes were used in the present research, the database structure is shown here in its entirety to demonstrate its further potential (Figs. 3.1–3.2).

The records include basic information of all excavated graves retrieved from the excavation reports of Yanghai, Subeixi, Shengjindian, Jiaohe Goubei and Jiaohe Gouxi (§ 3.2; see also Chapt. 12 and § 20.1). Data were retrieved from static unrelated tables and plain text in these reports, and inserted one-by-one into the database.

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<sup>6</sup>Acknowledgments to Koen Timperman (Made4it).



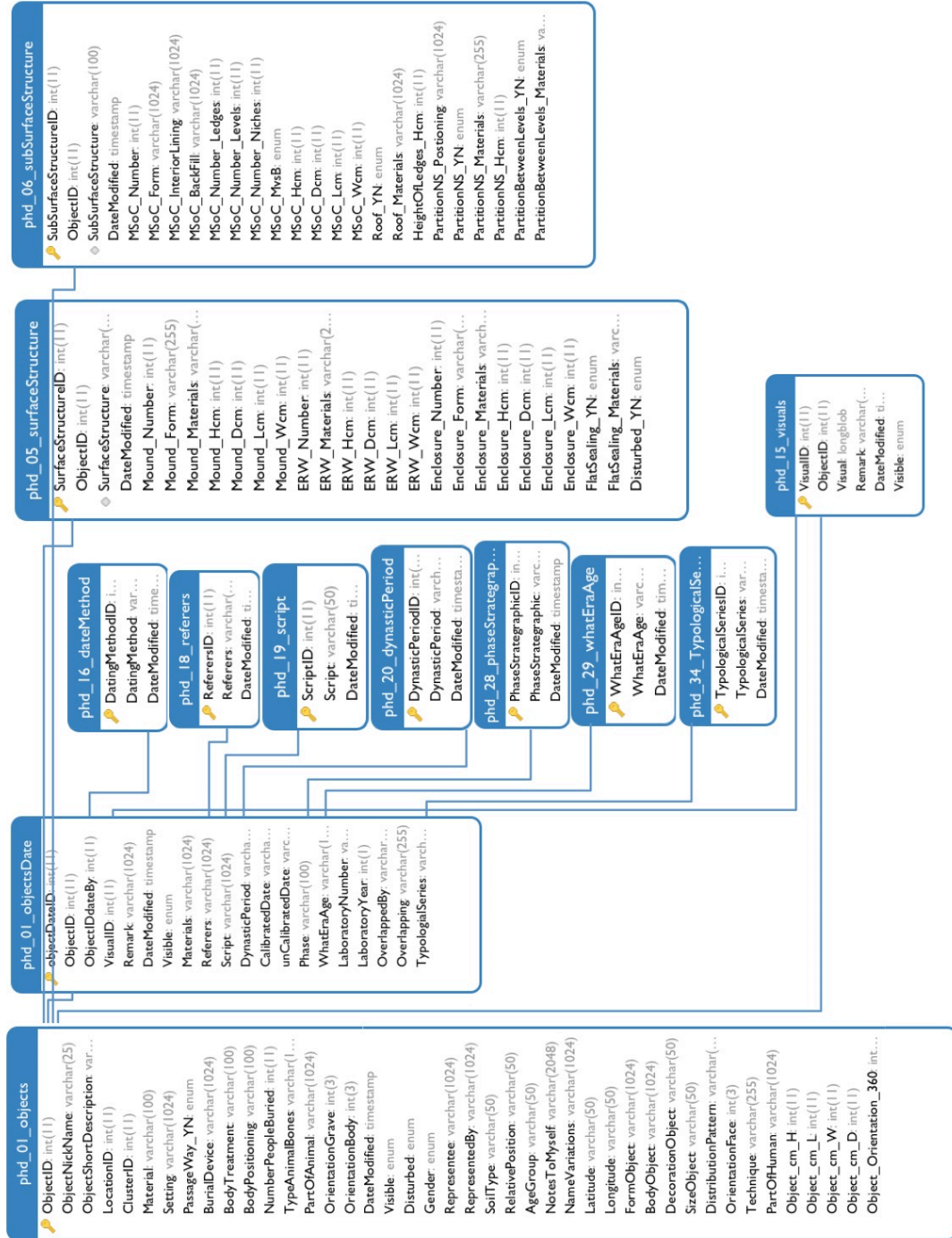


Figure 3.1 – Database structure (1/2)

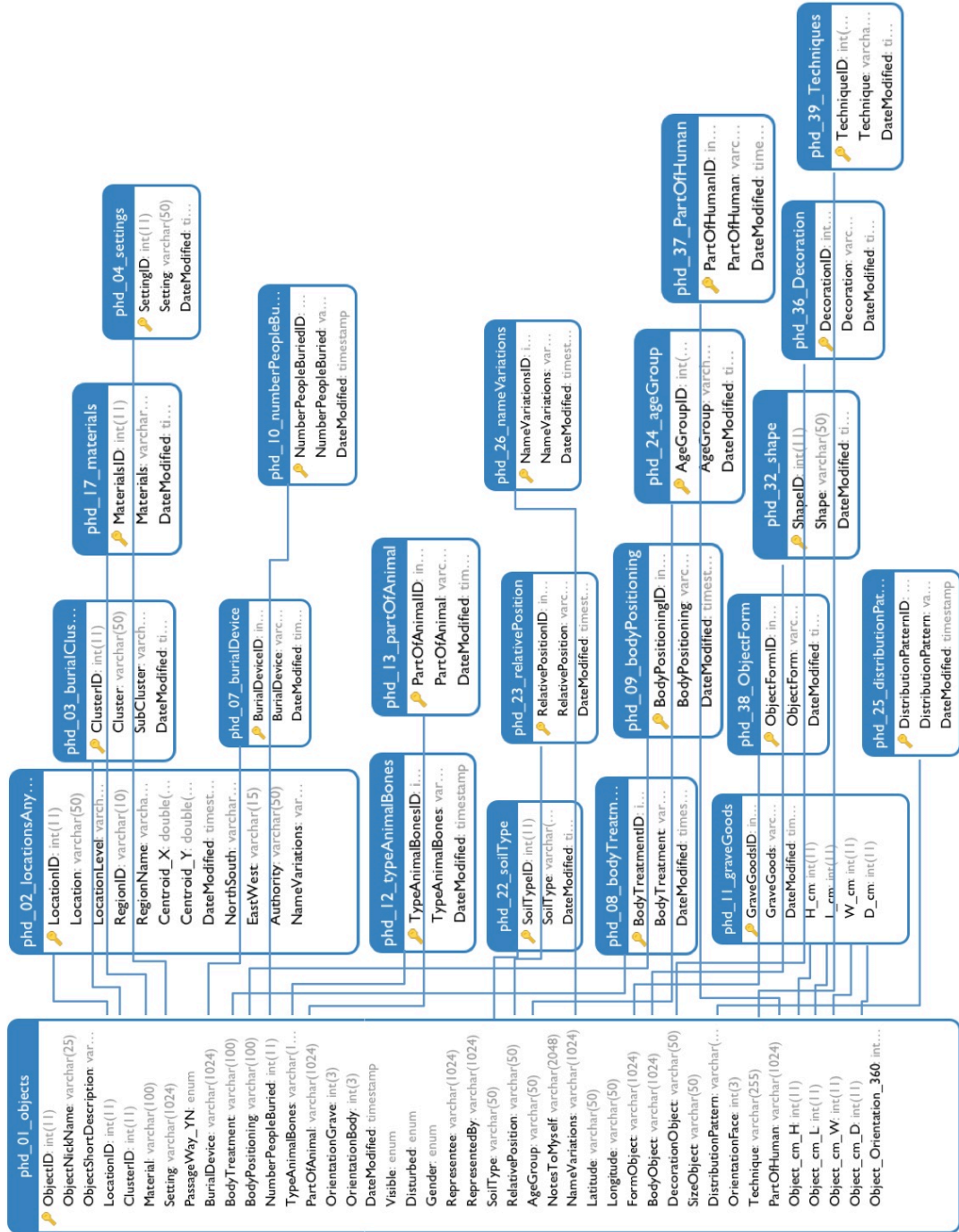


Figure 3.2 – Database structure (2/2)

Records or information bits were inputted as follows. When a grave (e.g. M1) or ancillary pit (e.g. AP1) was entered, all relevant variables related to surface structure, subsurface structure, orientation, location, dimensions, construction materials, and minimum number of individuals (MNI) were filled in. For human remains (e.g. M1HR1), variables as body posture, sex, age, type of bones, location in the grave were defined, and for animal remains (e.g. M1AR1) type of animal, sex, age, type of bones, and location in the grave. When grave goods (e.g. M1-01) were entered, variables as material(s), size, techniques, and decoration were defined. The addition of a field ‘Nickname’ allowed for easy association of various entities with grave numbers. Images were inputted for visual reference.

Chronological information was entered in the form of ‘date objects’, defined on the basis of attributes as dating method, material, radiocarbon dates, typological information. This was crucial, since identifying trends and patterns in burial practices depends largely on the availability of a sound chronological framework, but the nature of chronological information is very diverse and collecting such data in a coherent way was a considerable challenge (§ 1.3). Inserting ‘date objects’ into the database was my solution to enable flexible aggregation on objects carrying different types of chronological information (Fig. 3.1).

Any item could thus be entered into the database including burial sites and clusters. The latter were defined based on location and setting. Although the database was set up as a tool for my dissertation, its potential is far from exhausted and could be used or expanded for future research (Chapt. 30). The database could not be supplied digitally as an appendix, as its core data are derived from the yet unpublished multivolume excavation report of Yanghai.<sup>7</sup>

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<sup>7</sup>Tulufan Diqu Wenwuju et al. forthcoming.

## 3.4 Structuring, shaping and aggregating the data

Data collection at the lowest possible level allowed for aggregating flexibly on specific attributes rather than predefined research categories. This initially unstructured collection of data was subsequently structured through contextualising, categorising, calculating, correcting, and condensing the data.

The creation of such ‘flexible’ objects allowed carrying out analyses on any desired research construct. For example, instead of inserting a grave complex directly in the database, the grave pit(s), mound, satellite pits and graves, date objects, were all separately inserted and defined based on all relevant variables. This enabled assessing type, completeness and location of animal remains against sex of the grave occupant, grave type or terrace phase (221, 222, 225, Tabs. 15.6, 15.7 and 15.8).

Collection at the ‘lowest possible level’ required that variables, e.g. ‘body posture’, ‘relative positioning’ or ‘animal bones’, were defined as detailed as possible (see Figs. 3.3–3.5).

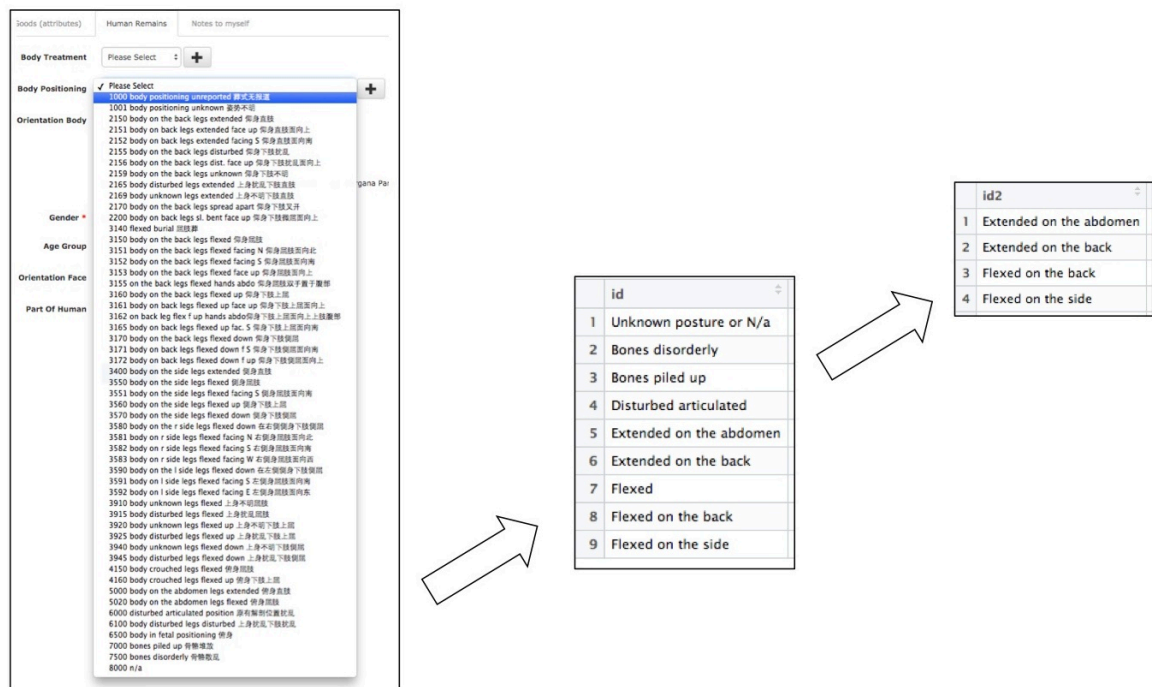


Figure 3.3 – Example of aggregation of variables (1/3)

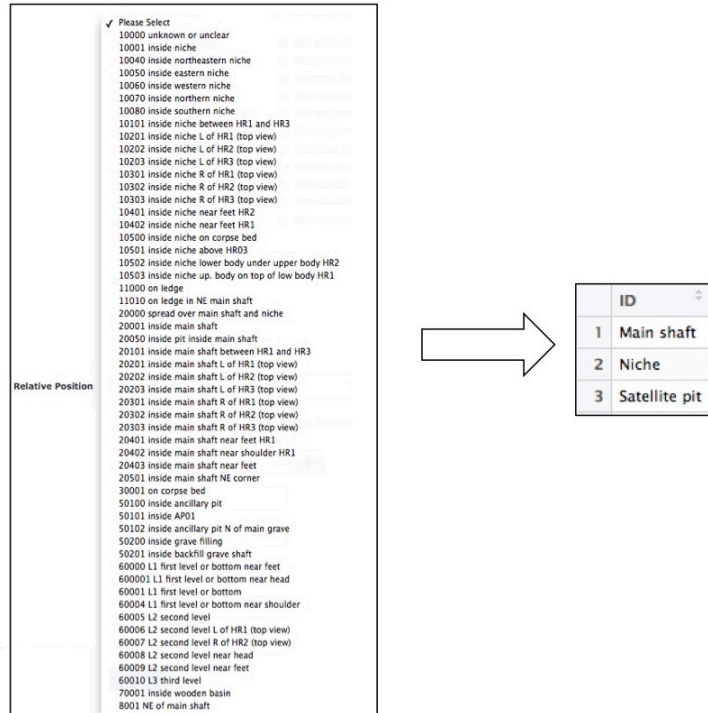


Figure 3.4 – Example of aggregation of variables (2/3)

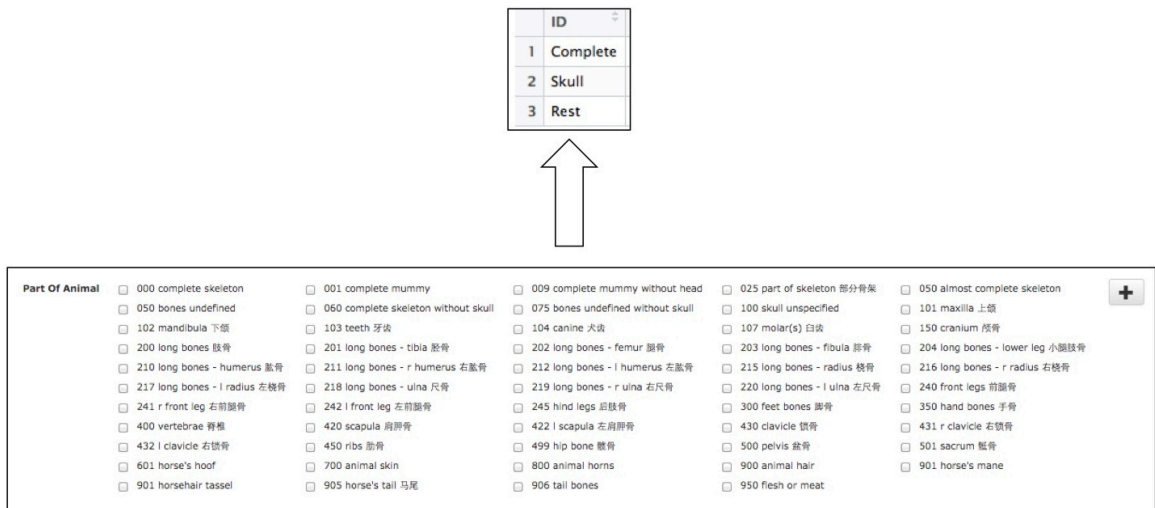


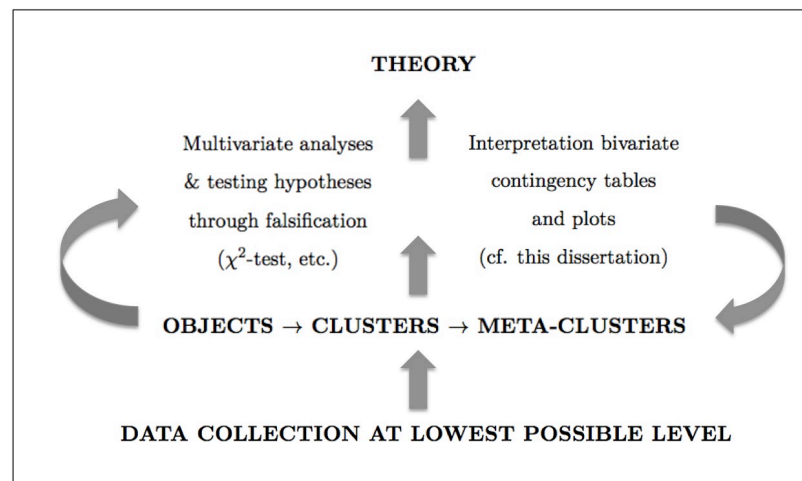
Figure 3.5 – Example of aggregation of variables (3/3)

### 3.5 Analysing and interpreting the data

After data were collected at the lowest possible level, and objects aggregated to clusters and meta-clusters (i.e. research constructs), analyses were carried out using statistical analyses including complex queries.

The analyses in Parts III and IV are limited to the rendition and discussion of contingency tables, which show bivariate frequency distributions of investigated variables, and occasionally more sophisticated plots as in § 13.5. These formed the basis upon which I formulated observations and interpretations. Surely, the database can be more intensively explored from a spatial perspective, in conjunction with multivariate contingency tables, which can be investigated using statistical testing like  $\chi^2$  or other tests suitable for nominal variables. (Fig. 3.6).

The methodology used here allowed a combination of deductive and (true) inductive reasoning: predefined questions could be addressed and new ones could be generated. An example of the latter is the analysis in § 16.4 which raised the question why the practice of burying horse tack suddenly declined in Type C and D graves, as opposed to the growing importance of horse sacrifice demonstrated in Chapt. 15.



**Figure 3.6** – Methodology used for investigation at site and regional level.

Three main research tools were used in the analyses. Apart from the online database designed in mySQL (§ 3.3), R was used for structuring and reshaping the data and for carrying out statistical analyses.<sup>8</sup> Finally, QGIS,<sup>9</sup> an open source Geographic Information System, was additionally used in some analyses for mapping variables as grave type and correcting variables as grave orientation.

<sup>8</sup>R Core Team 2015.

<sup>9</sup>QGIS Development Team 2009.

## 4 Conclusion

The research context set out in Chapt. 1 demonstrated that the emergence of lateral niche grave practices in the Turfan Basin around 200 BCE as questioned in § 1.1 is to be understood in the specific physico-geographical context of the wider Tianshan area and Inner Eurasia, which favoured the development of pastoralist and mobile subsistence strategies (§ 1.2). Isolated as some of these regions like the Turfan Basin may seem, they were firmly linked to each other through mountains, rivers and valleys with abundant pasture. Despite the excellent preservation conditions of Yanghai and the Turfan Basin (§ 1.5), archaeological research in the area faces serious chronological challenges (§ 1.3).

The reconstructed niche grave debate in Chapt. 2 demonstrated the need for sharp definitions to distinguish regional niche grave traditions (§ 2.1). It also showed that culture-historical interpretations favouring migration was the main explicative model for the emergence and distribution of niche grave practices (§ 2.7). Revisions of migration models starting in the nineties with Anthony (23), have barely affected the discussion. Issues such as increasing mobility, the emergence of horse riding, pastoralism and nomadism (§ 1.4) are core to the renewed migration debate, especially in Inner Eurasian archaeology, and relevant to understand the nature of interaction and channels of cultural transmission including burial practices.

Against the background of these discussions, I opted to investigate mortuary variability to understand change in burial practice and the identity of niche grave occupants from Yanghai and the Turfan Basin, according to the methodology described in Chapt. 3, and applied in Parts III and IV. The bottom-up approach to data analysis enabled deconstructing and reaggregating variables of mortuary behaviour in any desired fashion (Chapt. 3; 32, Fig. 3.6). This avoided departing from predefined categories and allowed mapping patterns of (dis)continuity from multiple perspectives. It was the basis upon which theories of autochthonous or allochthonous influence (acculturation or migration) were developed (Part V).

## Part II

# Early Niche Grave Practices in Inner Eurasia



# 5 Introduction

Part II addresses the question of the emergence of niche grave practices from a supra-regional perspective. It discusses such traditions in Inner Eurasia prior and contemporary with those in the Turfan Basin (c. 3 000 BCE to 300 CE).

The reasons for zooming out to the level of Inner Eurasia are evident. Firstly, the Turfan Basin and surrounds had clear links with various cultures in Inner Eurasia, as evidenced from the historical and archaeological record. It is therefore inevitable to investigate if and how the broader context of Inner Eurasia played a significant role in the appearance of niche graves in the Turfan Basin.

Secondly, multiple centres of early niche grave practices have been discovered in Inner Eurasia and sparked interest among scholars for almost a century (Chapt. 2).

Thirdly, it has been demonstrated that Inner Eurasia is an appropriate research unit of world history (§ 1.2). This is also reflected in the – sometimes daunting – task some have undertaken to bring together archaeological data of what is almost half a continent.<sup>1</sup>

Fourthly, it is particularly interesting to study the emergence and distribution of niche graves against a background of large-scale migrations of mobile pastoralists throughout the Bronze Age, Early Iron Age and early historical times. However, as discussed in § 2.7 and § 1.4, the role of mobility and pastoralism in relation to interaction, cultural change and migration is currently being reassessed.

To make this vast geographical area workable as a unit of analysis and to facilitate comparative research, certain limitations were set. Although the niche grave practices discussed include those preceding and contemporary with the Turfan Basin ones, the focus lies on the latter. The Early Iron Age and early historical ones are more relevant in investigating possible links with the Turfan Basin where such grave forms appear around 200 BCE. Nevertheless, Neolithic and Bronze Age traditions could not be ignored, because they provide crucial information on the origins and development of regional and supra-regional sequences.

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<sup>1</sup>Parzinger 2011 [2006]; Christian 2006 [1998]; Moshkova 1992; Dani et al. 1992; Dani et al. 1996 [1994].

Part II encompasses the Pontic Caspian region (Chapt. 6); the Syr Darya and the Amu Darya basins (Chapt. 7); the Tianshan Mountains and adjacent drainage basins (except the Turfan Basin, which is addressed in Parts III and IV) (Chapt. 8); and finally the Hexi Corridor, upper and middle Huang He and Liaohe basins, and South Siberia (Chapt. 9). This division into four areas largely follows the logic of their drainage systems, except for the last one.

Each chapter starts with a geographical and chronological context, including archaeological and – where relevant – historical information to contextualise the niche grave practices. This is followed by a basic description of different niche grave traditions per subregion, including grave architecture and orientation (where possible), treatment of human and animal remains, grave goods, and mode of subsistence. In some cases, like the Shajing culture in the eastern Hexi Corridor (142 ff.) or the Kugai-Karabulak culture in the Fergana Basin (69), I carried out simple calculations of body posture or grave type ratios to better understand possible links with the Turfan Basin.

A ‘broad brush’ comparative approach finally enabled distinguishing different niche grave sequences, understanding their chronological and geographical distribution, and interconnectivity (Chapt. 10).

# 6 The Pontic-Caspian Region

## 6.1 Introduction

The Pontic-Caspian region comprises the area north of the Caspian and Black seas (Map 6.1). It is part of a steppe belt stretching from the northern Pontic in the west to Mongolia in the east.



**Figure 6.1** – The Pontic-Caspian Region

The Don, Dnieper and Danube are major rivers belonging to the Black Sea drainage system. The Crimean peninsula is largely covered by outliers of the Pontic-Caspian steppe and bordered in the southeast with mountains and rocky shores. To the southwest, the Bosphorus connects the Black Sea with the Mediterranean world. The Volga and Ural rivers

belong to the drainage system of the Caspian Sea. In between the Black and Caspian seas lies the Caucasus that forms a border with Outer Eurasia. Next to their rich riparian resources, the great rivers of Eastern Europe acted as key conduits for movement and trade from prehistory onward.<sup>1</sup>

Historically, the Early Iron Age remains of the Pontic Caspian steppe are associated with pastoralist people known as the Cimmerians, Scythians and Sarmatians. The Cimmerians originated from the Caucasus. The so-called Scythian Cultural Complex probably originated in central or Eastern Kazakhstan and south Siberia, as suggested by historical records and archaeological data. From there they possibly migrated to the Pontic steppes. Others deny an eastern origin for the Scythians and advocate local origins in the Pontic steppes, or a polycentric origin.<sup>2</sup> The Scythians in the eastern regions are referred to as ‘Saka’, an ethnonym from ancient Persian records. Diagnostic Scythian features were proposed by Watson in the form of 1) the adoption of iron metallurgy; 2) the use of a short sword or *akinakes*; 3) the use of specific animal motifs; and 4) a pastoral nomadic life and a patriarchal, little centralised social organisation.<sup>3</sup> Three-sided arrows and compound bows are also considered typically Scythian. Bashilov and Yablonsky add to this also bronze cauldrons, deer stones, and complex horse harness that facilitated horse riding.<sup>4</sup>

Cultures sharing Scythic features are distributed from the Danube in the west to the Tianshan Mountains in the east. Concurrently, they influenced Turkic and Mongolian people further east. Artistic patterns were thus transmitted to the Altai and the Ordos regions. While the Scythians practiced predominantly mobile pastoralism, some groups were more sedentary and mixed with the local farming populations.<sup>5</sup> The late Scythian economy relied on farming and cattle breeding. They also held sheep, goats, horses, pigs, donkeys, chicken, and geese.<sup>6</sup>

It is currently assumed that the Scythians or Scythian influence arrived in the northern Black Sea area and the northern Caucasus around 800 BCE.<sup>7</sup> By 400 BCE they suffered increasing pressure and influence from the east and notably the Sarmatians.<sup>8</sup> The ethnonym ‘Sarmatians’ comes from Greek written resources and refers to a number of Iranian pastoralist tribes from the post-Scythian period in the north Caspian, north Caucasian and north

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<sup>1</sup>Hanks 2014, 1937.

<sup>2</sup>Christian 2006 [1998], 206, 124; see for a discussion on the origins of the Scythians Bashilov et al. 1995, xii–xiii.

<sup>3</sup>Watson 1971, 109, 113.

<sup>4</sup>Bashilov et al. 1995, xii–xiii.

<sup>5</sup>Christian 2006 [1998], 125–128, 134.

<sup>6</sup>Olkhovsky 1995, 79, 80.

<sup>7</sup>Melyukova 1995, 31.

<sup>8</sup>Olkhovsky 1995, 73.

Pontic steppes.<sup>9</sup> The predecessors of the latter, the Sauromatians, are thought to have been influenced by the Massagetae from the Syr Darya Delta.<sup>10</sup>

Although ethnic attribution is not an objective of this dissertation, the chronology applied to ‘Sarmatian’ archaeological remains is widely accepted and has been used in this chapter, i.e. the Sauromatian (6<sup>th</sup>–4<sup>th</sup> c. BCE); Early Sarmatian (4<sup>th</sup>–2<sup>nd</sup> c. BCE); Middle Sarmatian (2<sup>nd</sup> c. BCE–2<sup>nd</sup> c. CE) and Late Sarmatian (2<sup>nd</sup>–4<sup>th</sup> c. CE) Period.<sup>11</sup> On the Crimean peninsula, the new Scythian kingdom still thrived during ‘the Late Scythian Period’ from c. 2<sup>nd</sup> c. BCE–3<sup>rd</sup> c. CE. Nevertheless, so-called Sarmatian influence also penetrated in the peninsula during that period.

During the Sarmatian period, the Black Sea region was linked to the Greek and Roman world to the west and to Central Asia via the Caspian Sea. There was exchange with Transcaucasia and the Arsacid empire of the Parthians whose borders reached the Amu Darya, and further east with neighbouring Bactria (cf. Tillya-tepe) and the Han empire. Such exchanges were motivated by the Han emperor Han Wudi (141–87 BCE) and the Parthian emperor Mithradates II (122–87 BCE).<sup>12</sup> In her macro-analysis of long-distance exchange processes, Ursula Brosseder demonstrated that the period between c. 200 BCE to 200 CE was one of increased exchange along the Eurasian Steppe Highway, when the Roman and Han empires were at the height of their power, with in between the Xiongnu and Sarmatians as most important neighbours.<sup>13</sup> Simultaneously, Scythian power faded in the North Black Sea region and under pressure from Sarmatian tribes the Scythians retreated to Crimea and the lower Dnieper basin.<sup>14</sup>

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<sup>9</sup>See for further literature Olbrycht 2013, 74, 78, 84; Christian 2006 [1998], 136; Moshkova 1995, 88; for a chronological overview showing the main historical events of the various Sarmatian tribes, see Sulimirski 1970.

<sup>10</sup>Sulimirski 1970, 83.

<sup>11</sup>Hanks 2002, 186; after Moshkova 1995, 92.

<sup>12</sup>Olbrycht 2013, 72.

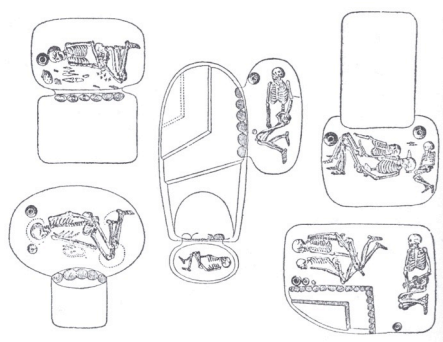
<sup>13</sup>Brosseder 2013, 77; Brosseder 2015.

<sup>14</sup>Olkhovsky 1995, 72.

## 6.2 The Pontic Caspian Region (c. 2800–2000 BCE)

The Catacomb culture was first identified by Vasilii Alekseevich Gorodtsov in 1901–1903 in the Seversky Donets area (Map 6.1). He suggested a tripartite division of the Bronze Age of the Northern Pontic area into a Pit Grave (Yamnaya), Catacomb (Katakamnaya) and Timber Grave culture (Srubnaya).<sup>15</sup> Research has shown that there is considerable continuity and overlap between the Pit Grave and Catacomb cultures.<sup>16</sup> The latter has been divided into various regional traditions.<sup>17</sup>

Its earliest phase dates back to c. 2700 and appeared first between the Don and Donets and subsequently in the Volga-Don interfluvial and foothills of the northern Caucasus, while in its more developed form after c. 2500 BCE, the Catacomb culture expanded westwards into the steppes across the Dnepr.<sup>18</sup> Katarzyna Ślusarska dated the ‘catacomb entity’ between c. 2800 and 2100/1900 BCE and situated its rise and demise in the Northern Donets and Don river basins.<sup>19</sup>



**Figure 6.2** – Graves of the Catacomb culture (Mongait 1961, Fig. 12)

‘Catacombs’ exist of an often stepped entry shaft or *dromos* leading to one or two laterally and/or perpendicularly positioned niches. (Fig. 6.2). The entrance to the niche is blocked with stone slabs or wood. While the layout varies considerably, both entry shaft and niche are modest in size and are oval, circular or rectangular.

The niche graves are usually sunk into barrow mounds at their foot or along the outer edges. They thus form a circle or an arch. Some mounds were in use over long periods and grew into large barrows with a complex stratigraphy. Catacombs existed sometimes side-by-side with older shaft graves in the mound (Fig. 6.3).<sup>20</sup>

Flexed burials on the side prevail, extended and flexed postures on the back occur too and reflect regional variability. Single burials prevail, followed by double and multiple burials. There is considerable variation in body orientation. Grave goods include ceramic vessels with herringbone and combed decorations, stone, copper, bronze and silver objects

<sup>15</sup>Gorodtsov 1905; Gorodtsov 1907.

<sup>16</sup>Kaiser 2012, 33.

<sup>17</sup>Gerling 2015, 19–25; for a discussion of the chronology, distribution, regional variants, variability in burial traditions and subsistence practices of the Catacomb culture, see Ślusarska 2006.

<sup>18</sup>Kaiser 2003, 65–85; Kaiser 2007; Chernykh 2008.

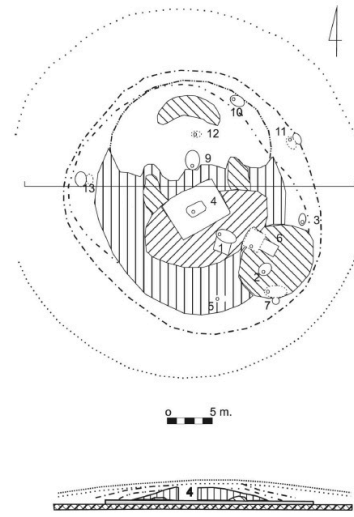
<sup>19</sup>Ślusarska 2006, 63.

<sup>20</sup>Ślusarska 2006, 49–54, 65.

including axes, maces, arrows, daggers, ornaments and occasionally clay-modelled skulls. Two or four wheeled vehicles with solid wheels occur in the richer graves. Artificial skull deformation was common in the Seversky Donets area.<sup>21</sup>

Animal remains including heads and hooves of cattle, sheep and goat were common. These three animal types were present in 20% of the graves in the North Pontic sample group studied by Ślusarska. The very low incidence of horse remains, she stated, challenges the view of Indo-European specialists that Catacomb users attributed special significance to this animal, since it made them more mobile and thus more powerful.<sup>22</sup>

The Catacomb people relied heavily on pastoralism, but practiced crop farming too. In mixed economies, their mobility was probably limited to seasonal transhumance. As Pustovalov demonstrated, the various groups belonging to the Catacomb culture may have practiced different modes of subsistence instead of just one.<sup>23</sup>



**Figure 6.3** – Plan and section drawing of Tumulus no. 6, Krasnaya Zarya, Luhansk District. (Ślusarska 2006, 50, Fig. 5)

### 6.3 The Volga-Don interfluvial (c. 800–600 BCE)

The earliest Early Iron Age niche graves in the Pontic-Caspian area appeared in the Volga-Don interfluvial during the pre-Sauromation period, at about 8<sup>th</sup>–7<sup>th</sup> c. BCE. Rare examples include a lateral niche grave from Berezhnovka II on the left Volga bank, with a burial in flexed posture on the left side. Both body posture and orientation show continuity with local practices of the Bronze Age. Another lateral niche grave from the lower Don at Koisug features a large entry shaft and extended burial oriented towards the west. These innovative grave forms appeared in association with new grave goods including bridles, arrowheads, knives, daggers, and whetstones (Fig. 6.4).<sup>24</sup>

<sup>21</sup>Mallory 1997.

<sup>22</sup>Ślusarska 2006, 150.

<sup>23</sup>Pustovalov 1994, 125.

<sup>24</sup>Dvornichenko 1995, 100–104.



**Figure 6.4** – LEFT: niche graves from Berezhnovka II and Koisug. RIGHT: grave assemblage. Pre-sauromatian period, Volga-Don interfluvial (After Dvornichenko 1995, 102, Fig. 1.c and 2; 103, Fig. 3 and 4.b.; 104, Fig. 6)

Pre-Sauromatian pottery traditions including local ceramic production, and black burnished pottery from the North Caucasus or the North Black Sea area, survive into the Sauromatian period.<sup>25</sup> Drinking cups with vertical upturned handles, jars with hooked handles and triangular patterns are very common during the Scythian period in the North Caucasus, Southeastern Europa and Crimea.<sup>26</sup>

## 6.4 The southern Ural steppes (c. 400 BCE–400 CE)

Graves with lateral niches, graves with niches positioned in the short side of the entry pit, and graves with side ledges, all with southward oriented burials, suddenly appeared in the southern Ural steppes during the Sauromatian period, in the late 5<sup>th</sup> and early 4<sup>th</sup> centuries BCE.<sup>27</sup> This mix of new grave types gained more ground during the Early Sarmatian culture or Prokhorovka culture (4<sup>th</sup>–2<sup>nd</sup> c. BCE), distributed on the banks of the Ilek and Or rivers (Fig. 6.1). This culture is considered partly a continuation of the local Sauromatian culture, and partly resulting from an influx of populations from the forest-steppe trans-Urals, northwestern Kazakhstan, and possibly Aral Sea region.<sup>28</sup>

Two main groups were distinguished in the Prokhorovka culture, roughly corresponding to the distribution of two earlier groups of the Sauromatian culture: the Saratov group on the lower Volga, and the Orenburg group in the southern Ural steppes and the area further south. In the former, mounds often include large numbers of secondary burials and niches

<sup>25</sup>Dvornichenko 1995, 102 and 103, Fig. 3.

<sup>26</sup>Petrenko 1995; Melyukova 1995; Olkhovsky 1995.

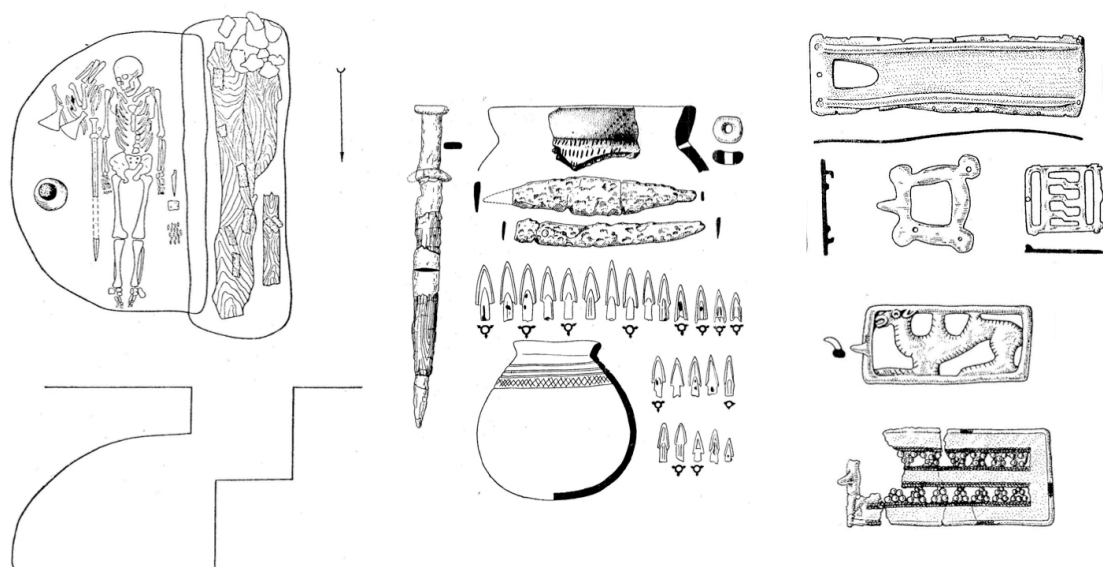
<sup>27</sup>Dvornichenko 1995, 105–106.

<sup>28</sup>Smirnov 1964; Smirnov 1975; Moshkova 1963; Moshkova 1974.



are mostly situated at the short side of the shaft. In the Orenburg group, lateral niche graves prevail, and are often covered with small cairns or flat stones.<sup>29</sup>

The niches in graves of the Prokhorovka culture are sealed with wooden planks, round wood or mats. The dead lie on corpse beds in extended posture on the back oriented towards the south (Fig. 6.5). Single burials prevail but occasionally multiple burials with 3 to 8 individuals occur too. Knives, whetstones, (long) swords, daggers, quivers, arrows, horse bits are associated with men, while knives, beads, mirrors, jewellery, clay spindle whorls, awls and needles from stone, bone, bronze or iron, and occasionally harness rings and arrow points, accompany females. Sheep bones and portable fire altars are common, and there are bronze cauldrons, hand-molded and wheel-thrown pottery, and quiver hooks used to attach the quiver to the belt.<sup>30</sup>



**Figure 6.5** – Assemblage Prokhorovka culture. LEFT: lateral niche grave; CENTRE: objects from a mounded grave of the 4<sup>th</sup> c. BCE at Novyi Kumak near Orsk; RIGHT: buckles of the 3<sup>rd</sup> and 2<sup>nd</sup> c. BCE (After Smirnov 1950 and Moshkova 1963 in Sulimirski 1970, 55, Fig. 29; 86, Fig. 30 and 88, Fig. 31).

The territory of the Middle Sarmatian culture (2<sup>nd</sup> c. BCE–2<sup>nd</sup> c. CE) expanded from the southern Ural steppes to the Danube River. Niche grave practices continued next to other grave types, at a time heavily influenced by Persian, Roman and steppe traditions. Although shaft graves, ledged graves and lateral niche graves are still common, graves with longitudinal or perpendicular niches dug out from the short wall of the entry pit seemed to have disappeared. The number of lateral niche graves sharply decrease from the 1<sup>st</sup> c. CE onward. Niche graves and narrow shaft graves still exist during the Late Sarmatian

<sup>29</sup>Sulimirski 1970, 84–86.

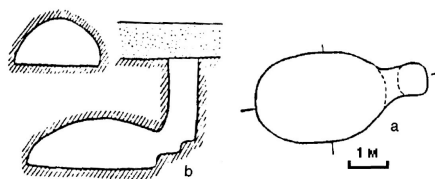
<sup>30</sup>Barbarunova 1995, 123–131; quiver hook, see 126, Fig. 18.

period (2<sup>nd</sup> c.–4<sup>th</sup> c. CE), the former being more popular east of the Don than in the North Black Sea area. Their construction differs from previous periods, with deeper and narrower corridor, sometimes with a ledge spared out of the floor, resulting in a sunken niche. Extended burials dominate but flexed burials occur too in niche graves. Graves with niches dug out from the short sides, virtually absent during the middle period, increase dramatically during the Late Sarmatian Period, especially in the Don basin.<sup>31</sup> Double lateral niche graves are known from the Late Sarmatian period onward.<sup>32</sup>

To fully appreciate the impact of the Prokhorovka culture and the dispersion of niche graves, it is interesting to follow the migrations of Sarmatian groups after they had first penetrated into the lower Volga during the 4<sup>th</sup> c. BCE. Zoya A. Barbarunova argued that, during the 4<sup>th</sup>–3<sup>rd</sup> and the 3<sup>rd</sup>–2<sup>nd</sup> centuries BCE, massive nomadic migrations westward from the southern Ural steppes reached the lower Don River and Kuban River regions (Fig. 6.1). Other migrations eastward to the mid-Ishim region and southward to the Zaravshan Basin resulted in a near-abandonment of the southern Ural steppes by the 1<sup>st</sup> century BCE.<sup>33</sup>

## 6.5 The Crimean peninsula (c. 400 BCE–300 CE)

In the 5<sup>th</sup> c. BCE, isolated examples of longitudinal niche graves existed next to the more common Scythian period slab-stone cists and simple shaft graves. The 4<sup>th</sup> c. BCE saw the first concentrations of longitudinal niche graves, but these were limited to northern Crimea and the Sivash area, e.g. at the Berezhnoe site (Fig. 6.6).<sup>34</sup>



**Figure 6.6** – Longitudinal niche grave, Berezhnoe, Sivash (After Olkhovsky 1995, 69, Fig. 10).

Valery S. Olkhovsky's study of Scythian culture in Crimea shows that the earliest *lateral* niche graves in Crimea are found side-by-side with other grave types at cemeteries of the late Scythian period (2<sup>nd</sup> c. BCE–3<sup>rd</sup> c. CE). Lateral niche graves (Fig. 6.7, left) are found

<sup>31</sup>Moshkova 1995, 137–164.

<sup>32</sup>Sulimirski 1970, 159, Fig. 59.

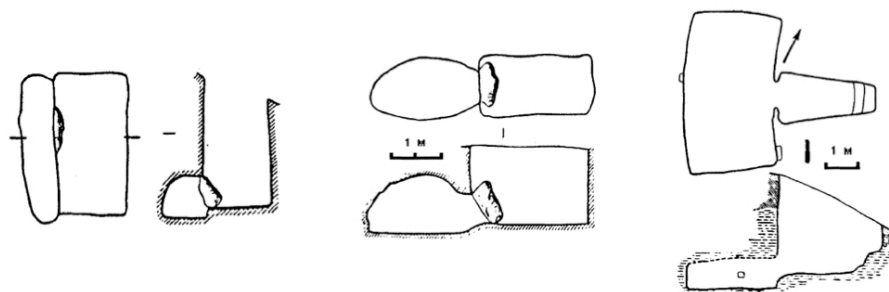
<sup>33</sup>Barbarunova 1995, 121–122.

<sup>34</sup>Olkhovsky 1995, 63–82.

next to shaft graves, cist burials and longitudinal niche graves (Fig. 6.7, middle), and finally perpendicular niche graves (Fig. 6.7, right). Inhumation was common, though cremation in amphorae occasionally occurred too. Grave orientation was variable, and from the 1<sup>st</sup> century BCE the predominant latitudinal orientation coexisted with the meridional. Extended burials on the back prevailed. Multiple burials from two to several dozens individuals were common and graves were frequently re-opened to add new individuals.

The variability in burial practices during the late Scythian period in Crimea resulted from mixed influences, most strongly from the local Kizil-Kobinian, Greek, next to Sarmatian and Scythian traditions. The high presence of niche graves, graves with side-ledges, the meridional orientation, crossed legs, high frequency of mirror pendants, arms and tamga are seen as typical Sarmatian.<sup>35</sup> Pottery and architecture related more to Hellenist and early Roman styles, while weapons, horse gear and ornaments were more diagnostic of Scythian culture with a heavy influence of middle and late Sarmatian culture.<sup>36</sup>

The point I want to make here, is that three standardised niche grave types made their appearance on the Crimean peninsula as influence from the southern Ural steppes and the lower Volga basin. Depending on the positioning of the niche (and the body), I refer to them as lateral, longitudinal or perpendicular niche graves (§ 2.1).



**Figure 6.7** – Lateral, longitudinal and perpendicular niche graves, late Scythian Period, Neapolis near Kermenchik, Crimea (After Olkhovsky 1995, 77 Figs. 33, 32 and 44).

Examples of these three niche grave types are found near the late Scythian town of Kermenchik in Simferopol in the foothills of central Crimea (Fig. 6.7). This walled town was settled in the late 4<sup>th</sup> to early 3<sup>rd</sup> c. BCE and has been identified with Strabo's Scythian fort 'Neapolis'. A stone and adobe mausoleum adjacent to the town wall is dated to the end of the 2<sup>nd</sup> century BCE to the 1<sup>st</sup>–2<sup>nd</sup> c. CE. Not far from the town, more than 200 burial sites cut in rock were excavated, existing next to shaft graves, lateral, longitudinal and perpendicular niche graves (Fig. 6.7). A similar mix of niche graves can be found at Ust'-Al'ma, Alma-Kermen and Chernorechenskii in northwestern and Belyaus in southwestern

<sup>35</sup>Olkhovsky 1995, 79–81.

<sup>36</sup>Dashevskaya 1989; in Parzinger 2011 [2006], 831.

Crimea. In Skalistoye III and Belyaus, lateral niche graves are the dominant grave type. Ust'-Al'ma also has one double lateral niche grave.<sup>37</sup>

Ust'-Al'ma in southwest Crimea illustrates the distribution of these three niche grave types (Fig. 6.1 no. 1). In the late 4<sup>th</sup> c. BCE, this site was established by Greek colonists, and between the late 2<sup>nd</sup> BCE–mid 3<sup>rd</sup> c. CE, it functioned as a Scythian fortified town. It was a political and administrative centre in Crimea.<sup>38</sup> In the cemetery east of town, several hundred graves were excavated between 1968 and 2011. Of the 229 graves (100%) excavated between 1968–1984, 19 (8.2%) are graves with longitudinal or perpendicular niches, 25 (11%) are lateral niche graves, 129 (56%) rectangular shaft graves, 10 (4%) cists, 14 (6%) cenotaphs, 14 (6%) horse burials, and 18 (8%) are unknown.<sup>39</sup> Another 600 were excavated in the last decennia.<sup>40</sup>

Three burial phases are distinguished. During the Early Phase (1<sup>st</sup> c. BCE–first half of 1<sup>st</sup> c. CE), longitudinal and perpendicular niche graves prevailed, featuring a high step and a slabstone separating the niche from the entry shaft, which was backfilled with stone. Single and multiple burials, extended posture on the back with the head pointing eastward, southeast or northeast, were common. Sometimes wooden coffins were used, often in various layers on top of each other. From the Middle Phase (around the Common Era) onward, lateral niche graves appear side-by-side with rectangular shaft graves. Part of the graves belong to the Late Phase (second half 1<sup>st</sup> c.–first half 3<sup>rd</sup> c. CE).

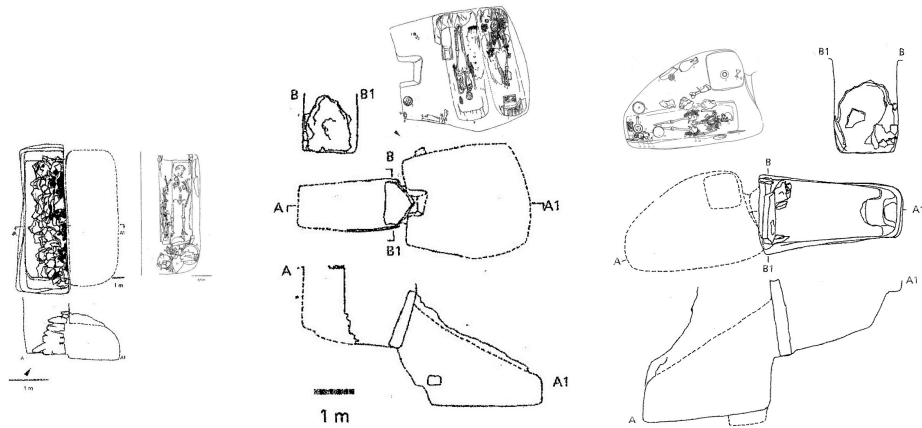
A group of niche graves dated to the second half of the 1<sup>st</sup> and the first half of the 2<sup>nd</sup> c. CE, are attributed to the Sarmatian elite. These graves are not mounded, which is atypical for Crimea during the Scythian period. They are accompanied by horse burials and have hollowed out tree trunks as burial devices. All these features, including the niche graves themselves, have been attributed to influence from the Sarmatians. A few examples will be discussed, as they throw light on the network in which niche grave occupants were embedded.

<sup>37</sup>Olkhovsky 1995, 63–81. For the double niche grave, see 78, Fig. 36.

<sup>38</sup>Vysotskaya 1994, 7–17.

<sup>39</sup>Vysotskaya 1994, 97–192.

<sup>40</sup>For an overview, see Puzdrowskij 2013, 290–323.



**Figure 6.8** – Grave no. 700 (LEFT); no. 620 (CENTRE); no. 720 (RIGHT), Ust’ Al’ma, Crimea (2<sup>nd</sup> c. CE) (Adapted from Die Krim 2013, 297 Fig. 5; 295, Fig. 4; and 298, Fig. 6).

Grave no. 700 is the largest lateral niche grave, dated to the early 2<sup>nd</sup> c. CE (Fig. 6.8). The niche holds a wooden coffin with one individual in extended posture and north-western body orientation. Grave goods include iron knives and daggers, small bronze bells, (un)painted wooden sticks, golden thread, a bronze ring with hexaform rim surmounted by knobs, small silver tubes, silver belt tongues, belt buckles with hinged tongues, bronze rings, bronze amulets, wooden vessels with(out) sculptured figures, a bronze handled dish (*patera*), an iron candelabra-like object, amphora, wooden stands, wooden plates with animal bones and horse gear fragments.

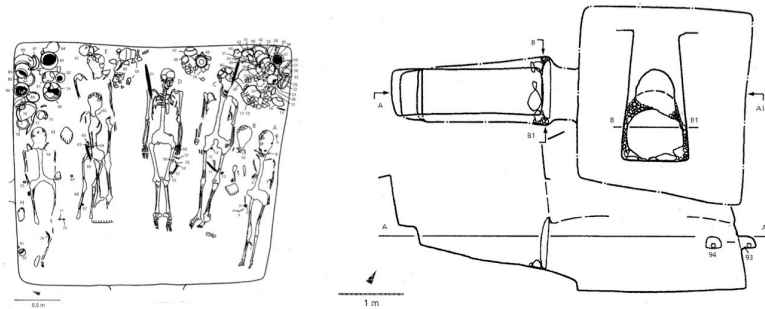
Graves nos. 620 and 720 feature a perpendicular resp. longitudinal niche (Fig. 6.8). Grave goods differ from grave no. 700, including Chinese lacquer boxes, Roman glass and bronze ware, metal objects of Sarmatian geometric design, carnelian beads, gold foil facial coverings, gold fittings, gold inlay jewellery, seal rings, metal amulets, a dagger, carnelian and other beads, a bronze mirror, a hematite nodule, Sarmatian grey clay ware with white-yellow slip and rippled surface. Margarete Prüch claims the design and rectangular form of the lacquer boxes show strong similarities with lacquer traditions of the 1<sup>st</sup> c. BCE–2<sup>nd</sup> c. CE in the Guangling Kingdom of the Han empire.<sup>41</sup>

The chronology of Ust’-Al’ma suggests lateral niche graves were introduced in Crimea around the Common Era, following the entry of perpendicular and longitudinal niche graves, after which they existed side-by-side. From the descriptions of the elite graves dated between the second half of the 1<sup>st</sup> and the first half of the 2<sup>nd</sup> c. CE, it was observed that lateral niche graves focused on metal and typical Sarmatian objects, while perpendicular and longitudinal niche graves also held prestige goods from the Han and Roman empires next to

<sup>41</sup>Prüch 2013, 151.

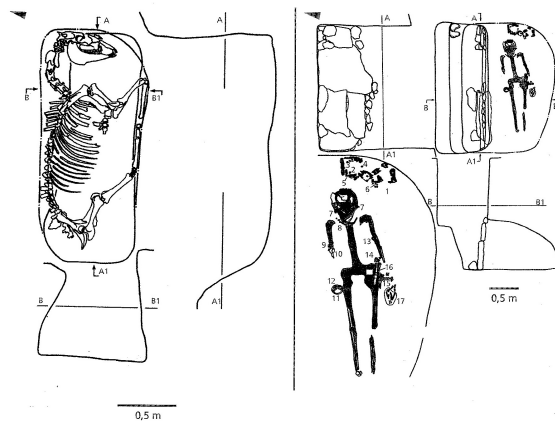
Sarmatian objects. This suggests that the occupants of lateral niche graves engaged in different networks than those of perpendicular and longitudinal niche graves, an idea requiring further investigation.

The idea of a differential development of these three niche grave types is supported by other Crimean sites, including Levadki, Družnoe and Neisatz, all located near Simferopol. These sites show a similar mix of niche grave types next to shaft graves, and also lack a mound.<sup>42</sup>



**Figure 6.9** – Grave no. 66, Družnoe, Crimea (Die Krim 2013, 335 Fig. 7).

Another difference between lateral and perpendicular niche graves is the former favoured single and the latter multiple burial. Perpendicular niches resembled small vaulted rooms, a design better suited for multiple depositions (Fig. 6.9). The preference for single versus multiple burial may reflect differences in social organisation or status. The burial of whole horses in rectangular pits, sometimes accompanied by psalia, was also common when niche graves emerged in Crimea (Fig. 6.10).



**Figure 6.10** – LEFT: Horse burial no. 13; RIGHT: lateral niche grave no. 24, Družnoe, Crimea (Die Krim 2013, 334 Figs. 4 and 5).

In conclusion, around the Common Era, lateral niche graves appeared on the Crimean peninsula, right after perpendicular and longitudinal niche graves. These three niche grave

<sup>42</sup>For a description of these sites, see Muld 2013, 324–331; Khrapunov 2013b, 340–351; and Khrapunov 2013a, 332–339.

practices did not feature mounds and were characterised by an extended body posture. The differences in grave architecture, grave goods, and preference for single or multiple burial practices, suggest the different niche grave practices represented groups with different identities, ideologies or interests, though this requires further investigation.

## 6.6 Conclusion

The overview in Chapt. 6 demonstrated that the Pontic-Caspian steppe was an important centre of niche grave practices. One early Bronze Age tradition could be distinguished, next to three Early Iron Age traditions which lasted into historical times and existed side-by-side or at least overlapped. The gap of more than a millennium between both periods makes it currently impossible to claim continuity.

The earliest niche graves appear in the context of the Catacomb cultures at c. 2800 BCE (§ 6.2). They show little standardisation though mostly feature a stepped entry pit leading to a small niche. One or more graves are often embedded into a mound. Flexed burials on the side prevail though there is considerable regional variation in body posture and orientation. The grave occupants relied on cattle and sheep herding, occasionally held horses, and sometimes practiced limited crop farming.

The late Early Iron Age saw the emergence of three niche grave traditions, featuring lateral, longitudinal respectively perpendicular niches. The earliest examples appear in the pre-Sauromatian period in the Volga-Don Interfluvial (8<sup>th</sup>–7<sup>th</sup> c. BCE, § 6.3), and subsequently in the Sauromatian period in the southern Ural steppes (late 5<sup>th</sup>–early 4<sup>th</sup> c. BCE, § 6.4) and in the middle Scythian period (5<sup>th</sup>–4<sup>th</sup> c. BCE) in northern Crimea and the Sivash area (§ 6.5). Occurrences are rare and their forms not standardised. This corresponds with earlier observations that catacombs and *podboi* are known from Scythians and Sauromatians, although their share is limited.<sup>43</sup>

Niche grave practices develop further from the Early Sarmatian period or 4<sup>th</sup> c. BCE onward, as evidenced from the Prokhorovka culture in the southern Ural steppes. Two different traditions take form, the Saratov group on the lower Volga with niches dug out from the short side of the entry pit, and the Orenburg group on the banks of the Or and Ilek rivers in the southern Ural steppes where lateral niches are more common. Lateral niche graves become increasingly popular, especially in the southern Ural during the Middle Sarmatian period, notably from the 2<sup>nd</sup> c. BCE onward, but then quickly loose ground

<sup>43</sup>Smirnov 1964, 79 ff. in Litvinsky 1986, 32.

vis-à-vis perpendicular niche graves after the 1<sup>st</sup> c. CE. Both types continue to exist during the Late Sarmatian period (2<sup>nd</sup> c.–4<sup>th</sup> c. CE), but perpendicular niche graves with multiple burials become ever more popular.

Under influence of Middle Sarmatian burial traditions in the southern Ural, lateral niche grave practices start flourishing in Crimea in the late Scythian period around the Common Era. This is best illustrated by the sites of Kermenchik, Ust'-Al'ma and Levadki at the foothills of the southeastern Crimean mountains.

Further noteworthy is the differential development of different niche grave types. Lateral niche grave practices are particularly numerous and influential in the southern Ural and Sarmatian territory between the 2<sup>nd</sup> c. BCE and 1<sup>st</sup> c. CE, and from the Common Era onward they also play a significant role in Crimea. Though more evidence is needed, it appears that occupants of different niche grave types engaged in different networks. At Ust'Alma, grave goods in lateral niche graves highlighted metallurgical skills, while lacquer and glass in the longitudinal and perpendicular niche graves suggested more involvement in the exchange of prestige goods from the Roman and Han empires.

Differences between lateral niche graves and perpendicular niche graves are also illustrated by the former preferring single burial, and the latter multiple burial. Extended body posture was not an innovation which co-occurred with the emergence of niche graves, but was already common in the Pontic-Caspian region during the Scythian period. Next to the three different niche grave types, other innovations seen in the Sarmatian period are a southward body orientation and whole horse burial. The increasing importance of horse sacrifice, the common presence of (other) animal bones accompanied by iron knives – a basic component in the pastoralist toolkit – along with daggers, swords, belt buckles, and horse gear all emphasise a mobile pastoralist lifestyle and a warrior identity.

To conclude, the developments in the southern Ural steppes between c. 200 BCE and 100 CE, are relevant because of their synchronism with lateral niche grave practices in the Turfan Basin. This is a time of increased interchange across Inner Eurasia, in which the Romans, the Sarmatians, the Parthians, the Xiongnu and the Han among others figure as powerful agents according to historical sources. Lateral niche grave practices spread through migration or otherwise from the southern Ural steppes – sometimes in combination with the elsewhere originating perpendicular and longitudinal niche graves – westward into the Don and Kuban basins and the Crimean peninsula, eastwards into the mid-Ishim region, and southeastward into the Zaravshan basin between the 4<sup>th</sup> and the 1<sup>st</sup>/2<sup>nd</sup> c. BCE. The eastward spread is a thread taken up further in Chapt. 7.



# 7 The Syr Darya and Amu Darya basins

## 7.1 Introduction

Central Asia is largely dependent on two rivers that cut it from East to West: the Amu Darya (Oxus) and the Syr Darya (Jaxartes) (Fig. 7.1). The former rises in the Pamirs and the latter in the Tianshan, but both flow into the Aral Sea. A continental climate prevails and the geography exists largely of steppes, semi-deserts and deserts.

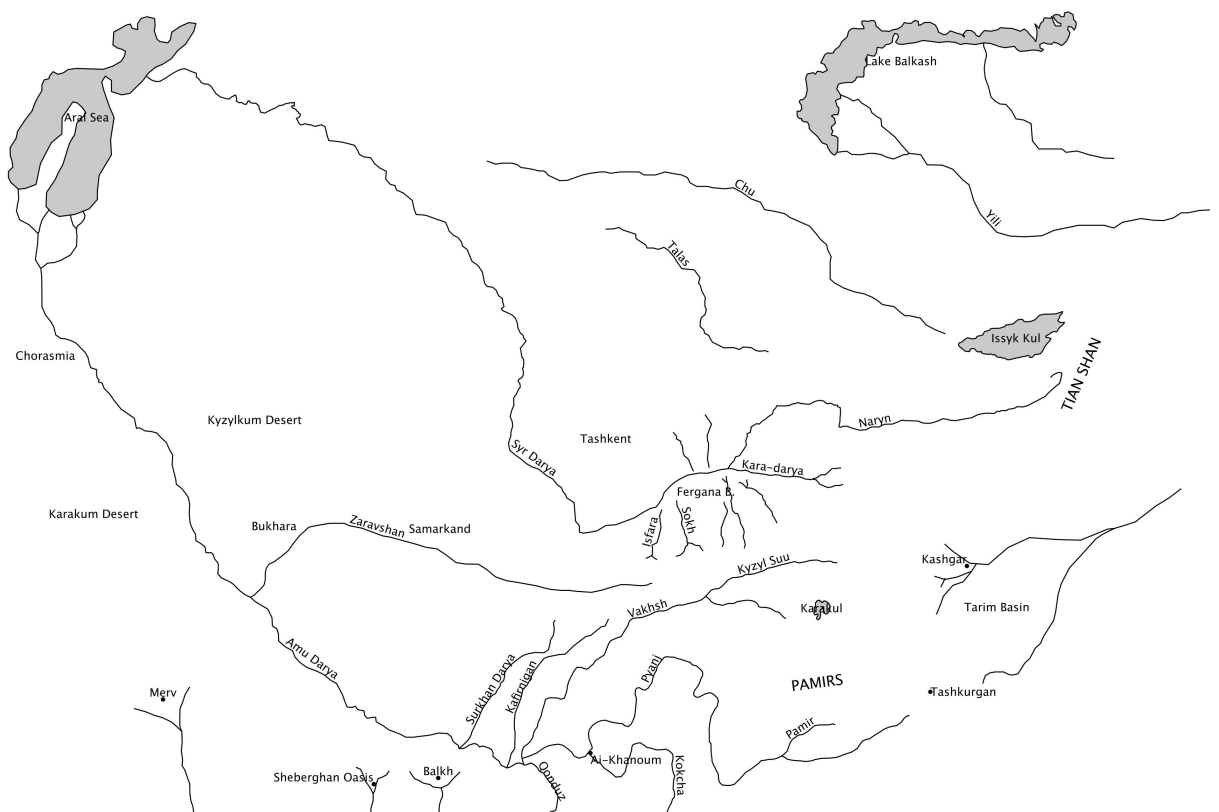


Figure 7.1 – The Syr Darya and Amu Darya basins.

Most niche grave practices here were discovered along the tributaries of the upper and middle Syr Darya and the Amu Darya basins. The Fergana Basin is one of the focal points in this chapter. This valley surrounded by mountains connects the two main river basins and its many passes provide access in all directions with the outside world. The main passes across the Fergana range lead to the Central Tianshan range and further on to Semirechye. Westwards there is access to the Tarim Basin, though the Suez pass to Kashgar is hard and seldom used. From Kokand in the southwest of the Fergana Valley, one can either cross the mountains to Tashkent, or follow the Kokand Gate westward towards the farming cultures of Sogdiana and Bactria or alternatively towards the pastoralist tribes along the middle Syr Darya.

The area drained by the Naryn and Kara-darya in the east of the Fergana valley is fertile and suitable for crop farming and stock-breeding. Since ancient times, life in the valley clustered along the mountain streams flowing into the valley, rather than along its main river, the Syr Darya. The many mountain valleys surrounding the Fergana Basin, provided abundant pasture. The surrounding mountains slope into the valley floor of which the centre is occupied by the sands of the Karak-kalpak Steppe. The Syr Darya crosses the valley in southwesterly direction coming out in the Hunger steppe and finally flowing into the Aral Sea.

Archaeological and historical research in Inner Eurasia is permeated by migration models (§ 2.7). This is true for the Bronze Age (c. 3000–1000 BCE) and the Early Iron Age (c. 1000–200 BCE). There have been many arduous efforts to map and date the Bronze Age movements of Indo-Iranian speakers of languages of the eastern branch of Proto-Indo-European, which later split into the Iranian and Vedic families.<sup>1</sup> The Andronovo steppe culture and the Bactrian Margiana desert oases archaeological complexes (BMAC) often feature in these narratives. As David Christian puts it: *The migratory wave of the late fourth millennium coincides with the beginning of the Bronze Age... The most important features of the Inner Eurasian 'Bronze Age' were: the development of pastoralist lifeways and their expansion to the central and eastern steppes; the emergence of flourishing towns and cities in the oases of southern central Asia; and the evolution of durable relations of exchange and symbiosis between these very different worlds.*<sup>2</sup>

For the Early Iron Age or 'Scythic' Era, migration models are fed by a large body of historical accounts. These provide a distorted and dichotomous picture of farmers/nomads,

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<sup>1</sup>For a critical discussion and bibliographical references on this subject, see Lamberg-Karlovsky 2002.

<sup>2</sup>Christian 2006 [1998], 99.

centre/periphery, civilised/barbarian, while the reality is much more nuanced and complex (§ 1.4). In this context we encounter the Sai/Saka, Massagaetae, Kangju, Yuezhi, and other pastoralist tribes, who competed with each other or formed alliances and who lived in close symbiosis with the more sedentary oasis people of Chorasmia, Sogdiana, Bactria, Fergana and Chach. The latter were alternately ruled or influenced by the Achaemenid, the Seleucids following Alexander conquests, the Parthians and local rulers. Slightly later, pastoralist tribes such as the Sarmatian or related people, the Wusun, Hunnic tribes including the Xiongnu, but also descendants of the Saka, appeared on the scene moving between the Han, the Kushan, the Parthian and the Roman worlds.<sup>3</sup>

Burial mounds in the Syr Darya and Amu Darya basins are associated with the presence of pastoralist groups, and cover shaft graves, latitudinal, longitudinal and perpendicular niche graves. Pottery in these graves are generally associated with the oasis cultures, while weapons, horse gear and jewellery are considered characteristic of mounted nomads.<sup>4</sup>

It is generally assumed that migrations of nomads began in the 2<sup>nd</sup> c. BCE. How powerful confederations of pastoralist tribes could be in this area, is illustrated by the flourishing city Ai-Khanoum of the Greco-Bactrian kingdom on the upper Amu Darya, which was subdued by pastoralists from the north. Historically, the latter are often associated with the Saka and subsequently the Yuezhi who arguably established the Kushan empire in the 1<sup>st</sup> c. CE. Other lavish graves attributed to pastoralist elites, were discovered at Tillya-tepe in the Shebergan oasis on the upper Amu Darya (1<sup>st</sup> c. CE, see 65), Kok-tepe in the Zaravshan valley (63–64), and Tulkhar in the Beshkent valley (§ 7.5).

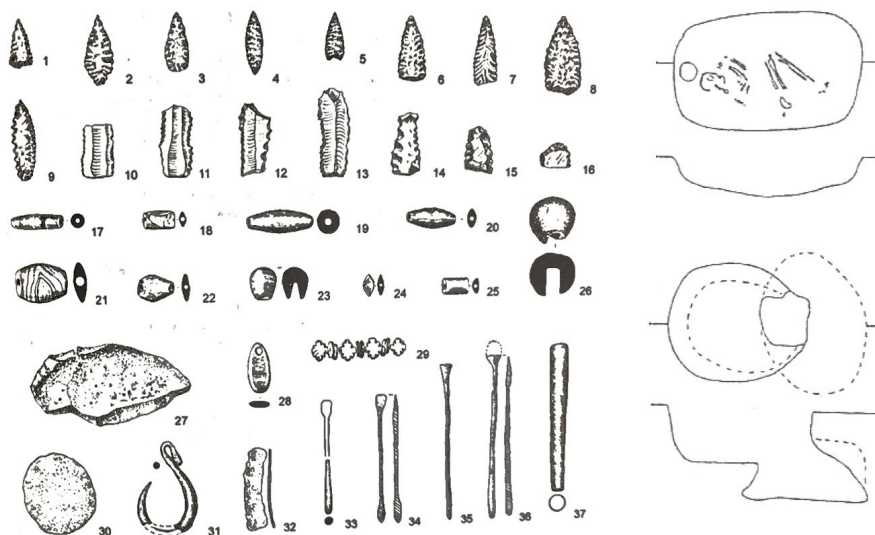
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<sup>3</sup>For historical and archaeological interpretations of migrations in Central Asia, see Abdullaev 2007; Rapin 2007, 58–61; Dani et al. 1992; Dani et al. 1996 [1994]; Parzinger 2011 [2006], 645–678 and 786–815.

<sup>4</sup>Parzinger 2011 [2006], 823.

## 7.2 The lower Zaravshan Basin (late 3<sup>rd</sup>–early 2<sup>nd</sup> mill. BCE)

The earliest niche graves in the Syr Darya and the Amu Darya basins are the so called ‘catacombs’ of the Zaman-baba culture in the lower Zaravshan basin, dated to the late 3<sup>rd</sup> and early 2<sup>nd</sup> millennium BCE.<sup>5</sup> The eponymous site Zaman-baba exhibits an enclosed settlement with *pisé* houses. The nearby cemetery featured niche graves with passageways, predominantly single burials with some joint burials of men and women, all buried flexed on the side (Fig. 7.2). Men were buried with flint arrow-heads, and women with ornaments, ochre, antimony hair-dye, turquoise and other beads, and gold. One grave had a female statuette. Pottery was hand-molded and of high quality. These people used bronze, practiced crop-farming, and held cattle, sheep and goats.<sup>6</sup>



**Figure 7.2** – Assemblage Zaman-baba culture, Zaravshan valley (After Parzinger 2011, 332, Fig. 115, 1–37; 39–40).

The Zaman-Baba culture shows continuity with the local neolithic culture. It was influenced by southern farming communities, as evidenced from wheel-thrown pottery from Kopet Dag oases including the Namazga IV culture (c. 2500 BCE) belonging to the BMAC. Catacombs and certain vessel types are considered influence from migrating cattle herders from the steppes.<sup>7</sup>

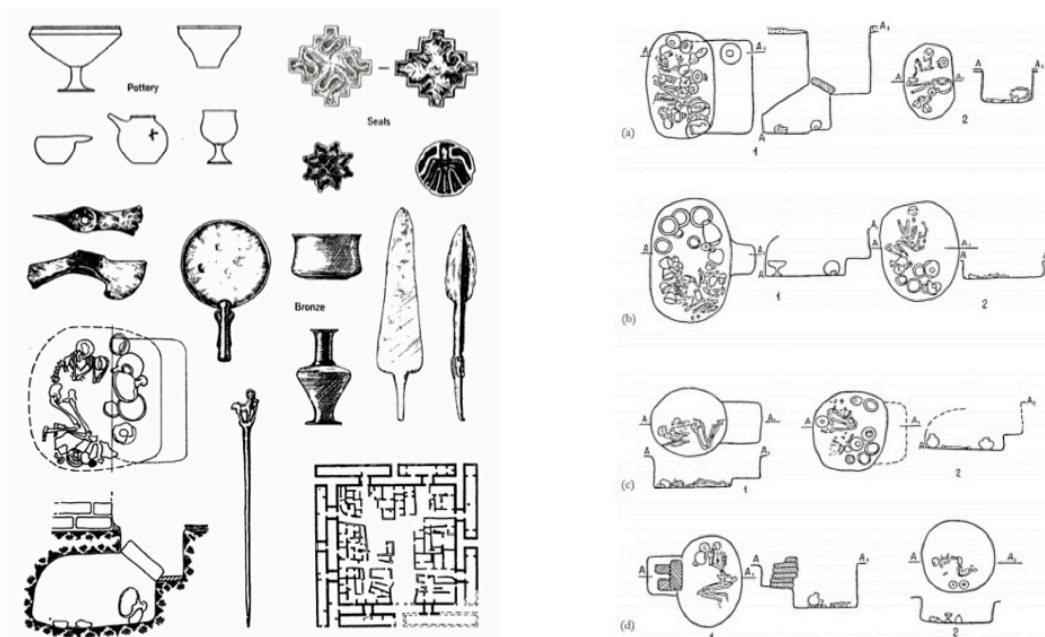
<sup>5</sup>Gulyamov et al. 1966; *Zaman-Baba* 1970–1979.

<sup>6</sup>Dani et al. 1992, 235.

<sup>7</sup>Masson 1992, 245.

### 7.3 The Surkhandarya area (2200–1700/1000 BCE)

Niche grave traditions are known from the Sapalli culture (c. 2200–1700 BCE) distributed along the right tributaries of the upper Amu Darya (Fig. 7.1).<sup>8</sup> This area is backed in the north by the Hissar range.



**Figure 7.3** – LEFT: Grave goods, niche grave and city plan of the Sapalli culture (Masson 1992, 332, Fig. 2). RIGHT: Graves of the Sapalli culture in Southern Uzbekistan: (a) Sapalli stage; (b) Jarkuntan stage; (c) Kuzalinski stage; (d) Molali stage (After A.A. Askarov and B.N. Abdulaev, Masson 1992, 332, Fig. 2).

The Sapalli culture can be considered a regional variant of the Bactria-Margiana Archaeological Complex (BMAC), which developed in the early 2<sup>nd</sup> millennium BCE resulting from migrations from the south-west. It is best known from the sites Sapalli, Bustan, Dzharkutan and Molali. The relative chronology of the Sapalli culture is disputed but Litvinsky claims that the late phase or Molali Phase can be dated unambiguously between the 11<sup>th</sup> to 10<sup>th</sup> c. BCE.<sup>9</sup> The Sapalli people were settled farmers practicing crop farming and pastoralism.

Shaft and niche graves with single flexed burials characterise all phases of the Sapalli culture (Fig. 7.3). Evidence for the practice of a fire cult and cremation in the later phases has been attributed to influence of the Andronovo culture.<sup>10</sup> Graves were initially constructed within the city underneath floors of houses, streets or walls, while later on a separate space outside the city was used.

<sup>8</sup>Askarov 1973; Askarov 1977; Askarov et al. 1983.

<sup>9</sup>Kuz'mina et al. 2007, 267; Litvinsky et al. 1992, 380.

<sup>10</sup>See Kuz'mina et al. 2007, 268.

Niche graves feature oval niches, which are generally only large enough to hold one individual in flexed posture. The entry pit is often rectangular and stepped. The walls of entry shaft and niche are reinforced with mud brick. The entry shaft is backfilled while the niche is sealed with bricks.

Flexed burials on the side prevail, mostly as single burials and occasionally multiple burials. Some graves contain a clay figurine or sheep bones to substitute human remains. Grave goods include considerable quantities of hand-molded and wheel-thrown pottery in various forms, bronze objects including pins, seals, mirrors, axes, spearheads, and stone objects (Fig. 7.3).

## 7.4 The Beshkent and Vakhsh valleys (c. 1300–1000 BCE)

Niche graves practices are known from the late Bronze Age Beshkent and Vakhsh cultures. The former was identified by A. M. Mandel'shtam and the latter by B. A. Litvinsky.<sup>11</sup> Remains are distributed in the Beshkent valley on the Kafirnigan river, in Tupkhana near Dushanbe, and in the valleys of the rivers Vakhsh and Kyzylsu (Fig. 7.1). Because of their similarities, they are jointly called the Beshkent-Vakhsh culture.<sup>12</sup> The Beshkent culture is slightly earlier than the Vakhsh culture. Mandel'shtam dated the early group of burials of Tulkhar, the type site of the latter, 14<sup>th</sup> to 8<sup>th</sup> c. BCE, and the Beshkent culture itself 13<sup>th</sup> to 11<sup>th</sup> c. BCE. The Vakhsh culture is attributed to the last centuries of the 2<sup>nd</sup> millennium BCE.<sup>13</sup>

The graves of the Beshkent culture show much variety. Part of the early Tulkhar group show influence from Andronovo-Fedorovo rituals, including the presence of mounds, enclosures, stone cists, cremation, stone swastika settings and hand-molded ceramics, but innovative niche grave practices characteristic of the Beshkent culture followed quickly. These included two niche grave types, 'a pit with downward passage or dromos' and a 'catacomb'.<sup>14</sup> The former feature lateral niches and the latter perpendicular or longitudinal niche. As shown in Fig. 7.4 (left), the graves feature mounds, often with a stone ring wall embedded at the base. A latitudinal grave orientation prevails. Flexed burial on the side is common, though occasionally cremation occurs. Single burials prevail, next to some

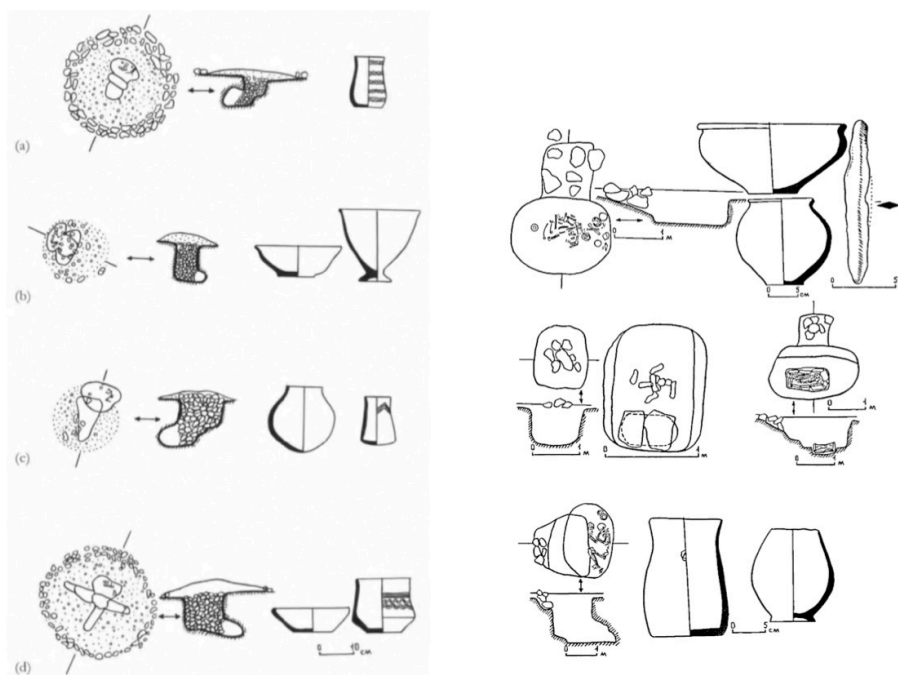
<sup>11</sup>Mandel'shtam 1968; Litvinsky 1964, 158.

<sup>12</sup>Kuzmina dates this culture to the 1700–1500 BCE, see Kuz'mina et al. 2007, 275.

<sup>13</sup>Litvinsky et al. 1992, 378, 380.

<sup>14</sup>Kuz'mina et al. 2007, 277.

double and multiple burials. 70% of the pottery is hand-molded, and 30% is wheel-made imported ware from the Bactria-Margiana Archaeological Complex (BMAC). Pots, dishes and basins are common. There are metal knives, handled mirrors and pins. Evidence of a fire culture is more obvious in the Beshkent than the Vakhsh culture. The early Tulkhar population belongs to the southern proto-mediterranean types, though morphologically not closely related to that of the Vakhsh culture or the farming communities of Bactria.<sup>15</sup>



**Figure 7.4** – LEFT: Early Tulkhar culture, southern Tajikistan. (a) niche grave with sloping entry pit (Beshkent culture); (b) niche grave with cremated corpse; (c) catacomb (Vakhsh culture); (d) burial of a dismembered individual in a stone box. RIGHT: Main grave types of the Vakhsh culture, ‘Tiger Gorge’, southern Tajikistan. (Adapted from A. M. Mandel’shtam, in Litvinsky and P’yankova 1992, 373, Fig. 1 and 375, Fig. 2.)

The Vakhsh culture in the middle and lower Vakhsh valley shows more standardised grave forms than the Beshkent ones. The graves feature low-rising mounds and are distributed on upper loess river terraces near low mountain ridges. A stone ring wall of one to four rows is embedded at the base of the mound, and sometimes an outer circular enclosure with a diameter of 9.5–30 m is added.

Lateral niche graves represent 43% of the graves, and perpendicular niche graves 30% (Fig. 7.4, right). There are variants of the forms just mentioned, shaft graves with multiple burials, and mounded surface graves. Flexed burials on the side prevail. A northern body orientation is common (30%) but southern orientation are seen too. Single burial prevails, but there are some double ones. 70% of the pottery is hand-molded, and 30% is wheel-made

<sup>15</sup>Litvinsky et al. 1992, 378.

imported ware from neighbouring farming communities in Bactria. Egg-shaped, biconical and jar-shaped ware are characteristic of the Vakhsh culture. The population of the Vakhsh cemetery is related to the Europoid, dolichocephalic, leptomorphic type.<sup>16</sup>

People of the Beshkent-Vaksh culture practiced sheep and goat pastoralism. The settlement of Tashguzor yielded evidence for farming and stockbreeding of cattle, ovicaprids, donkey, and horse.<sup>17</sup> People lived in symbiosis with steppe pastoralists to the north and farmers of the BMAC to the south. The Beshkent culture was more strongly influenced by late Bronze Age steppe cultures. People from the late Sapalli culture possibly participated in this process.

Influence of the late Molali phase of the Sapalli culture (1100–1000 c. BCE) is evidenced by pottery from Beshkent valley sites.<sup>18</sup> While influence from the Andronovo-Fedorov culture – including the presence of mounds – is evident in burial rituals of the Beshkent-Vakhsh culture, it is less clear where niche grave practices originated. Kuz'mina stated: *The origin of this rite (i.e. graves with a downward passage and catacombs) in Central Asia remains debatable. It is known in the Bactria-Margiana culture, but its genesis there is unclear, and in the Zaman-Baba culture where it may be a heritage of the Catacomb culture of the European steppe.*<sup>19</sup>

Probably Kuz'mina referred to the Sapalli culture when mentioning niche graves in the Bactria-Margiana culture. It would indeed make sense to suggest such practices were introduced in the Beshkent-Vakhsh culture via the late Sapalli culture as the two show evidence of contact (cf. pottery, see above). Influence from or to the Zaman-Baba culture (late 3<sup>rd</sup> and early 2<sup>nd</sup> mill. BCE) west of the Bukhara Oasis is also supported from a chronological and geographical perspective. To demonstrate that niche grave practices ultimately spread from the Catacomb cultures in the Pontic Caspian steppe to the Zaravshan valley however, we would need to bridge a gap of c. 2500 km, and account for any formal changes in between.

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<sup>16</sup>Kiyatkina 1976, 25.

<sup>17</sup>Kuz'mina et al. 2007, 277.

<sup>18</sup>Litvinsky et al. 1992, 380.

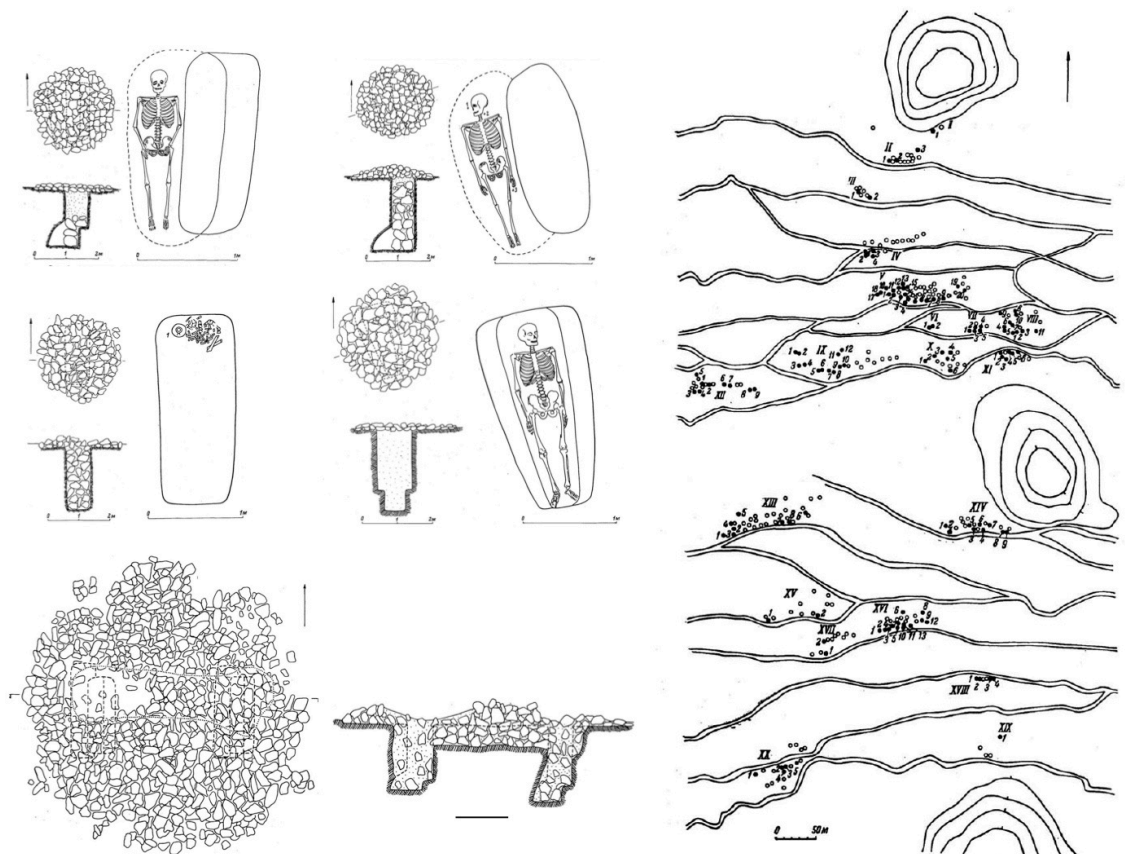
<sup>19</sup>Kuz'mina et al. 2007, 277.



## 7.5 The Beshkent valley (c. 200–0 BCE)

A later group of niche graves found in the Beshkent valley at the sites of Tulkhar, Aruktau and Kokkum, and Babashov in the middle Amu Darya basin in Turkmenia, deserves special attention. They feature lateral niches and exists side-by-side with other grave types. Mandel'shtam excavated the site cluster and dated them 2<sup>nd</sup>–1<sup>st</sup> c. BCE.<sup>20</sup> Similar remains were found at Airtam east of Termez.<sup>21</sup>

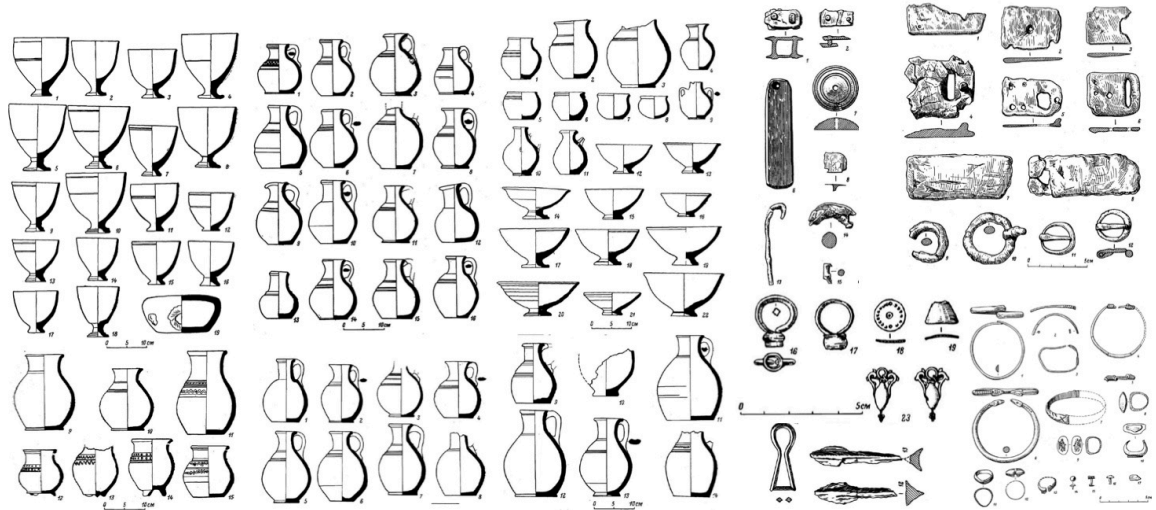
Tulkhar, Aruktau and Kokkum are located between the Surkhan Darya and Kafirnigan rivers. Aruktau illustrates their setting, situated in the middle Beshkent valley on the western slopes of the Aruktau mountain range. The graves are distributed in clusters on top of three hilltops, with in between many streams cutting alluvial terraces of loess and pebblestone. The mounds sometimes cover more than one grave (Fig. 7.5). The small circular pebble mounds have a diameter of 3–4 m. A northern body orientation and extended body posture on the back prevail at all three sites.



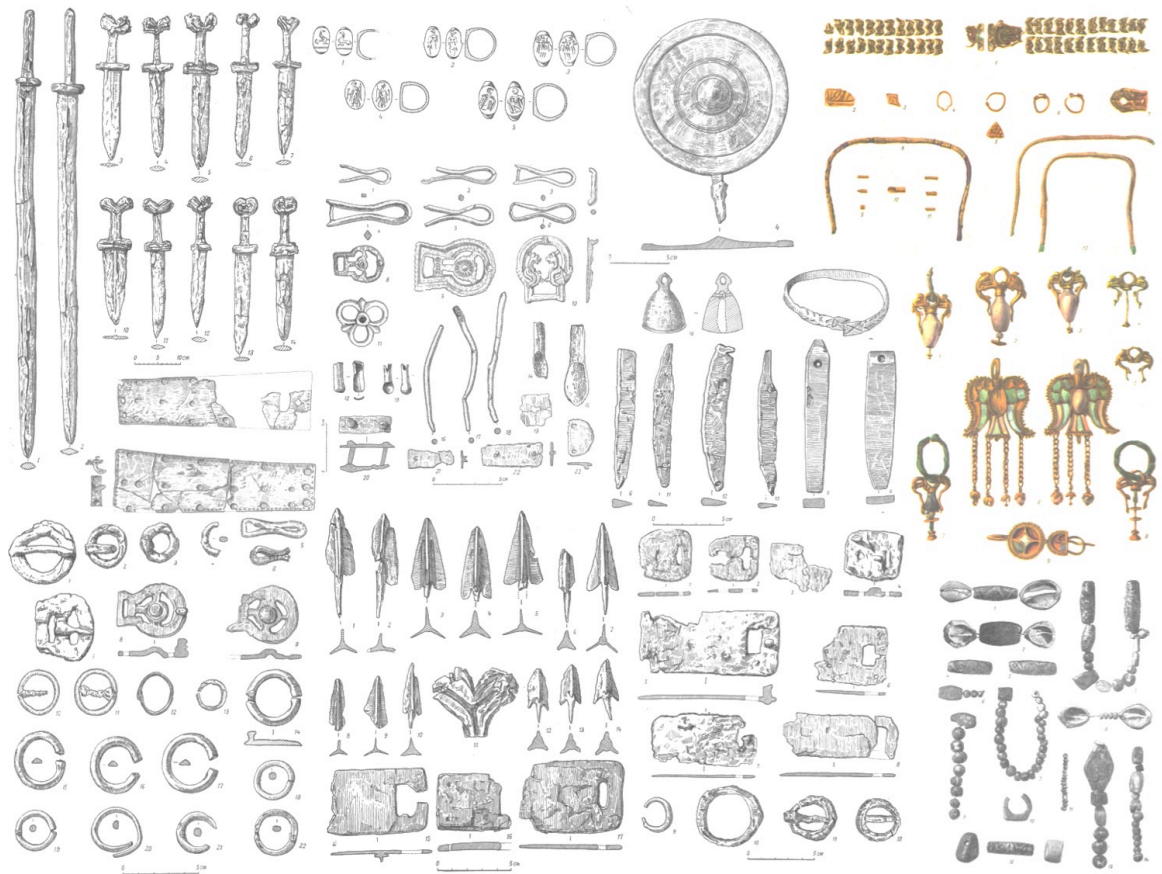
**Figure 7.5** – UPPER LEFT: grave types, Aruktau. BOTTOM LEFT: Mound with two niche graves, Kokkum. RIGHT: Distribution map, Aruktau. Beshkent valley. (After Mandelshtam 1975, 7–9, Figs. 1–3; 12, Fig. 5; 58, Fig. 28; 151, Fig. 2)

<sup>20</sup>Mandel'shtam 1966; Mandel'shtam 1968; Mandel'shtam 1975; Mandel'shtam 1963.

<sup>21</sup>Turgunov 1973, 64–8; in Abdullaev 2007, 80.



**Figure 7.6** – Grave goods, Aruktau (After Mandel'shtam 1975, 152–153, Figs. 3–4; 155, Figs. 6; 157, Fig. 8; 159, Fig. 10; 161, Fig. 12; 163–167, Figs. 14–18).



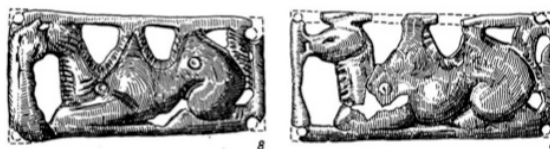
**Figure 7.7** – Non-pottery grave goods, Tulkhari (Adapted from Mandel'shtam 1966, Figs. 39–46, 49, 51, 53–56, 59–61)

Out of 125 graves found at Aruktau, 73 (58%) are lateral niche graves, 7 (5%) shaft graves, 31 (25%) cenotaphs of different types, while 14 (10%) mounded graves belong to the Bronze Age. Most niches are positioned in the western wall. At Babashov, the 148 graves count 103 (69%) shaft graves, 5 (3%) 25 shaft graves with side-ledges, 27 (17.5%) lateral

niche graves (25 with western niches, 2 with eastern ones), and 13 (9%) cenotaphs.<sup>22</sup> This is different for the niche graves of Tulkhar and BM V, where niche graves also represent the majority (77% respectively 76%) but where eastern niches prevail.<sup>23</sup>

Grave goods include wheel-thrown pottery stem cups and pitchers, iron swords, daggers, arrows, knives accompanied by whetstones, paired rectangular belt plaques, ring-shaped belt buckles with hinged tongue, necklaces, earrings, bracelets, finger rings and other jewellery made of gold, turquoise and various types of stone. Some ornaments, such as the dolphin-shaped earrings, are similar to samples from Tillya-tepe (Figs. 7.6 and 7.7).

Sheep bones are common, but horse bones are absent. The only reference to horses is a limestone pendant carved into a horse head from Babashov. People relied on sheep pastoralism, and as Mandel'shtam noted, they came to the Beshkent valley to pasture their herds during summer.<sup>24</sup>



**Figure 7.8** – Belt plaques, Babashov (After Mandel'shtam 1975, 181, Fig. 33).

Swords, daggers, and belt buckles with hinged tongue, represent Sarmatian influence. As Mandel'shtam noted, the openwork belt plaques figuring a recumbent camel from Babashov, show a striking resemblance with samples from the Prokhorovka culture in the southern Ural (compare Fig. 7.8 with Fig. 6.5).<sup>25</sup>

## 7.6 The Zaravshan Valley (c. 200 BCE–100/700 CE)

Niche grave practices appear in the Zaravshan valley from the 2<sup>nd</sup> c. BCE onward. Between 1952 to 1977, O.V. Obel'chenko excavated several sites with mounded graves in the Samarkand and Bukhara oases.<sup>26</sup> These included Agalyk, Akjar, Mirankul and Sazagan in the Samarkand oasis and Kalkansay, Kyzyl Tepe, Kuyu Mazar, Lyavandak, Shakhrivayron, Khazara and Yangiyul in the Bukhara oasis. Obel'chenko distinguished three types: 1) shaft graves dated

<sup>22</sup>Mandel'shtam 1975, 40, 108.

<sup>23</sup>Gorbunova 2001, 127.

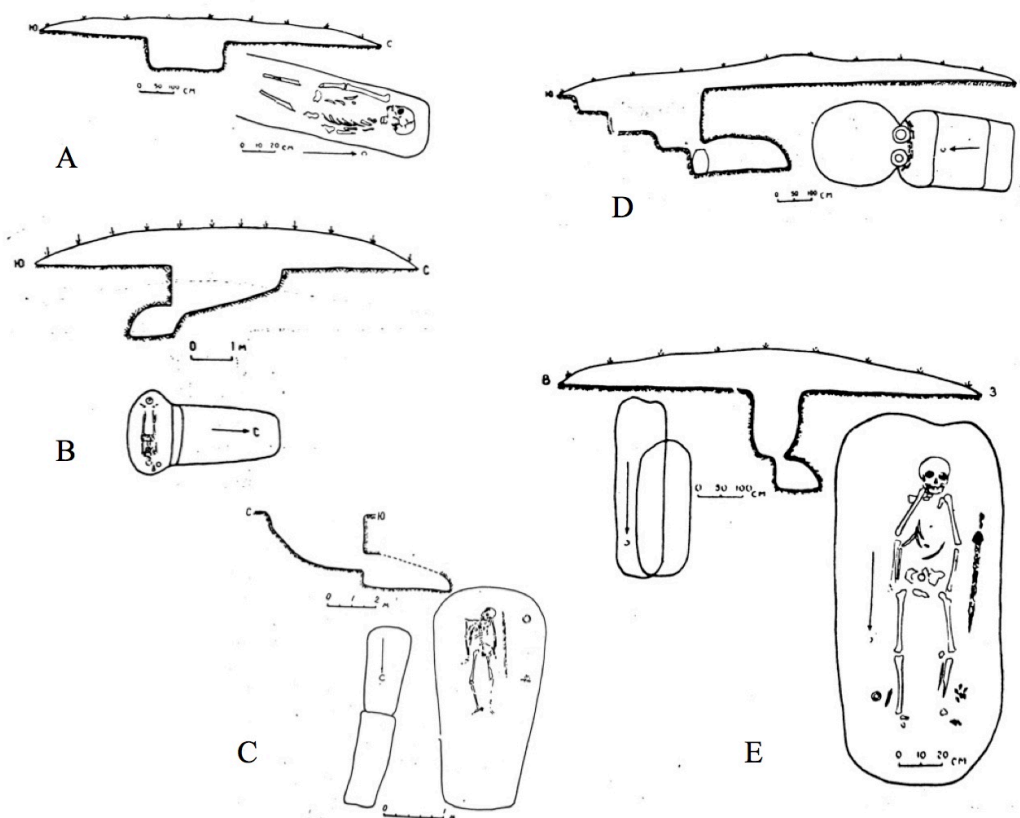
<sup>24</sup>Mandel'shtam 1966, 160–162.

<sup>25</sup>Mandel'shtam 1975, 145.

<sup>26</sup>Obel'chenko 1961; Obel'chenko 1992.

7<sup>th</sup>–3<sup>rd</sup> c. BCE; 2) *podboi* and ‘catacombs’ with a stepped entry pit dated 2<sup>nd</sup> c. BCE–1<sup>st</sup> c. CE; and 3) *podboi* and ‘catacombs’ dated 2<sup>nd</sup>–7<sup>th</sup> c. CE, distinguishable from those of the previous period only by their grave goods.<sup>27</sup> The few grave goods include wheel thrown pottery from nearby cities and locally made hand-molded pottery and stem cups. Weapons like arrow-heads and daggers are rare and occasionally a ‘Sarmatian’ longsword was found.

Calculations by Natalia G. Gorbunova show that lateral niche graves or *podboi* in the Bukhara Oasis were best represented at Kuyu Mazar, with a share of 90%. At Lyanadak this was 63% and in Kizil-tepe 30%. All but one lateral niche grave in the Bukhara Oasis have western niches.<sup>28</sup>



**Figure 7.9** – A: Kyzyl Tepe Kurgan 5; B: Khazara Kurgan 56; C-D-E: Kyzyl Tepe Kurgan 19, 11 and 6. Bukhara oasis (After Obel’chenko 1992)

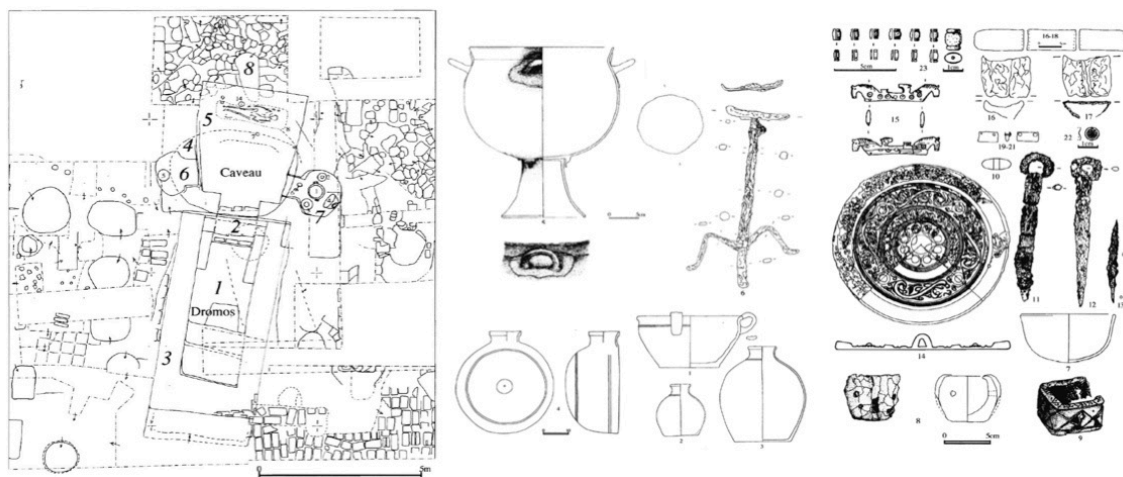
Considering the variety in grave types in the eastern Bukhara oasis, it seems the tripartite division into shaft graves, *podboi* and catacombs proposed by Obel’chenko does not suffice. Following my arguments in § 2.1, I distinguish at least four types (Fig. 7.9): A) shaft graves; B) perpendicular niche graves with a sloping entry pit; C) longitudinal niche

<sup>27</sup>Obel’chenko 1992, 62–90; See also Lo Muzio 2009, 45.

<sup>28</sup>Gorbunova 2001, 127.

graves with a sloping entry shaft; E) lateral niche graves with an entry shaft with straight walls. A fifth type D could arguably be identified, with a niche positioned lengthwise as in type C, but featuring a stepped entry pit starting from the edge of the mound, and a small access hole as niche entrance. All grave types have mounds with diameters of 7–13 m.

Two sites in the Zaravshan valley cannot be ignored in the present discussion, and illustrate the relevance of more refined grave typologies: Kok-tepe and Orlat. Although lateral niche graves occurred at both sites, the elites here were buried in different niche grave types.



**Figure 7.10** – LEFT: Plan of the ‘princess tomb’ at Kok-tepe: *dromos* (1), sealing between entry pit and chamber (2); robbery pit (4); chamber with burial (5); side niches (6 and 7). RIGHT: Grave goods. (After Rapin 2001, 40, Fig. 5; 46–47, Figs. 8–9; and 49, Fig. 10)

The first site, Kok-tepe, located north of Samarkand at the border with the steppe was excavated by a French-Uzbek team.<sup>29</sup> The stratigraphy of the city of Kok-tepe goes back to the Bronze Age.<sup>30</sup>

Relevant here are the occupation phases attributed to mobile pastoralists. Claude Rapin distinguished an early phase with burials dated to the invasion of the Zaravshan Valley and Samarkand in the 3<sup>rd</sup> c. BCE, or more likely, after the death of the Greco-Bactrian king Eucratides (171–145 BCE), and a later phase represented by a monumental grave of the so-called nomad princess dated 1<sup>st</sup> c. CE. The first phase is characterised lateral niche graves but little is known about them.<sup>31</sup>

The ‘princess tomb’ of Kok-tepe dated to the later phase (1<sup>st</sup> c. CE) was cut out from a ruin hill of the early Achaemenid period. A stepped entry pit led to a niche or small

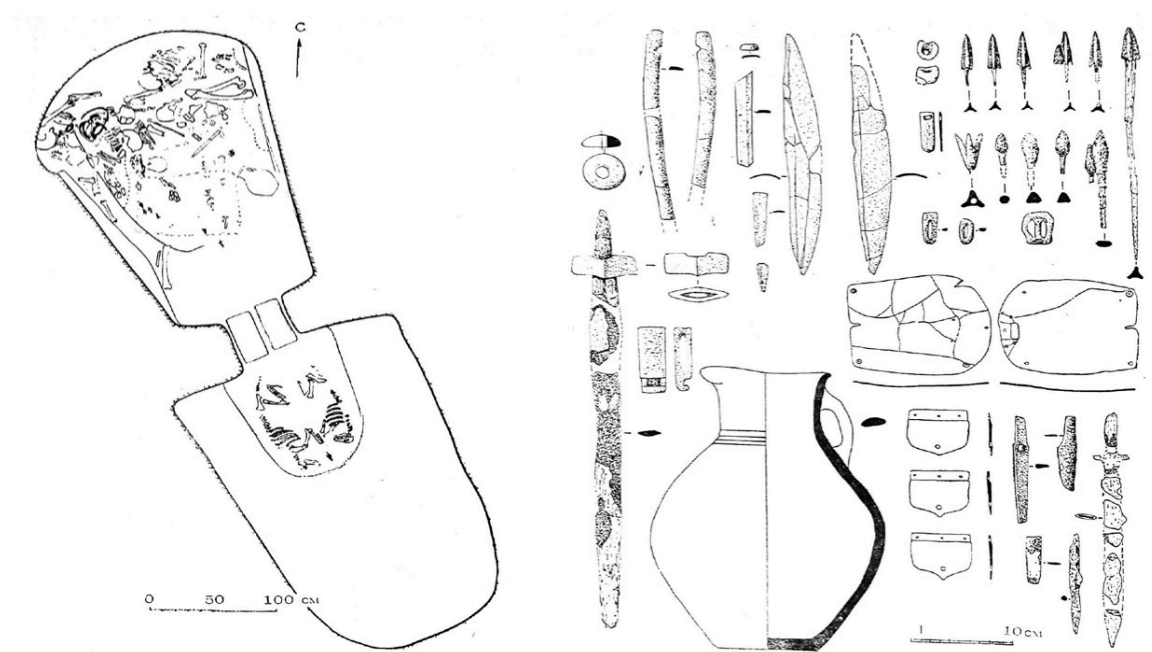
<sup>29</sup>Rapin et al. 2001; Rapin 2007.

<sup>30</sup>Francfort 2001b.

<sup>31</sup>Rapin 2007, 51.

vaulted chamber perpendicular to it. Two smaller niches with grave goods were fashioned into the side walls. A woman was found extended on the back on a wooden corpse bed inside the chamber. Her cranium showed artificial deformation. The body was positioned perpendicular to the meridional axis of the grave with the head pointing eastward (Fig. 7.10).

The high status of the grave occupant is suggested by multiple cultural cross references, a dress with gold foil ornaments, an iron candelabrum, pottery flasks, a crater, copper-alloy cauldron, single handed cup, silver plate, small silver cup, clay incense-burners, a bone comb with horse decoration, two loop-handled iron knives, belt buckles inlaid with turquoise, a veil with glass beads, a headdress and an embroidered bag holding a Chinese bronze mirror. Rapin argued that the grave occupant probably belonged to ‘sedentarised nomads’ when Kok-tepe ceased to be on the steppe frontier due to new irrigation works in the area.<sup>32</sup> The grave is contemporary with that of Tillya-tepe and shares several similarities with it (65).



**Figure 7.11** – Grave goods and grave plan of Kurgan no. 2 at Orlat, Zaravshan Basin (After Pugachenkova 1989, 125, Figs.55, 127, Fig. 56)

The second site, Orlat, is located northwest of Samarkand on the banks of the Saganak, a tributary of the Zaravshan. Galina Pugachenko situated it 2<sup>nd</sup> to 1<sup>st</sup> c. BCE, a date contested by other scholars as discussed below (65). Pugachenko attributed the remains to the Kangju mentioned in Chinese sources, who held the territory west of Samarkand at that

<sup>32</sup>Rapin 2007, 53–54.

time.<sup>33</sup> Mounded graves with lateral niches or niches cut out from one of the short walls of the entry pit were excavated.

Kurgan no. 2 at Orlat is of special interest. A mound measuring 9 m in diameter covers a NW-SE oriented subsurface construction existing of an entry pit and a niche cut out lengthwise from the short wall of the latter (Fig. 7.11). The niche is sealed with mud brick and two dogs are buried in front of it. A man is buried next to a woman. The skeletal remains are disturbed and body posture and positioning towards the entry pit are unknown. The man is accompanied by iron shafted triangular arrowheads, iron plaques and buckles covered with gold foil, a double edged iron sword decorated with jade and a compound bow with bone end plate.<sup>34</sup>

Apart from five decorated bone plaques found in Kurgan 2, famous for their engraved battle and hunting scenes and zoomorphic motifs, the (pointed) arc-shaped bone belt plaques and horse harness fittings in Fig. 7.11 (bottom right) show strong resemblances with samples in the Turfan Basin and the Altai and are possibly part of the same system (322). Other similarities between the Orlat and Turfan (niche) graves, include bone endplates for reinforcing composite bows (Fig. 7.11, top left). The possibility of contact based on these similarities is further discussed in Chapt. 24. The Orlat plaques provide important evidence to date the Orlat burials. Originally dated 2<sup>nd</sup> to 1<sup>st</sup> c. BCE, scholars have suggested dates of 1<sup>st</sup>–2<sup>nd</sup> CE, 3<sup>rd</sup>–4<sup>th</sup> CE or even later.<sup>35</sup> Similar plaques in the Turfan Basin support a date of 2<sup>nd</sup> to 1<sup>st</sup> c. BCE (322), but as argued hereunder, this could be extended to the 1<sup>st</sup> c. CE.

Similarities with Tillya-tepe in the Shebergan oasis in the upper Amu Darya Basin (Fig. 7.1) are helpful to establish the chronology of Orlat and Kok-tepe. Six graves were excavated though detailed descriptions about their construction are lacking.<sup>36</sup> They are single burials of men and women buried in extended posture mostly with a meridional orientation. The grave goods of Tillya-tepe bear numerous references to Hellenist, Roman, Indian, Kushan, Bactrian, Han and Parthian, and steppe cultures. Furthermore, similar objects were found at both Tillya-tepe and middle Sarmatian graves in northern Kazakhstan and the Pontic-Caspian steppe.<sup>37</sup> As at Kok-tepe, the graves were cut out from a ruin-hill and evidence for deliberate skull deformation was found. One of the men was accompanied by a whole horse

<sup>33</sup>See for a description of the Orlat tombs, Pugačenkova 1989, 122–154.

<sup>34</sup>For the distribution of nephrite sword guards and scabbard slides of the 2<sup>nd</sup> CE in relation to trans- Eurasian exchange, see Brosseder 2015, 268–270.

<sup>35</sup>For a discussion on the dates, see Mode 2003.

<sup>36</sup>Sarianidi 1989; Hiebert et al. 2011, 211–293.

<sup>37</sup>Olbrycht 2013, 86; Sarianidi 1985; Parzinger et al. 2003; Parzinger 2011 [2006], 786–789, 826.

skeleton. Some belt plaques exhibit the same pointed arc-shaped forms seen in Orlat, but they are made of gold and turquoise inlay.<sup>38</sup> As mentioned above, there are also similarities between Tillya-tepe and Tulkhar (61). Tillya-tepe can be relatively firmly dated, as the most recent (Roman) coin of 37 CE provides a *terminus post quem*. Therefore, it provides a chronological anchor point (1<sup>st</sup> c. CE) for all the sites just mentioned.

It should be reminded here that the study of mounded graves (including lateral niche graves) in the Zaravshan basin should be seen in a broader research context of scholars trying to explain the emergence of ‘kurgan cemeteries’ which they *a priori* see as the remains of mobile pastoralist groups. As Ciro Lo Muzio stated, *The presence of nomad or semi-nomad groups throughout the Zaravshan valley is proven by solid archaeological evidence especially from the third-second century BCE onwards, that is, during the period in which Transoxiana was crossed by migratory flows moving from the two opposite ends of the Eurasian steppe belt: the Chinese border, in the east, and the Sarmatian area, between the Caspian Sea and the Urals, in the west.*<sup>39</sup> Zoya A. Barbarunova also referred to migrations moving eastward to the mid-Ishim region and southward to the Zaravshan Basin resulting in a near-abandonment of the southern Ural steppes by the 1<sup>st</sup> c. BCE.<sup>40</sup> However, the theory of a Sarmatian invasion of Central Asia in the 2<sup>nd</sup> to 1<sup>st</sup> BCE is refuted by some scholars.<sup>41</sup>

In conclusion, around 200 BCE and 100 CE, lateral niche grave practices emerged in the Zaravshan valley side-by-side with or slightly earlier than longitudinal and perpendicular niche graves. Afterwards, they continued to exist but the latter two types possibly gained importance, as suggested by the stratigraphy of Kok-tepe. The lateral niche graves, and in the case of Orlat also arc-shaped belt plaques and bone endplates for reinforcing bow nocks, suggest similar network connections as the Turfan Basin. The grave goods in the niche graves on the other hand, show strong references to Sarmatian assemblages.

<sup>38</sup>Hiebert et al. 2011, 279.

<sup>39</sup>Lo Muzio 2009, 45.

<sup>40</sup>Barbarunova 1995, 121–122.

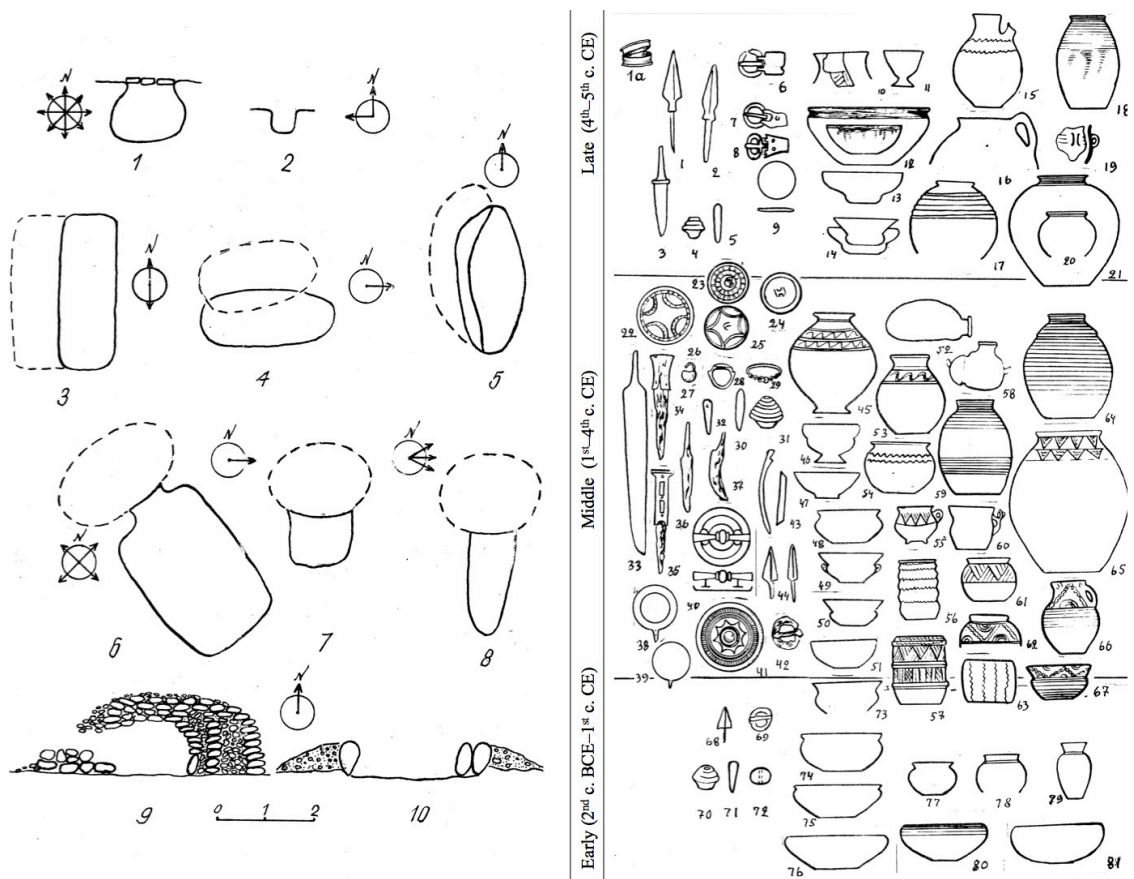
<sup>41</sup>Mandel'shtam 1974; Abdullaev 1998, 79; Zadneprovsky 1997.



## 7.7 The Fergana Valley (c. 200 BCE–400/700 CE)

During the Bronze Age, crop farmers and cattle breeders lived side-by-side in the Fergana Basin, forming the basis for the Early Iron Age Eilatan-Aktam culture (c. 6<sup>th</sup>–3<sup>rd</sup> c. BCE). The latter shared several features with the stock-breeding tribes of the nearest mountainous areas of Ketmentyube, Semirechye, Talas, Tianshan, Alai, and to some extent the Pamirs and Tashkent oasis. All were part of a wider Saka culture.<sup>42</sup>

The Kugai-Karabulak culture (2<sup>nd</sup> c. BCE–7<sup>th</sup> c. CE) developed from the Eilatan-Aktam culture, some influence of its south-western neighbours as reflected in pottery and adobe architecture, and an influx of mobile pastoralists historically associated with the Wusun, Kangju, and Yuezhi.



**Figure 7.12** – Kugai-Karabulak culture, Fergana Basin. LEFT: 1–2: shaft graves; 3–5: *podboi*; 6–8: catacombs of the Kenkol, Khangiz and Damkul type; 9–10: surface tombs. RIGHT: Assemblage. (After Gorbunova 1986, Fig. 16 and Plate LXXXV)

<sup>42</sup>Gorbunova 1986, 212–213.

The middle Kugai-Karabulak culture (1<sup>st</sup>–4<sup>th</sup> c. CE) saw a sudden increase of settlements with fortified buildings. Sedentary people practising irrigation farming and cattle breeders lived in symbiosis. Increased variation in grave types including shaft graves, lateral and perpendicular niche graves, and surface graves, reflected ethnic diversity. The Fergana Basin was embedded in a network reaching to Han China, the eastern Pamirs and Tianshan mountains, the Kushan and Sarmatian world. This phase represented the heyday of Kugai-Karabulak culture.<sup>43</sup>

Based on Zadneprovsky and Litvinsky's work, and an analysis of all available data, Gorbunova distinguished four major groups of graves in the Kugai-Karabulak culture: 1) dug graves; 2) *podboi*; 3) catacombs; and 4) on-level burials.<sup>44</sup>

Fig. 7.12 shows these types, including the Kenkol, Khangiz and Damkul subtypes for the catacomb type. Using the terminology adopted for this dissertation (10), the main types can be referred to as 1) shaft graves; 2) lateral niche graves; 3) perpendicular niche graves with a stepped or sloping entry pit; and 4) surface graves.

Gorbunova calculated that *podboi* and catacombs are equally represented in the Fergana Basin by 40% respectively 42%, while shaft graves accounted for 17–20%. Different grave types usually coexist, while occasionally only one type exists, and surface graves always form isolated cemeteries. *Podboi* prevailed in the southwestern Fergana Basin. Based on the available though incomplete data, she stated that *podboi* here make up 60%, catacombs 20%, and shaft graves (often with timber roofs) 17%. *Podboi* represent the only grave type at Koktash near Vuadil and Kara-moinok.<sup>45</sup>

Sites with lateral niche graves of the middle Kugai-Karabulak culture in the southwestern Fergana Basin include: Kara-moinok in the Lailak valley near the Turkestan range, Isfara and Voruk-ushcheli both on the left bank of the Isfara River. Sites on the right bank of the Isfara include Chilgazy, Kalantar-Khona, Usto-mulla, Karabag, Surh II, Chorku I, Chorku II and Kishlak Vorukh. Other sites are Kara-bulak between the Isfara and Sokh rivers, and Karabel, Tura-tash and Koktash on the left bank of the Sokh. In the rest of the Fergana Basin lateral niche graves are rare.<sup>46</sup> The distribution area of lateral niche graves coincides with a centre of pottery production in the Isfara and Sokh valleys.<sup>47</sup>

<sup>43</sup>Gorbunova 1986, 213–215.

<sup>44</sup>Zadneprovsky 1960, 116–128; Litvinsky 1972, 125–130; Gorbunova 1986, 100–104.

<sup>45</sup>Gorbunova 1986, 110.

<sup>46</sup>This summary of sites with lateral niche graves is based on Gorbunova 1986, Fig. 17.

<sup>47</sup>Gorbunova 1986, Fig. 18.



**Figure 7.13** – Isfara valley, Tajikistan (Photograph by the author).

The long stretched Isfara valley flanked by mountains on both side is reminiscent of the Hexi Corridor in China, and may have been of equal strategic importance. It was a crucial connection point between the Syr Darya and Amu Darya basins, between the mountain valleys of the Pamirs and the Tianshan, and vital to control access to the Fergana Basin from the west and the south (Fig. 7.13). The high concentration of lateral niche graves suggests their occupants played a crucial role in defending this strategic position.

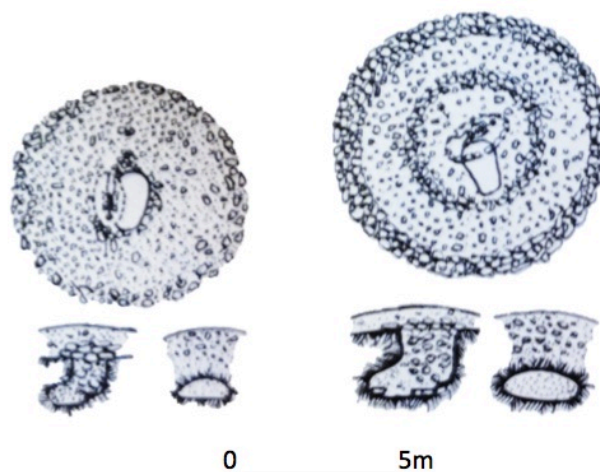
Gorbunova noted considerable variability in *podboi* type and body orientation in the southwestern Fergana Basin.<sup>48</sup> Nevertheless, the calculations I made based on Gorbunova's data show that body orientation was not quite as arbitrary as it may seem. About half of the bodies in the lateral niche graves are oriented towards the south, and about a quarter to the southeast. All the other orientations are much less frequent, while a latitudinal orientation is almost absent. Furthermore, about half of the lateral niche graves have western niches, almost a quarter eastern niches, and another quarter northern niches.<sup>49</sup> Only cardinal orientations were available for niches, which is less precise than intercardinal orientations.

Gorbunova stated that *podboi* not only prevailed in the southwestern region, but also

<sup>48</sup>Gorbunova 1986, 110.

<sup>49</sup>These counts are based on Gorbunova 1986, 105 and Fig. 17.

existed side-by-side with catacombs of the Khangiz type (perpendicular niche graves) and deep shaft graves.<sup>50</sup> Litvinsky, who investigated mounded graves in the Isfara Valley, also claimed that *podboi* with one or two steps in the opposite shaft wall characterised this area, while catacombs with perpendicular niches were also seen (Fig. 7.14).<sup>51</sup>



**Figure 7.14** – LEFT: lateral niche grave; RIGHT: perpendicular niche grave at Surch, Fergana Basin (After Litvinsky 1986, 26, Figs. 19–2; 19–5. North arrows are absent).

Extended posture on the back prevails in the mounded *podboi* and catacomb graves in the Isfara valley, next to some flexed burials. Single burials prevail, but multiple burials with up to four people are characteristic of Voruch and Karabulak. Different individuals are buried in opposing or identical directions. Litvinsky suggested multiple burial practice in *podboi* probably originated in the Scythian period in the Pamirs and the Fergana Basin.<sup>52</sup> Lateral or perpendicular niches were closed with roundwood, matting or bricks, and the entry shaft was backfilled with stones and soil. Wooden board and tree-trunk coffins were used in *podboi* although reed mats, sometimes with a straw pillow, were more common.<sup>53</sup>

Litvinsky stated that the oldest *podboi* and catacomb kurgans in the Western Fergana Basin are no older than the 2<sup>nd</sup> or 1<sup>st</sup> c. BCE, with the majority dated 1<sup>st</sup>–4<sup>th</sup> c. CE, and a considerable part 5<sup>th</sup>–7<sup>th</sup> c. CE. Chinese mirrors in some of the early graves not only attest to contact with China, but also help dating the graves, even when allowing for a time lag between their production and import into the Fergana Basin.<sup>54</sup>

80% to 90% of the pottery of the middle Kugai-Karabulak culture was wheel-made red slip ware, partly decorated with scratched geometrical, animal or plant motifs. Bowls, pots,

<sup>50</sup>Gorbunova 1986, 110.

<sup>51</sup>Litvinsky 1986, 19.

<sup>52</sup>Litvinsky 1986, 48–55.

<sup>53</sup>Litvinsky 1986, 59.

<sup>54</sup>Litvinsky 1986, 105–106.

jugs, flasks and mugs are common. Modelled ware served for cooking and storage. There are wooden vessels, composite bows with bone endplates, iron arrowheads, daggers and swords, scale armour, stone querns, rubbing stones, whetstones, hoes, iron knives, axes, chisels, sickles, spindle whorls, surmatashes, bronze mirrors, cotton and silk. Men were buried with iron buckles with hinged tongue, and women with head bands, earrings, chest ornaments with bells or coins, glass necklaces and bracelets, stone beads and finger-rings (Fig. 7.12).<sup>55</sup>

The Fergana people engaged in a far-reaching network during the middle phase. Silk and bronze mirrors suggest contact with Chinese empires. Silk was found at Karabulak and, together with samples from Tillya-tepe, Choresmia, Dura-Europos and Crimea, attest to long distance trade across Eurasia.<sup>56</sup> Cotton was probably a local commodity. Metal weapons and belt buckles attest to strong Sarmatian influence.

There is no mentioning of horse burial or horse bones in the Fergana Basin. This is remarkable since horses were a valuable commodity and the interest of Han emperors in horses from Fergana is historically documented.<sup>57</sup> Horse riding and horse sacrifice played a significant role in the development of pastoralist elites in Inner Eurasia.

About the origins of niche graves in the Fergana Basin, Litvinsky argued the Kyzyl-azul site in the Yili Basin (5<sup>th</sup> to 4<sup>th</sup> c. BCE) could hold important clues.<sup>58</sup> He also mentioned similarities with practices in the Talas Valley, and catacomb traditions which lasted until the second half of the 1<sup>st</sup> mill. BCE at Čirik-Rabat on the lower Syr Darya.<sup>59</sup>

In conclusion, lateral niche graves emerged in the Fergana Basin between the late 2<sup>nd</sup> to 1<sup>st</sup> c. BCE, gaining popularity until the 4<sup>th</sup> c. CE, and surviving into the 7<sup>th</sup> c. CE. They coexisted with shaft graves, perpendicular niche graves and surface graves. All featured stone mounds with reinforcements at the base. Lateral niche graves clustered in the Isfara and Sokh valleys, a strategic position. Western niches prevailed, followed by eastern and northern niches. Body orientation was variable, but lateral niche graves favoured SS followed by SE orientations. The main body posture was extended on the back. Single burial prevailed but multiple burial was common in Voruch and Karabulak. Animal sacrifice was insignificant. Local wheel-made red slipware characterised the assemblage, but the latter also exhibited strong influence from the southern Ural and Volga-Don region, and links with Mongolia, South Siberia, and the Han Empire.

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<sup>55</sup>Gorbunova 1986, 214–215.

<sup>56</sup>Olbrycht 2013, 72.

<sup>57</sup>Shiji 123: ‘The account of Dayuan’ in Sima, Qian (ca. 145–ca. 86 BCE) [1961] 1993, 240.

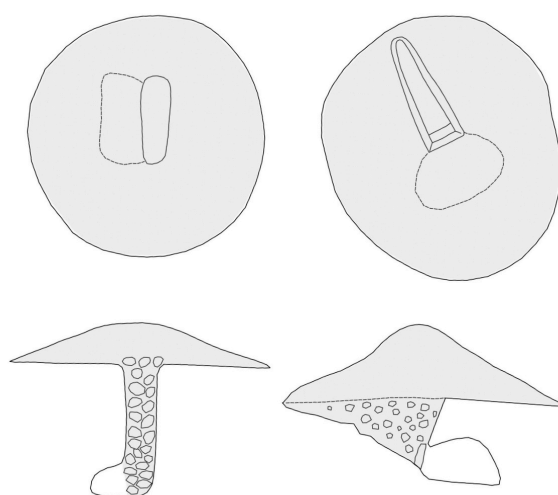
<sup>58</sup>Akishev et al. 1963, 253; Litvinsky 1986, 19, 32.

<sup>59</sup>Tolstov 1962, 139; in Litvinsky 1986, 32.

## 7.8 The Talas valley and Issyk-Kul area (c. 100–400 CE)

Lateral and perpendicular niche graves exist also in the Talas valley, a tributary of the Syr Darya. They are best known from a group of mounded graves at the Kenkol cemetery in the Ketmen-Tube valley on the Kenkol, a tributary of the upper Talas. They were first investigated by A.N. Bernshtam.<sup>60</sup> Sorokin contested the early date of the 1<sup>st</sup> c. BCE by Bernshtam and suggested instead a date of 2<sup>nd</sup> to 4<sup>th</sup> c. CE.<sup>61</sup> I support a date no earlier than 100 CE as argued below.

In the perpendicular niche grave type, the oval niche is vaulted and positioned perpendicular to a stepped entry pit. The entrance of the niche is sealed and the entry pit is backfilled with stone and soil. A burial mound with a diameter between 5 and 10 m covers the grave (Fig. 7.15, right). The lateral niche grave is also mounded but both entry pit and niche are rectangular, the entry pit relatively deep with straight walls, and backfilled with stones and soil (Fig. 7.15, left). In both cases the dead are placed in wooden coffins or on wooden corpse beds. Grave goods include clay and wooden vessels, arrows with iron or bone arrowheads, bows with bone inlay, bronze mirrors, wooden tables, silk garments and clay censurs.<sup>62</sup>



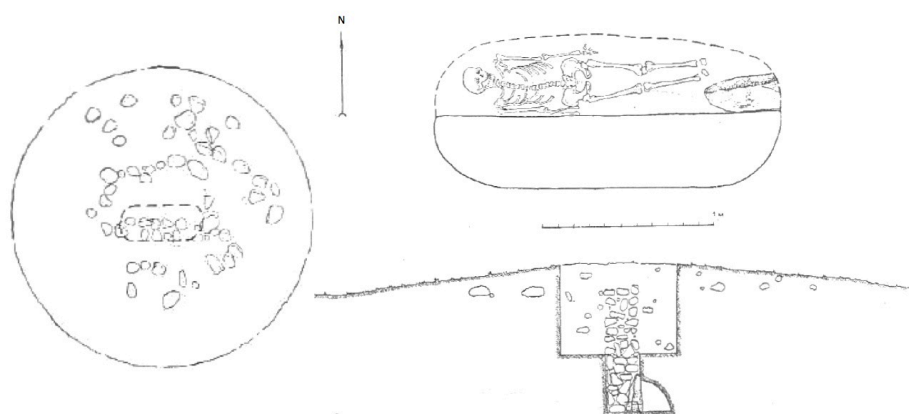
**Figure 7.15** – LEFT: Lateral niche grave. RIGHT: Perpendicular niche grave. Kenkol, Ketmen-Tube valley, Talas valley (Redrawn by author after drawing from permanent exhibition at the State History Museum in Bishkek, Kyrgyzstan).

<sup>60</sup>Bernshtam 1940; Sorokin 1956, see also; Kozhombardiev 1963.

<sup>61</sup>Sorokin 1956, 3–14.

<sup>62</sup>*Kenkol Burial Ground* 1970-1979.

Smirnov pointed out that graves similar to the catacombs of the Kenkol Type already existed in the 3<sup>rd</sup> c. BCE in Sarmatia.<sup>63</sup> Litvinsky too, claimed that the catacombs and *podboi* of the Talas valley were similar to those in the Fergana Basin, and included numerous transition forms.<sup>64</sup> Gorbunova, who also acknowledged influence of the Kenkol-type catacombs onto the Khangiz catacombs in the Fergana Basin, noticed that the territorial distribution of the Kenkol-type catacombs coincides with the area of the Kaunchi and related Otrar-Karatau culture north of Tashkent.<sup>65</sup> Unfortunately, the Tashkent area (Chach) is not well studied.<sup>66</sup>



**Figure 7.16** – Kurgan No. 68, northern shores of Issyk-Kul, 1<sup>st</sup>–4<sup>th</sup> c. CE (After Bernshtam 1952, 69, Fig. 34).

Considering geography and proximity, it is likely that inhabitants of the Talas River stood in contact with those of the Issyk-Kul Lake area. Not surprisingly, lateral niche graves were also discovered on the northern shores of this lake. They were investigated by Bernshtam who dated them 1<sup>st</sup>–4<sup>th</sup> c. CE.<sup>67</sup>

Based on the presence of silk in the Kenkol graves, and their location at the easternmost end of a joint distribution area of lateral and perpendicular niche graves, I would tentatively date both the Kenkol and Issyk-Kul niche graves no earlier than c. 100 CE.

<sup>63</sup>Smirnov 1950, 103.

<sup>64</sup>Litvinsky 1986; Heikel 1918, Taf. 8.9. Litvinsky 1961, 79–80.

<sup>65</sup>Gorbunova 1986, 206.

<sup>66</sup>Kuz'mina et al. 2007, 241.

<sup>67</sup>Bernshtam 1952, 68–69.

## 7.9 Conclusion

Based on the review in Chapt. 7, I tentatively distinguish two sequences of niche grave practices in the Amu Darya and Syr Darya basins.

The first sequence encompasses a series of Bronze Age niche practices emerging successively on the right tributaries of the middle and upper Amu Darya (Fig. 7.1). The earliest appear in the Zaman-Baba culture on the lower Zaravshan (late 3<sup>rd</sup> and early 2<sup>nd</sup> millennium BCE, § 7.2), followed by those of the Sapalli culture on the Surkhandarya (c. 2200–1700/1000 BCE, § 7.3), and subsequently the Beshkent-Vakhsh culture in the Kafirnigan and Vaksh valleys (c. 1300–1000 BCE, § 7.4). In all these, single flexed burials on the side prevail. The niches and entry pit show considerable variability and only the Beshkent-Vakhsh graves feature mounds.

Chronologically and geographically, these Bronze Age developments suggest eastward transmission. That these areas show evidence of contact (e.g. Sapalli pottery in Beshkent culture, 58), and received a similar dual influence from BMAC cultures (cf. wheel-thrown pottery) and steppe cultures, supports this idea. There is nevertheless no decisive evidence that niche grave architecture itself spread from the Zaravshan to the Vakhsh valley. It is even more challenging to hypothesise a transmission from the Pontic Caspian steppe towards the Zaravshan valley. This would require bridging a gap of c. 2500 km and accounting for any changes in between. Finally, it is unknown whether the niche grave practices of the Beshkent-Vakhsh culture were a dead-end in this sequence at c. 1000 BCE, or whether it expanded further as discussed below (95).

The second sequence of niche grave practices manifests itself at the close of the Early Iron Age, after an absence of about 800 years. Niche graves appeared no earlier than c. 200 BCE in the upper and middle Amu Darya basin. In the Zaravshan valley, lateral and perpendicular niche grave practices lasted until the 1<sup>st</sup> c. CE, after which they continued with slightly different grave goods (§ 7.6). Lateral niche graves emerged in the Beshkent valley between 200 and 0 BCE (§ 7.5). In the southwestern Fergana Basin, lateral and perpendicular niche graves emerged c. 2<sup>nd</sup>/1<sup>st</sup> c. BCE and flourished in the middle Kugai-Karabulak culture (1<sup>st</sup>–4<sup>th</sup> c. CE) (§ 7.7). Around 100 CE, lateral and perpendicular niche grave practices appear in the Talas Valley and between 1<sup>st</sup>–4<sup>th</sup> c. CE on the shores of Lake Issyk-Kul (§ 7.8).

It cannot be confirmed whether the traditions just mentioned were triggered in one and the same wave of events. The absence of a more refined chronology hampers a better



understanding. Nevertheless, certain features shared by all traditions are indicative of their chronology. Firstly, all niche grave types are mounded. Secondly, single extended burials prevail, though occasionally double and multiple burials are seen too. The third feature is the coexistence – as specified above and evidenced by similar grave goods – of lateral, perpendicular and less often longitudinal niche graves. The lateral niche graves of the Beshkent valley are an exception, and did only coexist with shaft graves.

Another observation was the development of two centres of lateral niche grave elites, one in the Isfara and Sokh valleys in the southwestern Fergana Basin, and another in the Beshkent valley (Fig. 7.1). This assumption is supported by the majority ratios of this grave types at Tulkhar, Aruktau and Babashov (§ 7.5) and in the southwestern Fergana Basin (69). Furthermore, prestigious items, notably at Tulkhar and Aruktau in the Beshkent valley, attest to an elite with an extensive network (Fig. 7.7). Finally, niche grave elites in the Isfara and Sokh valleys could exploit their strategic position to control access to the Fergana Basin.

The emergence of these two centres resulted from a specific power configuration in Central Asia after c. 200/100 BCE. There is also evidence for other pastoralist elites buried in different grave types, who also engaged in a cross-Eurasian exchange network involving the southern Urals, the Roman, Indian, Kushan, Parthian, Han and steppe world, and possibly also holding strategic positions in the area. Examples include elite graves in the Zaravshan valley (Kok Tepe and Orlat), Fergana basin, and Tillya-tepe in the Shebergan valley in Bactria, which also drew on a rich Greco-Bactrian legacy. Although the grave architecture at Tillya-tepe is poorly documented, its post-*quem* date of 1<sup>st</sup> c. CE based on coins, helps dating the Orlat, Kok-tepe, and Tulkhar sites they had clear links with (65).

Assemblages from the Fergana and Beshkent valleys show – just as those in the Zaravshan valley – strong influence from the southern Urals and Volga-Don basin. As demonstrated, diagnostic Sarmatian objects, including long swords, daggers and belt buckles, spread from this area upstream along the Amu Darya, via the Zaravshan river into the Fergana Basin (§ 7.5, § 7.6 and § 7.7). In the absence of a refined chronology for niche grave practices along this route, it is not possible to confirm a similar eastward transmission for these grave types too. Even when assuming the Zaravshan niche graves to be the earliest and resulting from dispersion from the southern Ural, we still need to account for an absence of such practices for about 1500 km as the crows fly between both areas. However, the later chronology for niche grave traditions in the Talas valley and Issyk-Kul lake area (c. 1<sup>st</sup>–4<sup>th</sup> c. CE) support an eastward transmission. Both areas form the easternmost end of a

distribution area of lateral and perpendicular niche grave practices.

In the Beshkent valley, prestigious goods from Indian/Kushan and Sarmatian context concentrate in lateral niche graves. In the Fergana valley, there is evidence for precious items from Han context, like bronze mirrors and silk, and technologies as bone endplates for reinforcing bows originating in the northern steppes and also seen in the Turfan Basin. Unfortunately, we do not understand whether the occupants of different grave types had differential access to these objects.

Some regions are less well investigated and could bias our understanding of the development of niche grave practices, including the Tashkent area, the middle Syr Darya and the coastal areas around the Aral and the Caspian seas. No niche graves were so far discovered in the Central Kyzylkum desert.<sup>68</sup>

Although it is unclear what motivated the use of niche grave practices in the Syr Darya and Amu Darya basins, there is at least one constant in their emergence during the Bronze and Early Iron Age: mobility. That is, such traditions emerged under increasing influence of pastoralist steppe cultures, first in the contact zone with farming cultures, then ever deeper into the northern steppe. These pastoralists lived in symbiosis with settled farmers, who from the Bronze Age onward had initiated a strong urbanisation wave in the areas, which in the Early Iron Age became known as Sogdiana, Bactria and Fergana. The crop farmers living in the irrigated oases and cities of the Fergana and Zaravshan valleys, possibly relied on their mobile pastoralist neighbours to expand their network across Inner Eurasia in exchange for goods the latter did not produce.

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<sup>68</sup>Gorbunova 2001, 127.

# 8 The Tianshan Mountains and the Tarim Basin

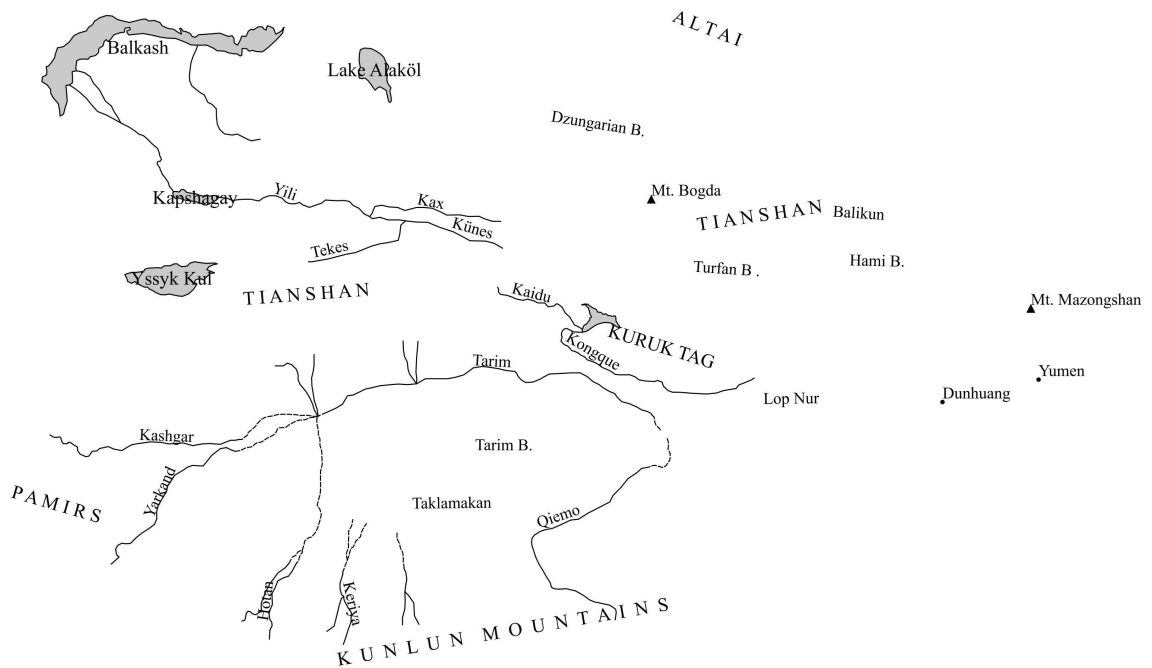
## 8.1 Introduction

This chapter discusses the western Tianshan Mountains drained by the Yili, the central Tianshan Mountains near Urümqi, the Bogda mountains and Balikun grasslands in the eastern Tianshan, and the Tarim Basin (Fig. 8.1). After extensive literature research I noted that the Altai region and Dzungarian Basin are virtually devoid of niche graves, so these are not included. The Turfan Basin itself is studied in Parts III and IV.

### 8.1.1 Physico-geographical context

The Tianshan mountains form the main artery along the Tarim, Turfan and Hami basins, supporting large groups of pastoralists, and guiding them westwards into Inner Eurasia and eastwards across the steppe or through the Hexi corridor. Its many valleys opened up the seemingly isolated basins to the outside world. In the Tarim, Turfan and Hami basins, crop farming was possible next to limited herding in the oases or through vertical transhumance. In the mountain areas abundant pasture supported mainly pastoralism. There was a strong symbiosis between the oases people and those roaming the mountain valleys.

The Yili rises in the western Tianshan and is formed by the Kax (Kashi), Künes (Gongnaisi) and Tekes (Tekesi) rivers. After c. 1400 km it flows westward into Lake Balkash. Abundant rainfall in the Yili Basin provides excellent pastureland which has supported herding for over three millennia. Pastoralism is still the basis of the economy here today. In winter people live in the river valleys, while in spring, summer and autumn they lead their animals into seasonal pasturelands. Contrary to the dry desert oases of the Tarim and Turfan basins, the much wetter conditions of the Yili valley create bad preservation conditions. Organic material quickly decays, and metal finds are badly corroded.



**Figure 8.1** – Map of the Tianshan Mountains and adjacent drainage basins.

The Central Tianshan mountains were strategically important providing access in all directions: westwards to the Yili Basin, southwards to the Turfan and Tarim basins, northwards to the semi-desert of the Dzungarian Basin and Altai Mountains, and eastward via the northern foothills of Bogda mountains towards the Balikun grasslands. Via the Alagou valley one could reach the vast pastures of Bayinbuluke in the upper Kaidu basin or continue towards lake Boston.

The easternmost Tianshan mountains comprises the Balikun range with the eponymous lake and the Hami Basin to the south of it. From ancient times, the Hami oasis was suited for crop farming and mainly the terrain of farmers. Pastoralists dwelled on the northern and southern slopes of the mountains. In summer, they pastured their herds in the Balikun grasslands north of the mountains, but in winter, they had to come down to the southern and southeastern slopes.

The Tarim Basin is bound in the north by the Tianshan and Kuruk Tag Mountains, the Kunlun and Altun Mountains in the south, the Pamirs in the west and the Lop Desert in the east. The Taklamakan Desert covers most of the basin which was once drained by a 2000 km long Tarim River. The latter rises in the Pamirs and was originally fed by melting water descending from the surrounding mountains forming various small rivers. These now disappear into the desert forming deltaic fans and oases. The oasis centring on the Lop Nur Lake at the eastern end of the Tarim Basin used to be fed by the now largely dried up Tarim, Kongque and Cherchen rivers. Its hydrography stands symbols for the changed

landscape of the Tarim Basin, which was once much more humid with waterways connecting north and south. Sven Hedin significantly compared the Tarim arms to a pendulum and the Lop Nur to the weight at the end of it, that was sometimes in the southern part of the desert and sometimes in the northern part.<sup>1</sup> Several mountain passes with good pastures connect the Tarim Basin with its neighbours in all directions.

The Turfan Basin, whose physico-geographical context is described in Chapt. 19, had close relations with the area north of the Bogda range, where forests and grasslands provided good summer pasture for the Turfan Oasis people. The archaeology of the central Tianshan mountains and the area north of Bogda is closely connected to that of the Turfan Basin, as evidenced from archaeological remains and historical sources (§ 8.4; 81).

### 8.1.2 Archaeological context and historical sources

The modelling of archaeological cultures and historical narratives deeply affect research in northwestern China, and therefore an outline of this interpretive framework is given here.

It is generally assumed that this area felt a strong influence from the (north)west, first during the Bronze Age (c. 2000–1000 BCE) from Andronovo cultures and Indo-European groups, and subsequently in the Early Iron Age (c. 1000–100 BCE) from Scythic cultures.<sup>2</sup>

By the Early Iron Age, archaeological cultures with strong regional identity had crystallised, including the Yili River culture (c. 800–0 BCE) in the western Tianshan area, the Subeixi culture (c. 600 BCE–200 CE, see 279) in the Turfan basin and adjacent mountain areas, the Chawuhugou culture (c. 1000–500/100 BCE) in the Northern Tarim Basin and its southern variant the Zhagunluk culture (c. 1000–100 BCE).<sup>3</sup>

The situation in the easternmost Tianshan area is different as eastern influence via the Hexi Corridor is already recorded for the Bronze Age, when the Tianshan Beilu culture was influenced by the Siba culture (c. 1950–1550 BCE).<sup>4</sup> The Tianshan Beilu culture, which emerged in the Hami Oasis c. 2000 BCE, was gradually replaced by the Yanbulake culture between c. 1000 BCE and 200 BCE. Between the early 8<sup>th</sup> and the late 3<sup>rd</sup> c. BCE, pastoralist cultures also developed in the Balikun grasslands, with assemblages similar to

<sup>1</sup>Hedin 1904-1907, 355–356.

<sup>2</sup>For a recent overview of archaeological cultures in Xinjiang, see Guo Wu 2012; Han Jianye 2007b; Liu Xuetang 2011; for earlier and western literature, see also Debaine-Francfort 1988; Debaine-Francfort 1989; Debaine-Francfort et al. 2001; Chen et al. 1995; Mallory et al. 2000; For more literature on the ‘Scythic’ Era, see Christian 2006 [1998], 123–162.

<sup>3</sup>The term ‘Chawuhugou culture’ was adopted in 1988, see Zhongguo Shehui Kexueyuan Kaogusuo Xinjiang Dui et al. 1988; for its chronology and regional variants, see Chen Ge 2001; Zizhiqu Wenwu Pucha Bangongshi et al. 1995.

<sup>4</sup>Li 2002.

the Tianshan Beilu and Yanbulake cultures.

The archaeology of the late Early Iron Age and early historic period, is deeply affected by historic interpretations, and although my primary sources are archaeological relicts (4), some of these historical narratives need highlighting.

Chinese sources contain valuable information on the ‘Western Regions’, notably for the period after 2<sup>nd</sup> c. BCE when parts of present-day Xinjiang were under control of the Western Han Dynasty (206 BCE–9 CE). The first reports come from the Western Han envoy Zhang Qian (—died 114 BCE).<sup>5</sup> The *Hanshu* further describes the multiple states and tribes in the Western Regions that covered the area of the Hexi Corridor, the Turfan and Tarim basins, the Tianshan mountains and the steppes.<sup>6</sup>

The most influential narratives relate migrations of the Saka, Yuezhi, Wusun, and Xiongnu. It is assumed that, with these migrations, western influence was countered by an increasing eastern influence. Based on Chinese records, most assume the Yuezhi originated in the Hexi Corridor. Both the *Shiji* and *Hanshu* refer to Zhang Qian who reported that the Yuezhi, a powerful group of 100,000 to 200,000 arched warriors, lived between Dunhuang and Qilian (not necessarily the present Qilian Mountains). Thereafter (in the second quarter of the 2<sup>nd</sup> c. BCE), they were defeated by Xiongnu ruler Maodun and fled westward, passing Dayuan (Fergana) and subjugating Daxia (Bactria). Zhang Qian encountered them (in c. 128 BCE) on the northern banks of the Gui River (the Amu Darya), where their capital and royal court was established. A smaller group of Yuezhi (the ‘Small Yuezhi’) were unable to leave and sought protection among the Qiang tribes of Nanshan.<sup>7</sup> Zhang related that, after the Yuezhi were defeated by the Xiongnu and fled westwards, they attacked the Sai (Saka) who had to flee southwards when the former occupied their lands (the Yili Basin and the Issyk kul Lake area) (c. 130 BCE), while the Yuezhi were themselves expelled by the Wusun. The latter sought revenge for an earlier defeat by the Yuezhi in their shared homeland between Dunhuang and Qilian.<sup>8</sup>

Archaeological relicts found along the presumed migration routes of these people are thus interpreted within this ethno-historic narrative. Mounded graves in particular have, as in Inner Eurasia, been associated with the presence and movements of pastoralists. The Tianshan area is dotted with mounds and the Yili Basin alone counts tens of thousands of

<sup>5</sup>See the annotated translation of Chapt. 61 ‘The Memoir on Chang Ch’ien and Li Guangli’ in *Hanshu* in Hulsewé 1979, 207–238.

<sup>6</sup>See the annotated translation of Chapt. 96 ‘The memoir on the Western Regions’ in *Hanshu* in Hulsewé 1979, 71–203.

<sup>7</sup>Sima Qian Western Han, chapt. 123: The Account of Dayuan; Sima, Qian (ca. 145–ca. 86 BCE) [1961] 1993, 234; *Hanshu*, chapt. 96A: The state of the Ta Yüeh-chih; Hulsewé 1979, 120–121.

<sup>8</sup>Hulsewé 1979, 214–217; for the Yuezhi, see Benjamin 2002.

mounded graves from different periods. For long, early mounded graves in the Yili Basin have been subject to a bipartite Saka/Wusun ethno-chronological scheme (7<sup>th</sup> c. BCE–3<sup>rd</sup> c. CE), which was integrated within the dynastic chronology of the Zhou (1050–221 BCE), coinciding with the Saka period, and the Han (206 BCE–220 CE) coinciding with the Wusun period. The complexity of fitting archaeological assemblages into such ethno-chronological scheme, is illustrated by the term ‘Saka-Wusun’ culture introduced by Bernshtam.<sup>9</sup>

Chinese sources describe the quickly shifting alliances between the Han and the Xiongnu in the western territories. Archaeological evidence ascribed to these events, is believed to be no older than 100 BCE, about the time Zhang Qian died. Historic interpretations situated the states of Nearer and Further Jushi in the Turfan Basin and the area north of Bogda Mountains. Jiaoke in the Turfan Basin was associated with the seat of Nearer Jushi, and the capital of Further Jushi in Wutu north of the mountains, with Jimusai’er. Likewise, the state of the Jushi commandant was associated with Gaochang in the Turfan Basin, and the state of the Further Jushi chief with Qitai. Both Qitai and Jimusai’er were located north of the mountains.<sup>10</sup> From an archaeological perspective, areas north of the mountains were closely related to that of the Turfan Basin (§ 8.4).<sup>11</sup>

For the eastern Tianshan area too, scholars used Chinese historical records arguing that pastoralist tribes as the Yuezhi and the Wusun dwelled here. From the Western Han (206 BCE–9 CE) onward, it was thought, the area came under control of the Xiongnu, becoming one of their main activity centres during the Eastern Han (25–220 CE).<sup>12</sup>

Between the 3<sup>rd</sup> and 4<sup>th</sup> c. CE, numerous oases in the Tarim and Turfan basins towns merged into larger kingdoms, exhibiting Indian, Persian, Central and east Asian influences. The latter originated from the Kushan, Parthian and Sassanian empires and local kingdoms and city-states west of the Pamirs, reflecting the new and complex network of the 3<sup>rd</sup> and 4<sup>th</sup> c. CE. The Eastern Han, and its successors the Wei (220–265) and Western Jin (265–316) based in northern China, continued to exercise power in these areas.<sup>13</sup> Chinese sources as the Weilüe inform us of the configuration of the kingdoms in the western territories and the routes that led to them.<sup>14</sup> Documents in other languages than Chinese, including Sogdian and Kharoṣṭhī provide additional and valuable insights in the life of their inhabitants.<sup>15</sup>

<sup>9</sup>Bernshtam 1952; in Abdullaev 2007, 75–78; see also Parzinger 2011 [2006], 824.

<sup>10</sup>Hulsewé 1979, 183–203.

<sup>11</sup>Guo Wu 2012, 57–107.

<sup>12</sup>Ren Meng 2011, 252.

<sup>13</sup>Hansen 2012, 42.

<sup>14</sup>Yu Huan (3rd c. CE) 2004, notes 5.6.

<sup>15</sup>Vaissière 2004; Whitfield et al. 2004.

## 8.2 The Yili Basin (c. 900 BCE–300 CE)

### 8.2.1 Introduction

Research on Early Iron Age remains in the Yili Basin began in its middle reaches between 1954 and 1960, following the construction of the Kapshagay Hydroelectric Power Plant.<sup>16</sup> Research in the upper reaches started in the 1960's and gained momentum in the last decades due to rescue excavations spurred by large-scale hydro-power projects of Qiabuqihai in the Tekes valley and Jilintai in the Kax valley.<sup>17</sup>

The chronology of Early Iron Age sites in the Yili Basin is not well established, despite attempts to set up typologies.<sup>18</sup> Therefore, I selected a few sites with better defined chronologies, to reconstruct the development of niche grave practices in the Yili Basin. I selected Qiongkeke I to represent the Early Phase (900 BCE–500 BCE), Sodungbrak for the Middle Phase (500 BCE–300 BCE), and the Kapshagay site cluster for the Late Phase (300 BCE–100 CE).

### 8.2.2 The Early Phase (c. 900 BCE–500 CE)

A large number of lateral niche graves have been found in the upper Yili basin, clustering in the valleys of its tributaries the Kax, Tekes and, to a lesser degree, the Künes. They are found side-by-side with other grave types and are dated c. 900 BCE–300 CE. Niche graves continued to be used after this period in combination with different assemblages, but this study only focuses on their emergence and relation with the Turfan Basin.

Reviewing the excavation reports demonstrated that lateral niche graves were excavated in the following areas. In Nileke County, in the upper Yili and Kax valleys, they were found at Sodungbrak, Qiongkeke Cemetery I, Qirentuohai, Tielekesayi, Yiji Dianzhan, Jialekesikayinte.<sup>19</sup> Other concentrations were found in the Tekes valley: in the eponymous county at Qiabuqihai, Kuokesuxi II and Yeshikelieke, in Zhaosu County at Kalasu, and in

<sup>16</sup>Akischev et al. 1963; Aqishefu et al. 2013; Dosymbaeva 2007.

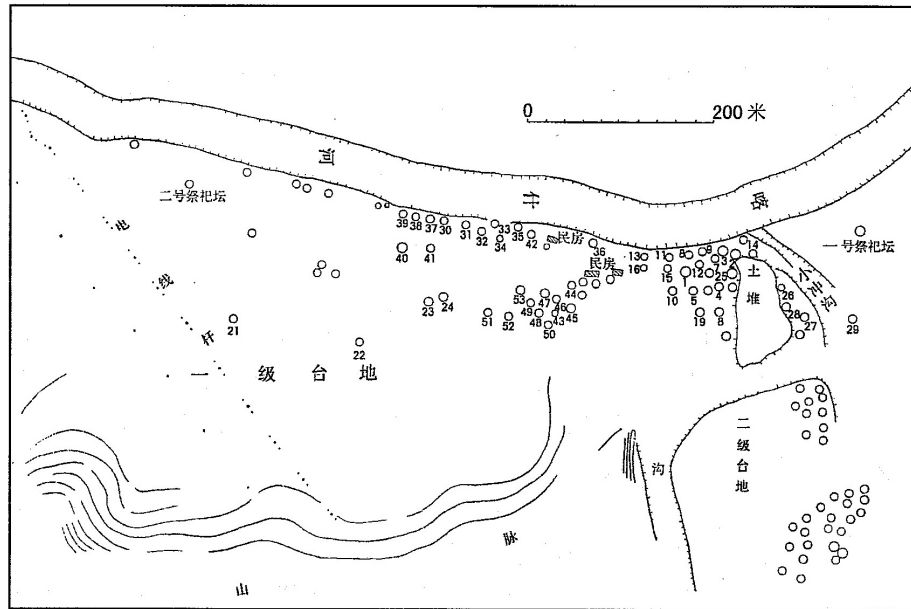
<sup>17</sup>Abduressul Idriss 伊弟利斯·阿不都热苏勒 et al. 2014.

<sup>18</sup>Wang Linshan 2012; Han Jianye 2007b; Guo Wu 2012; for typologies of metal artefacts, see Mei 2000; for a discussion on niche graves in particular, see the in Part I discussed hypotheses of Han Jianye 2007c.

<sup>19</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1988a; Xinjiang Wenwu Kaogu Yanjiusuo 1999a; Xinjiang Wenwu Kaogu Yanjiusuo 2002a; Xinjiang Wenwu Kaogu Yanjiusuo 2014b; Xinjiang Wenwu Kaogu Yanjiusuo 2004d; Xinjiang Wenwu Kaogu Yanjiusuo 2014c; Xinjiang Wenwu Kaogu Yanjiusuo 2012b; Xinjiang Wenwu Kaogu Yanjiusuo 2012c; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2006; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014b; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014a.



Gongliu County at Shankou Shuiku.<sup>20</sup> Smaller numbers were found in the Kūnes valley at Tiemulike and 71-tuan Lianyutang in Xinyuan County.<sup>21</sup> Just north of the upper Yili valley across the Borohoro Mountains, niche graves were found at Wushibulake in Jinghe County in Bo'ertala Mongol Autonomous Prefecture.<sup>22</sup>



**Figure 8.2** – Map of Qiongkeke I (After Nileke xian Qiongkeke yihao mudi kaogu fajue baogao, 252, Fig. 2)

The earliest known niches graves in the Yili Basin were found at Qiongkeke I, located on a primary terrace on the southern bank of the Kax. Two stone platforms with a diameter of 12.75 respectively 14 m together with smaller earth-and-stone mounds distributed along the river, represent a ritual precinct (Fig. 8.2). Rock art with depictions of ovicaprids was found north of the river. Furthermore, 55 graves were excavated.<sup>23</sup>

A wood sample from a niche grave (M11) yielded a radiocarbon date of 984–830 cal. BC. Another wood sample from a coffin in a cist grave (M52) yielded a date of 1040–906 cal. BC. A date of c. 500 BCE was suggested for the upper bound. The dates for the lower bound (c. 900 BCE) need some caution, since we only have two samples and need to consider the ‘old wood effect’. Nevertheless, the fact that Qiongkeke I cemetery cuts an older layer with an Andronovo settlement, supports an early date.

<sup>20</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2014f; Xinjiang Wenwu Kaogu Yanjiusuo 2014d; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014f; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014d; Xinjiang Wenwu Kaogu Yanjiusuo 2012d; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2005; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014e; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014c; Xinjiang Wenwu Kaogu Yanjiusuo 2006; Xinjiang Wenwu Kaogu Yanjiusuo 2014a.

<sup>21</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1988b; Xinjiang Weiwu'er Zizhiqu Bowuguan Wenwudui 1991.

<sup>22</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2009.

<sup>23</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2002a; Xinjiang Wenwu Kaogu Yanjiusuo 2014b.

Similar evidence of niche graves cutting an Andronovo layer was found at Ayousaikou in Xinyuan County in the Kūnes valley. Most remains here are attributed to the Andronovo culture, except for two niche graves. Since one niche grave cuts an Andronovo house foundation, and the other one is located nearby but outside of it, the graves have been attributed to the Bronze Age, slightly postdating the house remains.<sup>24</sup> Unfortunately no grave goods were left in the niche graves. However, based on the western body and northern niche orientation, I suggest a similar timeframe as for Qiongkeke I.

The Qiongkeke I and Ayousaikou evidence lead me to tentatively situate the earliest lateral niche graves in the upper Yili Basin around 900 BCE, immediately after the Bronze Age. The fact that remains of the Andronovo culture – or descendants as the Karasuk culture – are relatively late in this area, supports this idea. The lower bound of c. 500 BCE for Qiongkeke demonstrates that lateral niche grave practices were well developed by that time in the Yili Basin.

The mounds on the Qiongkeke I graves feature considerable variety, but I consider them as one system (92). They have a diameter of 10–15 m and a height of 30–50 cm, and are constructed of stone and earth with a circular stone enclosure embedded at the base. Stones are piled up on top or along the contours of the grave mouth, or both (Fig. 8.3).

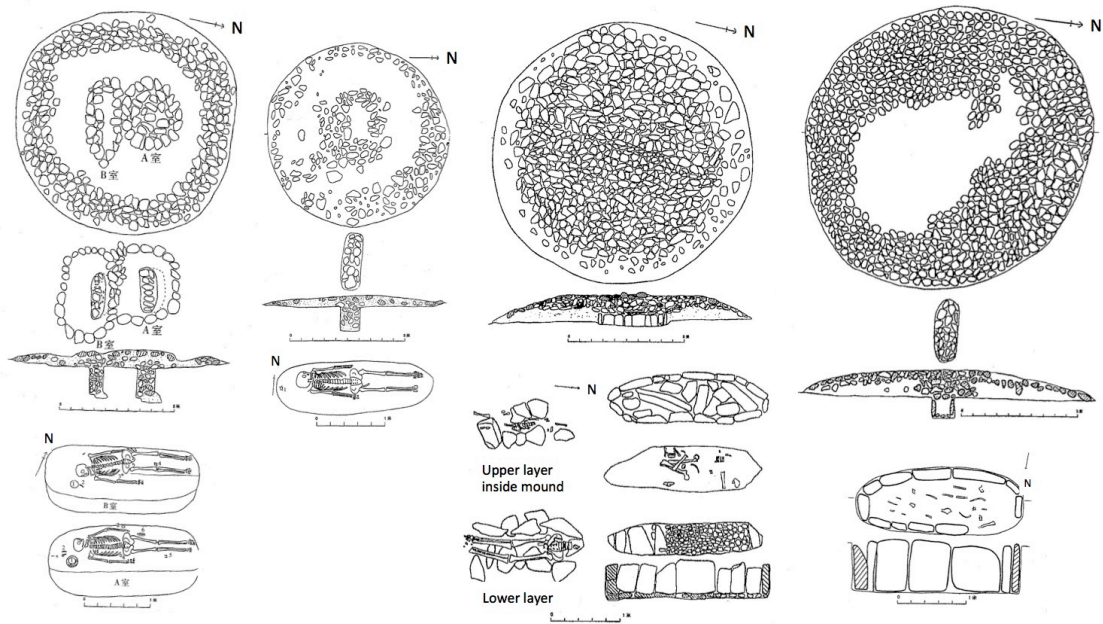
The subsurface structures show much variation including stepped lateral niche graves with northern niches (23), shaft graves (10), cist burials (5), surface chambers constructed of (slab)stone (3) and a cist grave with wooden coffin (1). The mound covers generally only one chamber, sometimes two, but rarely three or none at all (Fig. 8.3). More than one grave (type) is sometimes found underneath the same mound. A western body orientation and single extended burials prevail, with some secondary and flexed burials.

An average of three objects per grave was found at Qiongkeke I. Most pottery is hand-molded, relatively high-fired, covered with a red slip, and polished. One third is painted, i.e. fully covered with painted decorations organised in broad bands featuring triangles, zigzag lines, net motifs, coloured faces, hatching and rhomboid patterning. Pottery is mostly round-bottomed, sometimes flat-bottomed, and rarely ring-footed. Handles are rare, but some have one handle. Round-bottomed long-necked jugs and cups prevail, but there are also bowls, pots, basins, and occasionally jars with long narrow necks or vessels with tubular spouts.

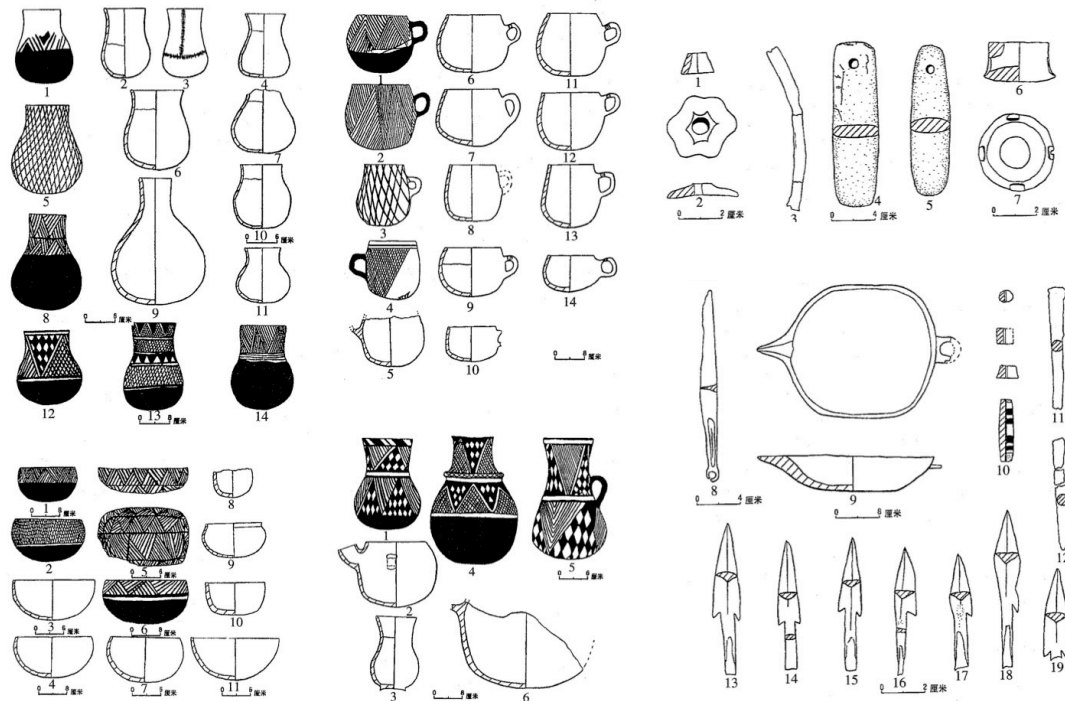
A round-bottomed long-necked pottery jug with incised imitation seams resembles vessels from Jiaohé Goubéi in the Turfan Basin, whereby horn parts are sewn together (Fig.

<sup>24</sup>Ruan Qirong (Xinjiang Wenwu Kaogu yanjiusuo) 2013.

8.4, top left).<sup>25</sup> There are 13 iron knives, 2 iron awls, 1 bronze knife, bone arrowheads and ornaments. Knives accompany sheep bones placed in a bowl (Fig. 8.4).



**Figure 8.3** – Different grave types, Qiongkeke I (After Nileke xian Qiongkeke yihao mudi kaogu fajue baogao, 258, Figs. 91 and 92).



**Figure 8.4** – Grave goods, Qiongkeke I (Id., 286, 288, 290, Figs. 57, 58, 59, 60 and 61).

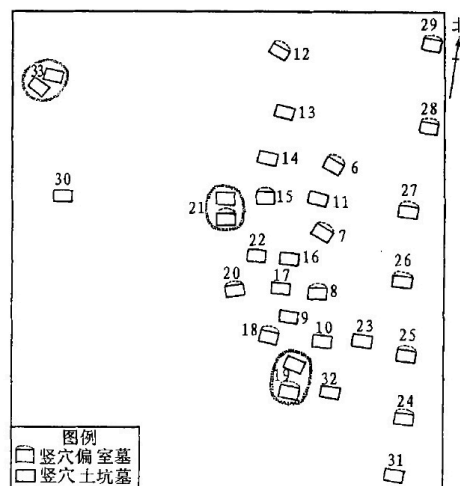
<sup>25</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2014b, 287, Fig. 58.

### 8.2.3 The Middle Phase (c. 500–300 BCE)

Sodunbrak (Suodunbulake) and the early remains of Qirentuohai are representative for the middle phase of niche grave practices in the Yili Basin. These cemeteries were in use after Qiongkeke I was abandoned.

The graves of Sodunbrak are distributed at the outlet of the eponymous stream on the southern bank of the Yili on the northern foothills of the Wusun mountains in Chabucha'er County. About 33 (M1–M33) of the more than 120 graves are excavated.<sup>26</sup> Based on object typologies and three radiocarbon dates from wood samples, they were dated c. 500–300 BCE.<sup>27</sup>

Two clusters were distinguished based on differences in mound type and distribution pattern. The cluster south of Sodunbrak village counts 80 graves. They feature earth-and-stone mounds with a diameter of 3–10 m, with an embedded circular stone enclosure, and sometimes with another stone enclosure or heap on the grave mouth. They show a linear distribution from south to north. The northern cluster counts 40 graves. The mounds are predominantly made of stone mixed with earth and measure 3–7 m in diameter. They show a random side-by-side distribution. Out of 33 excavated graves, 28 (M6–M23) belong to the southern cluster and 5 (M1–M5) to the northern cluster.



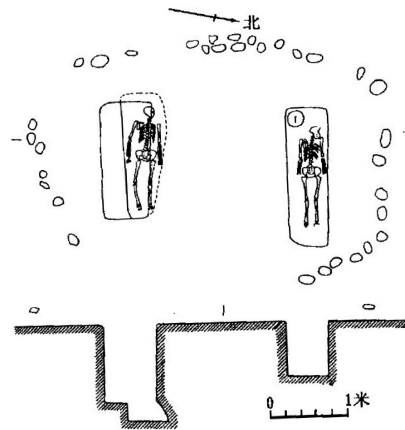
**Figure 8.5** – Map of the southern cluster at Sodunbrak, Yili Basin (After Xinjiang Wenwu Kaogu Yanjiusuo, 1999, 17, Fig. 2).

There are shaft graves (13) and lateral niche graves (16). Mounds cover one and occasionally two graves (M19, M21 and M33) (Fig. 8.6). Northern niches are common. They are either sealed with roundwood after which the entry pit is backfilled with pebble stones,

<sup>26</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1988a; Xinjiang Wenwu Kaogu Yanjiusuo 1999a; Xinjiang Wenwu Kaogu Yanjiusuo 1995; see also Huang Wenbi 1983.

<sup>27</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1999a, 14.

or not sealed in which case niche and entry shaft are backfilled with stone. There is one empty grave and one mound without a grave pit. Extended burials on the back prevail. There are some secondary or disturbed burials. There is one joint burial of a man and a woman in shaft grave M31. Two mounded graves (M16 and M32) cover each one shaft and one niche grave, containing a man and a woman respectively two women. A western body orientation is common, except for one northern orientation in M5.



**Figure 8.6** – Burial M19, with a shaft and a niche grave underneath one mound, Sodunbrak (After Xinjiang Wenwu Kaogu Yanjiusuo, 1999, 21, Fig. 9).

Few graves contain sheep bones and in at least one niche grave cattle bones including tail vertebrae were found. The people of Sodunbrak practiced sheep herding, in combination with some crop farming (cf. grinding stone).<sup>28</sup>

The graves contain 1–4 objects per grave and three graves have none at all. Pottery is generally unpainted, sand-tempered red ware covered with a red slip and polished. Some painted pottery was found in shaft and niche graves. Painted decoration features multiple bands with inverted triangles, pine needles and mountain motifs. Both painted motifs and vessel form are similar to samples from Semirechye.<sup>29</sup> Round-bottomed ware prevails next to some flat-bottomed examples. Common vessel forms are bowls and basins, and there are also round-bottomed long-necked jugs sometimes with one handle, single handled drinking cups, and jugs with tubular spouts. There are more iron (8) than bronze items (2), and iron occurs together with painted pottery. Objects include an iron knife, awl and sword, a pottery spindle, stone roundel, bronze hairpin, earring, and a bone awl.

The other site representative of the Middle Phase is Qirentuohai on the northern banks of the Kax. The early remains here show continuity with Qiongkeke I.<sup>30</sup> However, at

<sup>28</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1999a, 16.

<sup>29</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1995, 15.

<sup>30</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2004d; Xinjiang Wenwu Kaogu Yanjiusuo 2014c.

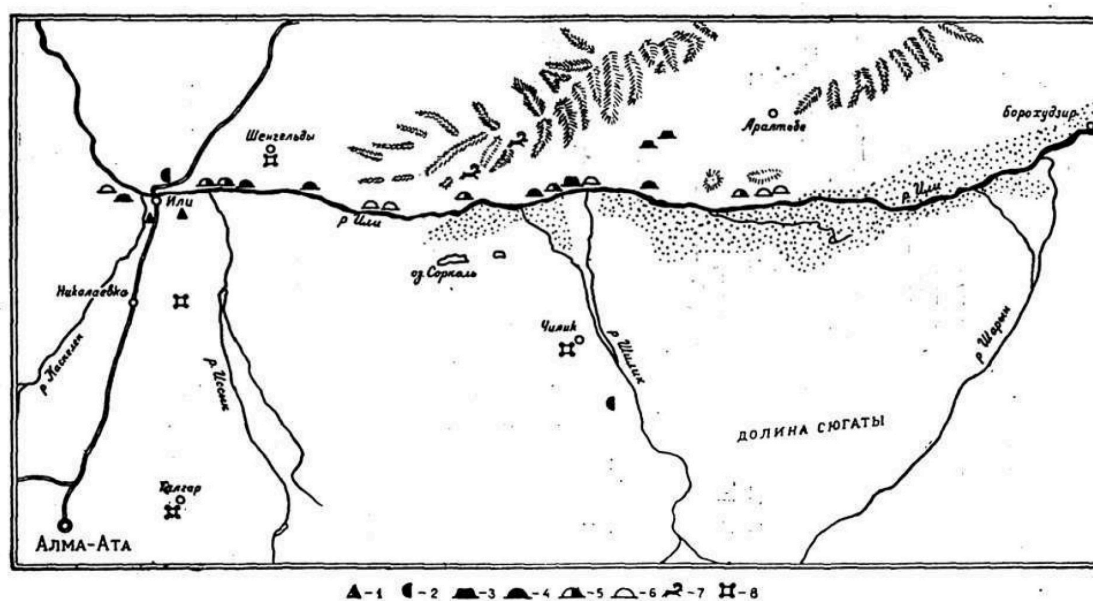
Qirentuohai shaft graves outnumber niche graves 3 to 1, whereas at Qiongkeke I, niche graves outnumbered shaft graves by about 2 to 1.

In conclusion, the following developments characterised the Middle Phase. The linear grave distribution at Qiongkeke I was replaced by a random distribution in at least one of the Sodunbrak clusters. Lateral niche and shaft graves are distributed side-by-side, while other types like cist burials are not seen anymore. At Qirentuohai, shaft graves outnumber niche graves 3 to 1, illustrating the decreasing importance of the latter. Adding two graves underneath one mound as at Qiongkeke I, is a practice which persisted at Sodunbrak and Qirentuohai. The early graves of Qirentuohai show a strong continuity with those from Qiongkeke I, while more soil and less pebblestones are added to the burial mounds at Sodunbrak, but this could be inspired by the local environment. Single extended burial with a western body orientation prevail at both sites, as in the Early Phase.

There was a gradual replacement of painted with unpainted, round-bottomed with flat-bottomed pottery, and a sudden increase of iron objects at the expense of bronze. Grave goods remained scarce but knives were a common addition to the few pottery. Sheep sacrifice was common at Qirentuohai, but decreased at Sodunbrak. Round-bottomed long-necked jugs, single handled drinking cups, bowls and basins popular at Qiongkeke I were still common in the middle phase, even though bowls and basins now took a larger share. Vases with tubular spouts appeared from the earliest phase, and the bottle-form with elongated neck only in the latest stage.

### 8.2.4 The Late Phase (c. 300 BCE–100 CE)

Another concentration of mounded lateral niche graves was found along the middle Yili's right bank in present-day southeast Kazakhstan.<sup>31</sup> In 1954, and between 1957 and 1960, several sites were excavated prior to the construction of the Kapshagay Hydroelectric Power Plant.<sup>32</sup> Many sites are now submerged by the 100 km long Kapshagay Reservoir. Akishev and Kushayev interpreted the early mounded shaft and niche graves in this area within the ethno-historical framework of the Saka and the Wusun (7<sup>th</sup> c. BCE–3<sup>rd</sup> c. CE) (Chapt. 2).



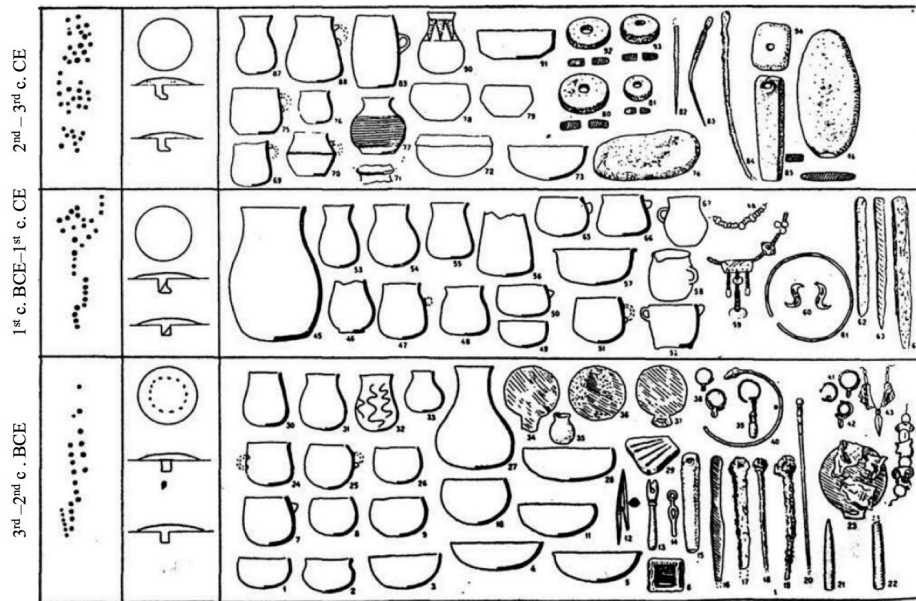
**Figure 8.7** – Map of archaeological remains on the right bank of the Yili River. 1) Neolithic sites and chance finds; 2) Bronze Age chance finds; 3) Saka Period burials (6<sup>th</sup>–4<sup>th</sup> c. BCE); 4) Early Wusun Period burials (3<sup>rd</sup>–2<sup>nd</sup> c. BCE); 5) Middle Wusun Period burials (1<sup>st</sup> c. BCE–1<sup>st</sup> c. CE); 6) Late Wusun Period burials (2<sup>nd</sup>–3<sup>rd</sup> c. CE); 7) rock art; 8) medieval fortification. (Adapted from Akishev and Kushayev 1963, 141)

The first lateral niche graves in this area emerged during the Early Wusun period (c. 300–100 c. BCE) at Chulak-Dzhigide I (3 out of 7 excavated graves), Chulak-Dzhigide I named ‘Burial Site no. 17’ (2/2), and Kalkan IV (5/6). Niche graves gained importance during the Middle Wusun Period (100 c. BCE–100 c. CE), as evidenced from the sites Utegen 1 and 2 (4/11), Taigak 1 (8/16), Kalkan 1 (7/14) and Altyn-Emel 4 (4/19). Niche graves quickly disappeared during the Late Wusun Period (c. 100–300 CE), though they were occasionally seen at Kapshagay III (5/30).<sup>33</sup> The distribution of sites attributed to the Early, Middle and Late Wusun period is shown in Fig. 8.7.

<sup>31</sup>Akishev et al. 1963; and Dosymbaeva 2007, 93.

<sup>32</sup>Akishev et al. 1963; Aqishefu et al. 2013; for the archaeology of the Semirechye area and the ‘Wusun’, see also Dosymbaeva 2007.

<sup>33</sup>These figures are based on Akishev and Kushayev 1963, 254–255, Table 1.



**Figure 8.8** – Grave assemblage, Yili Basin (c. 300 BCE–300 CE) (After Akishev and Kushayev 1963, Table 11).

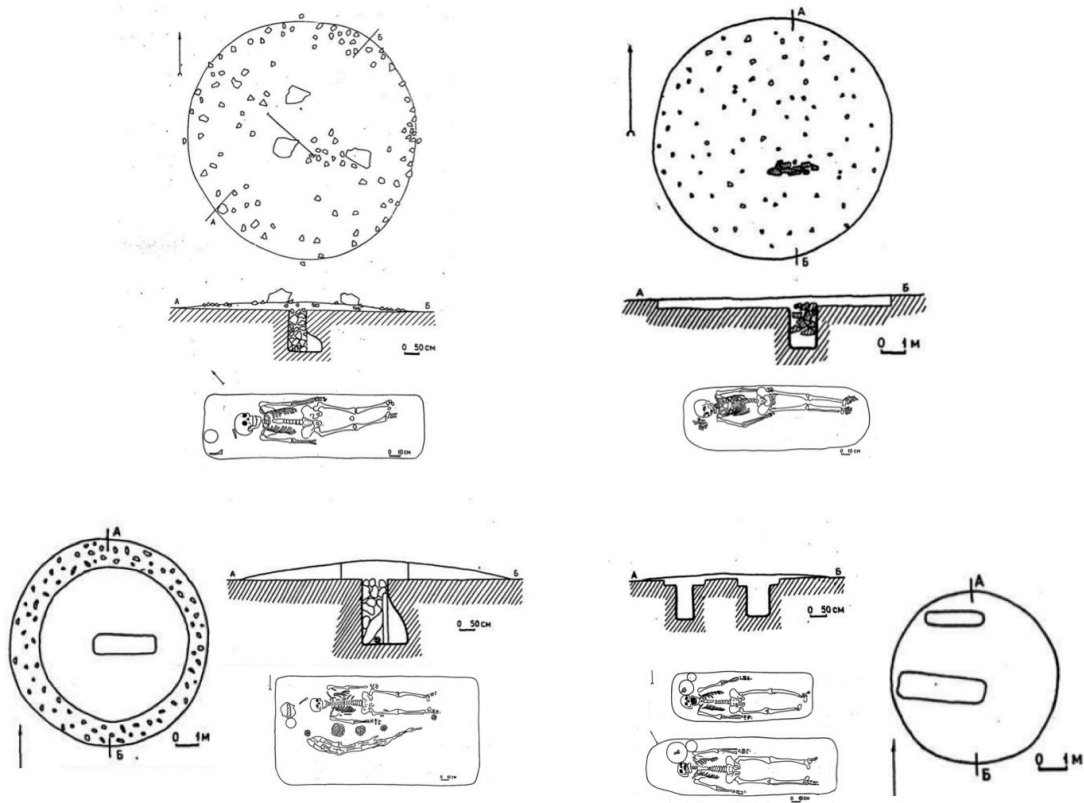
The development of niche grave practices of the Kapshagay group is discussed on the basis of the typological schemes provided by Akishev and Kushayev. As niche graves only occurred during the 3<sup>rd</sup> c. BCE–3<sup>rd</sup> CE, I will focus on this period. An Early, Middle and Late Phase was distinguished, characterised by the following features (Figs. 8.8 and 8.9):

### Early Wusun period (3<sup>rd</sup>–2<sup>nd</sup> c. BCE)

1. Linear distribution of mounds from N to S in groups of five to six.
2. Circular stone enclosure along the perimeter of the mound and on top of it.
3. E-W oriented shaft graves, covered with roundwood and stones.
4. Pottery often round-bottomed, made of sand-tempered coarse ware.
5. Main vessel forms: high-necked jar, bowl with flaring mouth, half-ball shaped bowl with wide mouth, handled jar, made with manual slab forming techniques. Pottery ware with hooked and decorated handles are occasionally seen.
6. In comparison with the Saka period (7<sup>th</sup>–3<sup>rd</sup> c. BCE), iron items are already present but still limited in number. Sheep bones are present in 84% of the graves.<sup>34</sup>

<sup>34</sup>Aqishefu et al. 2013, 148.





**Figure 8.9** – Grave types middle Yili Basin: Utegen (top) and Taigak (bottom) (Adapted from Akishev and Kushayev 1963, 187, Fig. 26 (Utegen II, K67); 186, Fig. 25 (Utegen I, K5); 191, Fig. 28 (Taigak I, K2b); 192, Fig. 29 (Taigak I, K4)).

### Middle Wusun period (1<sup>st</sup> c. BCE–1<sup>st</sup> c. CE)

1. Part of the graves show a random distribution, another part a linear distribution in groups of three to four graves.
2. In most graves, circular stone enclosures are not arranged on top of the mound. Occasionally, such enclosures are embedded or situated underneath the mound.
3. Niche graves with southern niches are the main grave type; occasionally the round-wood sealing of the grave mouth was preserved.
4. Most pottery is flat-bottomed with an inward or outward flaring mouth. Tab handles are molded and attached. Pottery is fine, thin-walled and high-fired, indicating a considerable advanced level of pottery manufacturing, next to traditional clay modelling.
5. Iron items outnumber bronze items.
6. Sheep bones are rare.<sup>35</sup>

<sup>35</sup>Aqishefu et al. 2013, 166–167.

### Late Wusun period (2<sup>nd</sup>–3<sup>rd</sup> c. CE)

1. All graves are randomly distributed and linear distributions are absent.
2. Burial rites, burial structure and dimensions are all very similar. Circular stone enclosure are not arranged anymore on top of the mound, and rarely underneath. Shaft graves are almost the only grave type, and no roundwood covers the grave mouth.
3. Grave goods are very similar. Iron items prevail, but there are also grinding stones. Pottery is mostly flat-bottomed, thin-walled and of relatively high quality. Some vessels have tab handles. Relatively fine-tempered pottery ware covered with red or brown slip.<sup>36</sup>



**Figure 8.10** – Surface structure of Kurgan 70, Kalkan 1, Yili Basin (After Akishev and Kushayev 1963, Plate 56).

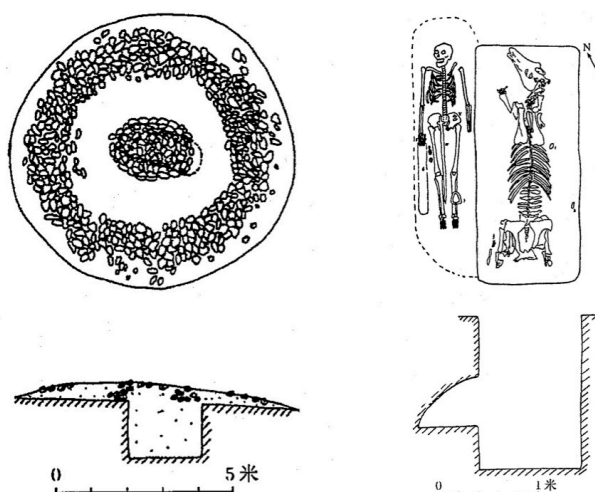
The mounds of the lateral niche graves described by Akishev and Kushayev have a diameter of 8–12 m. Even though Akishev and Kushayev describe a detailed evolution in surface structures, I suggest the mound structures were part of a wider system popular in both the upper and middle Yili Basin: stones were heaped up on and around the shaft mouth, after which one or two stone circular enclosures were arranged around it, which were finally covered with a mound of earth mixed in varying quantities with stone (Fig. 8.10).

In sum, the Late Phase of niche grave practices in the Yili Basin represented by the Kapshagay group continued the new developments started at Sodunbrak and Qirentuohai. These include the replacement of a linear distribution by a random distribution of graves,

<sup>36</sup>Aqishefu et al. 2013, 181.

stone enclosures embedded in the mound rather than on top of it, the replacement of round-bottomed with flat-bottomed ware, painted with unpainted ware, an increase of iron items, especially knives, and a strong decrease of sheep sacrifice. The share of lateral niche graves decreased (Sodungbrak), and were sometimes outnumbered by shaft graves (Qirentuohai). Single extended burials prevailed as in the Early Phase. The main body orientation is towards the WW, sometimes the NW or rarely the SW. Common forms as long-necked jugs without handles and single-handled drinking cups are maintained.

The late developments are best evidenced by the Kapshagay group in the middle Yili Basin, while a small group of later niche graves at Qirentuohai and Jialekesayinte in the Kax valley in the upper Yili Basin, also exhibited conspicuous but different changes. These include a north(east)ward body orientation, a (north)western niche orientation, and a case of whole horse burial in the entry shaft.<sup>37</sup> A niche half-way up the shaft wall in one of the graves at Qirentuohai is a rare feature in the Tianshan area, though another case exists at Jiaohu Goubei in grave complex M16 (Compare Fig. 8.11, with 296, Fig. 21.7). All these features are uncommon for the Yili Basin, but are seen in the Turfan Basin after c. 200 BCE (Part III). The rare occurrence of camel bone at Jialekesayinte (c. 5<sup>th</sup> c. BCE-3<sup>rd</sup> c. CE), where also niche graves with northward body orientations were found, is another late feature in the Yili Basin connecting it to the Turfan Basin.<sup>38</sup>



**Figure 8.11** – Lateral niche grave (M16), Qirentuohai (After ‘Nilekexian Qirentuohai mudi fajue jianbao’, 307, Fig. 33).

<sup>37</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2014c, 307–319. The practice of burying whole horses in the entry shaft became a widespread in the Tianshan Mountains in the 6<sup>th</sup> century CE, under influence of the Tujue.

<sup>38</sup>381 Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014a.

Another observation was the rare and late occurrence of longitudinal and perpendicular niche graves at Shankou Shuiku and Kalasu.<sup>39</sup> Although these are characteristic for the Talas, Fergana and Zaravshan valleys (§ 7.6; § 7.7; § 7.8), it is conceivable they seeped into the Yili Basin from these areas via the Tekes valley after 100 CE.

Two main conclusions can be made for the Late Phase of niche grave developments in the Yili Basin. Firstly, a lateral niche grave cluster represented by the Kapshagay group can be identified in the middle Yili Basin from 300 BCE onward, which became more prominent between c. 100 BCE and 100 CE. Grave structure, western body orientation and vessel form showed strong continuity with practices of Qiongkeke I. The absence of painted pottery, the increase of flat-bottomed pottery ware and iron items, and the decrease of sheep sacrifice, developments which started in the middle phase, all justify a later date for the Kapshagay group.

At the same time, different developments were observed in the upper Yili Basin at Qirentuohai (late phase), Jialekesayinte, Shankou Shuiku and Kalasu. They represent a marginal and heterogenous group of niche grave forms, which exhibited affinities with the Turfan Basin (meridional body orientation, whole horse and occasionally camel sacrifice, and unique niche forms), as well as Talas, Fergana and Zaravshan valleys (longitudinal and perpendicular niche graves).

The above suggests that, by 300 BCE, the niche grave population had largely disappeared from the upper Yili Basin and possibly moved into the middle river basin. Niche graves still occurred in the upper reaches, but showed a heterogenous influence from western and eastern practices.

### 8.2.5 Conclusion

Based on the review of niche grave practices in the Yili Basin, I distinguish three main development phases and hypothesised on their significance.

The Early Phase (c. 900–500 BCE, 82 ff.) is represented by Qiongkeke I in the upper Yili Basin. Mounded lateral niche graves emerged at c. 900 BCE representing the majority type. They were characterised by mounds with stone ringwalls at the base. Northern niches, single extended burials and a western body orientation prevailed. A special relationship between shaft and niche grave occupants is assumed based on their side-by-side distribution and occasional arrangement underneath the same mound. Painted pottery and few iron objects

<sup>39</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014c; Xinjiang Wenwu Kaogu Yanjiusuo 2006; Xinjiang Wenwu Kaogu Yanjiusuo 2014a.

characterise the assemblage. The stone ritual platforms and variety of grave types suggest Qiongkeke I functioned as a ritual or political centre.

From c. 500 BCE onward, niche grave practices began to change. The Middle Phase (86 ff.) is best illustrated by Suodunbrak and the early phase of Qirentuohai (c. 500–300 BCE). While most features of the Early Phase are maintained at the beginning, there is a sharp decrease in the share of lateral niche graves, in painted and round-bottomed pottery in favour of sand-tempered unpainted and flat-bottomed ware, in long-necked jugs in favour of bowls and basins, along with an increase in iron objects.

Niche grave practices of the Late Phase (89 ff.) are best represented by the Kapshagay site cluster in the middle Yili Basin, where they emerged between 300 and 100 BCE, and became popular between c. 100 BCE and 100 CE. The architecture of the mounded lateral niche graves and the western body orientation, show continuation with Qiongkeke I in the upper Yili Basin. Pottery forms are similar though painted pottery has disappeared, and from c. 100 BCE, there is a sharp decrease in sheep sacrifice.

The identification of these three phases of niche grave practices in the Yili Basin allowed to hypothesise on their origins, influence, and distribution.

Firstly, I postulate that the emergence of lateral niche graves in the upper Yili Basin are the result of direct influence – and perhaps migration – from the Beshkent valley in the upper Amu Darya Basin around 1000 BCE. This would explain their early appearance around 900 BCE at Qiongkeke I, a date corroborated by radiocarbon dating and direct overlap with Andronovo remains. After all, Bronze Age niche grave traditions had gradually taken form along the Amu Darya from west to east, positioned in a dialectic relationship between farming oasis people to the south, and steppe people to the north, including Andronovo or related cultures. The geographical and chronological proximity of the niche graves of Qiongkeke I with Andronovo remains, corresponds with their location at the extension of this juncture in the western Tianshan. It is therefore not surprising lateral niche graves popped up here. In any case, the anteriority of lateral niche grave in the upper Yili Basin to those of the middle reaches, undermine the theory of Akishev and Kushayev that those in the middle Yili basin (i.e. the Kapshagay group) are the result of local development in grave architecture (Chapt. 2).

Secondly, I would argue that Qiongkeke I in the upper Yili Basin represented a centre of lateral niche grave elites, joined by other groups with different grave architecture to form an alliance. This is suggested by the great variety of grave types and the ritual architecture at the site. No particular hierarchy was exhibited at this cemetery, as indicated by the

side-by-side distribution and modest grave goods (84).

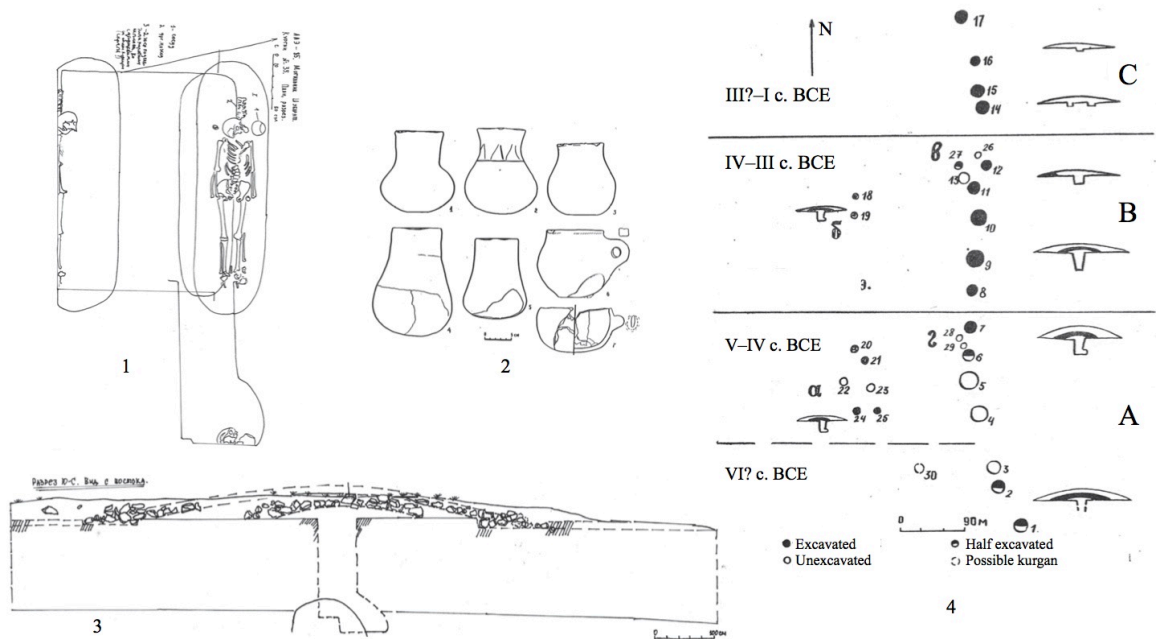
Thirdly, I hypothesise that, while lateral niche grave practices underwent changes between c. 500 and 300 BCE, a dispersion took place from the upper towards the middle Yili Basin, as evidenced by the Kapshagay group. This could have resulted from of a push from the east including even – given the strong continuity with Qiongkeke I – migration.

I will conclude with some final observations. After c. 200 BCE, Qirentuohai in the Kax valley showed affinities with Jiaohe Goubei in the Turfan Basin, notably the north(east)ward body orientation, whole horse sacrifice and unique lateral niche positioning half-way up the wall (93). Contact between both areas would have been relatively easy. From the Yili Basin, one could follow a network of mountain valleys and travel from the Künes valley, the southernmost tributary of the Yili River, through the abundant grasslands of Yü'erdosi (Kaidu) and Ulasitaigou and finally through the Alagou gorge towards the Turfan Basin. The latter could alternatively be reached following the northern slopes of the Tianshan mountains and crossing it via the Chaiwopu depression and Baiyang valley in the central Tianshan mountains.

Nevertheless, contact between both areas cannot easily be demonstrated and the extent of mutual influence is not well understood. It is clear however that by 200 BCE, the niche grave people from the upper Yili Basin had lost their significance. New influence came in from the Turfan Basin, as suggested by similarities between Jiaohe Goubei and Qirentuohai. After c. 100 CE, perpendicular and longitudinal niche grave practices may have seeped in from the Talas Valley and perhaps the Issyk-Kul lake area via the Tekes River, as attested by Shankou Shuiku and Kalasu (93).

### 8.3 Trans-Ili Alatau (c. 500–200/0 BCE)

Niche graves were also discovered at Shubarat near Shamalgan in the foothills of Trans-Ili Alatau, in the northwestern Tianshan mountains. Excavations took place in the mid eighties but were only recently and partially published.<sup>40</sup> Lateral niche graves were most common between c. 500–200 BCE (Fig. 8.12, 4). One damaged grave suggests perpendicular niche graves with stepped entry pits possibly existed too, but this cannot yet be confirmed.<sup>41</sup>



**Figure 8.12** – 1) and 3) lateral niche graves; 2) pottery; 4) chronology, Shubarat, Trans-Ili Alatau (Adapted from Nurmukhanbetov et al. 2016, 13, Fig. 4; 12, Fig. 3; 18, Fig. 10; 14, Fig. 5).

Niche graves co-existed with shaft graves and both featured mounds made of layers of stone and earth. The mounds show a linear north-south distribution along the edges of the river valley. Some mounds cover two grave shafts. Northern niches, extended posture on the back, and a western body orientation were common. Grave goods include round-bottomed jugs with long neck but without handles, and drinking cups (Fig. 8.12).

In sum, the Shurabat niche graves are very similar to those of the Kapshagay group in the middle Yili Basin (89 ff.), though the former appeared 200 years earlier than the latter. Co-existence with perpendicular niche graves would link the later niche graves with similar traditions in the Talas, Issyk-kul, Fergana and Zaravshan valleys (§ 7.8; § 7.7; § 7.6). An insufficient understanding of the chronology of this site complicates comparative research.

<sup>40</sup>Nurmukhanbetov et al. 2016.

<sup>41</sup>Nurmukhanbetov et al. 2016, 17.

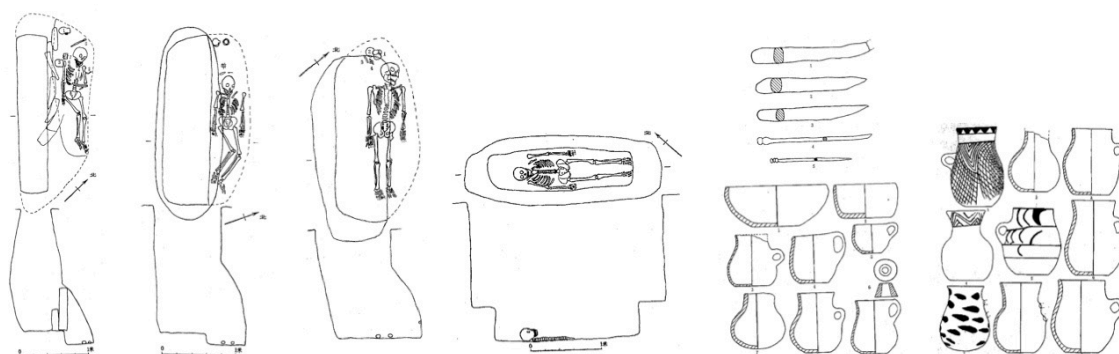
## 8.4 The Central Tianshan and Bogda foothills (500–50 BCE)

### 8.4.1 Introduction

This section investigated niche grave practices in the Central Tianshan and Bogda foothills to understand the pivoting role between these areas, the western and eastern Tianshan mountains, and the Turfan Basin. As demonstrated before, the archeology of the Central Tianshan and Bogda showed clear affinities with the Turfan basin.<sup>42</sup>

### 8.4.2 The Central Tianshan Mountains (500–0 BCE)

Lateral niche graves are recorded for a few sites in the central Tianshan Mountains. Shihezi Nanshan is located on the northern slopes of the Tianshan Mountains, close to the Manas valley bordering the southern Dzungarian Basin. This location allowed easy access to the Yili valley. A total of 13 earthen mounds were excavated, of which two had no grave underneath. 10 lateral niche graves and 1 shaft grave with side ledges were counted. A NW body orientation, and extended posture on the the back prevailed, with some cases of flexed burials. Most pottery exists of unpainted sand-tempered red ware although there is some painted ware. Three iron knives, an iron and a bronze hairpin were found (Fig. 8.13). The site was dated c. 500–0 BCE.<sup>43</sup>

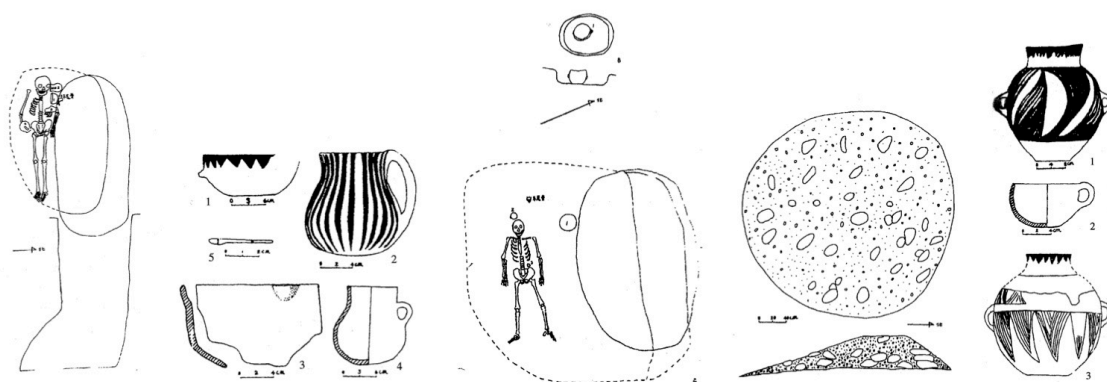


**Figure 8.13** – Grave types at Shihezi Nanshan, northern slopes of the Central Tianshan mountains (Adapted from Xinjiang Wenwu Kaogu Yanjiusuo et al. 1999, 39–40, Figs. 2–5; 40, Figs. 4–5, 42, Fig. 8; 45, Figs. 25–26).

<sup>42</sup>Guo Wu 2012, 57–107.

<sup>43</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 1999.





**Figure 8.14** – Niche graves 94WCL IM1 (LEFT) and 94WCL IIIM1 (RIGHT) with their grave goods. Chaiwopu Linchang, clusters I and III (After ‘Wulumuqishi Chaiwopu Linchang I, II, IV hao dian muzang fajue’, 138–139, Figs. 2–6).

Chaiwopu is located in the eponymous depression southeast of Urümqi. The depression passes through the Baiyang valley and forms an important passageway connecting the areas north and south of the Tianshan mountains, while providing abundant pasture.

Lateral niche graves were found in burial clusters I and III of Chaiwopu.<sup>44</sup> They are attributed to the same period as cluster II, i.e. between 5<sup>th</sup> and 3<sup>rd</sup> c. BCE. As cluster II has no niche graves, clusters I and III which do feature this grave type may in fact be slightly later.<sup>45</sup>

The niche graves are characterised by southern niches, single extended burials, a western body orientation, sacrifice of sheep, and painted pottery. The latter exhibits saw-tooth pattern, wavy elongated inverted triangles, and rolling waves (cross-hatching and rolling waves are possibly only seen in shaft graves) (Fig. 8.14). These people relied mainly on sheep pastoralism. The assemblage resembles that of the Turfan Basin.

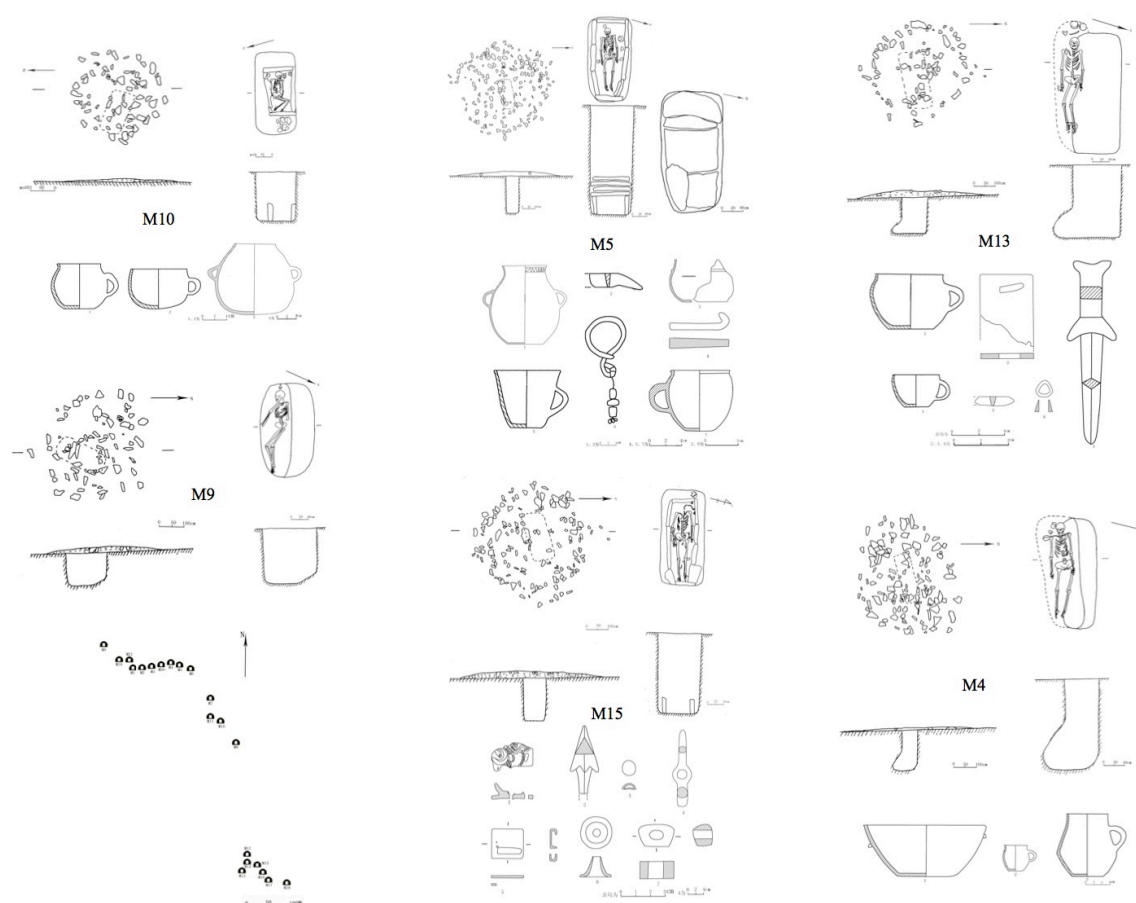
The single-handle jar with painted inverted elongated triangles found in niche grave 94WCL IM1 at Chaiwopu closely resembles painted pottery commonly found at Yanghai terraces I and II (Fig. 8.14, left). As demonstrated below, resemblances with the single piece of painted pottery from Yanghai Terrace III and with a plaque from Heigouliang, all suggest a date later than c. 200 BCE for these remains from Chaiwopu (106, Fig. 8.19).

<sup>44</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014h.

<sup>45</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014h, 141; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2014g.

### 8.4.3 The northern slopes of Bogda mountains (400–50 BCE)

Lateral niche graves were found at Fukang Choumeigou in the northern foothills of Bogda mountains, i.e. across the Tianshan mountains seen from the Turfan Oasis (78, Fig. 8.1). The site is attributed to the Subeixi culture. Radiocarbon dating situates the graves between 400 and 50 cal. BC.<sup>46</sup>



**Figure 8.15** – Different grave types with their assemblages; BOTTOM LEFT: distribution map, Choumeigou (After Xinjiang Wenwu Kaogu Yanjiusuo 2012a, 35, Figs. 30–32 (M10); 30, Figs. 15–18 (M5); 38, Figs. 39–41 (M13); 34, Figs. 28–29 (M9); 40, Figs. 44–46 (M15); 29, Figs. 12–14 (M4); 26 (distribution map)).

Stone-and-earth mounds of 2–4 m in diameter cover shaft graves, slabstone burials, and graves with southern lateral niches (Fig. 8.15). Radiocarbon samples were taken from one shaft grave (M1, 400 cal. BC), one slabstone burial (M6, 380–190 cal. BC), and two niche graves (M13, 380–200 cal. BC; and M16, cal. 240–50 BC). The presence of Western Han lacquer from M6 supports the later date ranges. The graves are distributed in a linear way in three clusters (Fig. 8.15). Shaft graves and slabstone burials co-exist in all clusters, although

<sup>46</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2012a, for the ambiguity of the term ‘Subeixi culture’, see 279.

there are more shaft graves in the northern clusters, while slabstone burials predominate in the southern cluster. This, together with the the concentration of iron objects in slabstone burials and shaft graves outside of the northern burial cluster, suggests a chronological difference.<sup>47</sup>

Extended posture on the back prevails, next to the occasional flexed posture on the side and secondary burials. All are single burials, except two joint burials. All graves are oriented along an east-west axis, with the head – where verifiable – towards the west. Sheep sacrifice is common and suggests sheep herding. The drinking cups, bowls, double-handled jars with molded serrated edges and belt plaques are also seen in the Turfan Basin. Contact between both areas is not surprising as the Bogda foothills serve as summer pastures for the Turfan oasis people, even today. The iron sword found in niche grave M13, along with the ram’s head and pickaxe reveal links with the Central Asian steppes.<sup>48</sup> Such swords are rare in the Tianshan area, though miniatures are known from the Balikun steppes no earlier than 200 BCE (105, Fig. 8.18).

Despite similarities with the Turfan Basin, the Choumeigou practices also show differences. While shaft and lateral niche graves coexisted in the former, slabstone burial was only present in the latter, suggesting different traditions. ‘Scythic slab-grave’ cultures are known from eastern Mongolia to the lake area of western Mongolia and in the Ordos, and are contemporaneous with the Scythic cultures of the central and western steppes. Most human remains of the slab-graves burials are East Asian, while towards the west they show a strong admixture of Europoid types.<sup>49</sup> Lateral niche graves coexisting with slabstone burials also exists in the upper Yili Basin (85, Fig. 8.3). This, together with the western body orientation and linear grave distribution, supports a link with the latter. However, the absence of painted pottery supports a later date.

#### 8.4.4 Conclusion

Small numbers of lateral niche graves used by sheep pastoralists were found in the Central Tianshan and Bogda foothills. They are distributed side-by-side with shaft graves and other types. All were mounded and characterised by a western or northwestern body orientation. Chaiwopu provides an apparent case for westward transmission of niche grave practices from the Yili Basin into the Turfan Basin. Between 500 and 300 BCE, the mounded niche grave occupants of Chaiwopu adopted painted pottery from their neighbours in the Turfan

<sup>47</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2012a, 46.

<sup>48</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2012a, 46.

<sup>49</sup>Di Cosmo 1994, 1099; Askarov et al. 1992, 466–467, in; Christian 2006 [1998], 129.

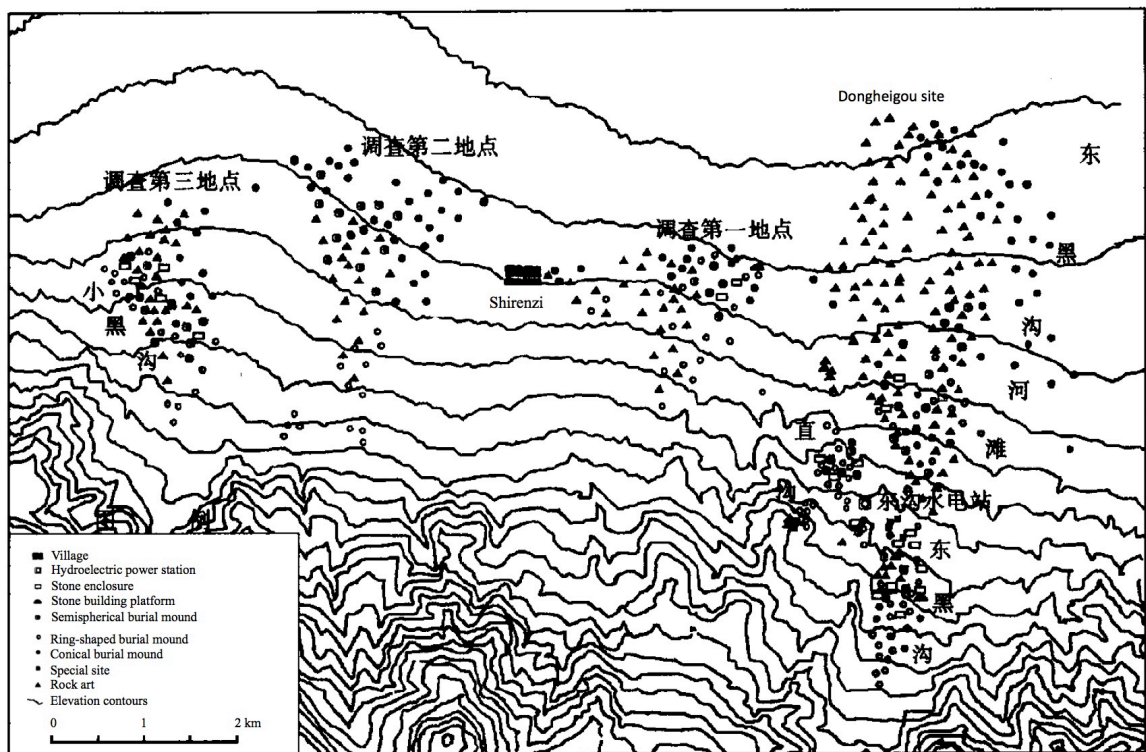
Basin, at a time when the latter had not yet adopted niche grave practices themselves. Therefore niche grave practices in the Turfan Basin could have resulted from contact with the Yili Basin via the Chaiwopu depression. However, the fact that part of the remains of Chaiwopu postdate c. 200 BCE, and that painted pottery is absent at Choumeigou, suggest these people used niche graves at about the same time the Turfan Oasis people did. Mutual influence was probably enhanced through seasonal movement between winter pastures in the oasis and summer pastures in the mountains.

## 8.5 The Balikun grasslands (c. 200 BCE–100? CE)

### 8.5.1 Heigouliang and Dongheigou

Around 200 BCE, two pastoralist communities developed in the grasslands north of the Balikun Mountains: Heigouliang and Dongheigou (Shirenzigou). Their remains are distributed over alluvial fans covered with abundant pastures in summer. A large summer camp with stone houses, ritual platforms, a cemetery and rock carvings were investigated at Dongheigou. At Heigouliang only the cemetery was excavated. Both sites are located 20 km apart (Fig. 8.16). Heigouliang was excavated in 1993 and 1994 but the final report has not yet been published.<sup>50</sup> After several smaller surveys starting in 1957, Dongheigou was extensively surveyed and some core areas excavated between 2005 and 2007.<sup>51</sup>

Niche grave practices emerged with the rise of both centres. There is no evidence for precedents of this grave type earlier than c. 200 BCE.



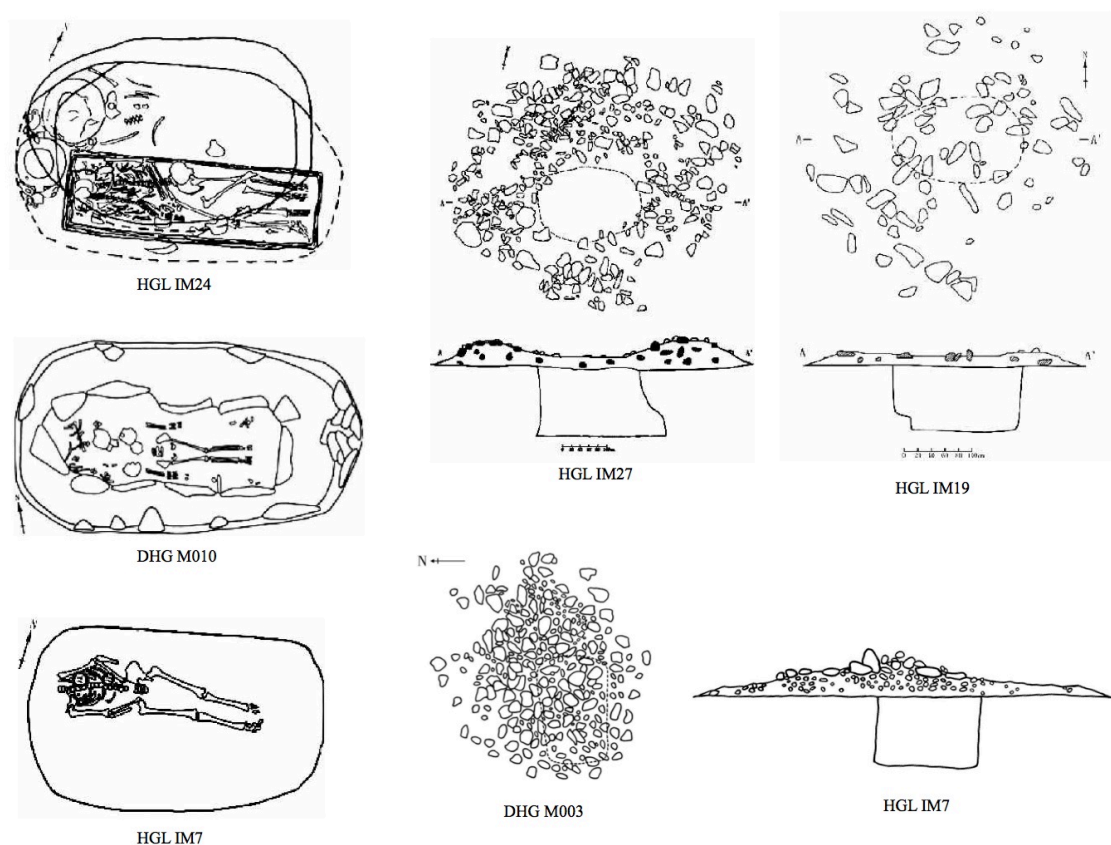
**Figure 8.16** – Distribution map of Heigouliang and Dongheigou, Balikun grasslands (After Xibei Daxue Wenhua Yichan yu Kaoguxue Yanjiu Zhongxin, Hami Diqū Wenwuju and Balikunxian Wenguan suo 2006, 17, Fig. 2)

<sup>50</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 1994a.

<sup>51</sup>Hami Wenwuzhi Bianzhuanzu 1993; Xibei Daxue Wenhua Yichan yu Kaoguxue Yanjiu Zhongxin et al. 2006b; see also Xinjiang Wenwu kaogusuo et al. 2007; Wang Jianxin 2008; Mo Zhanxiong 2008; Ren Meng 2008; Mo Zhanxiong 2010; Ren Meng 2011.

Based on a bronze mirror from Heigouliang, this site, and by analogy Dongheigou, are dated to the early Western Han. The mirror itself is dated ‘late Warring States to Western Han’, but a time lapse for its import had to be considered.<sup>52</sup> Wang Jianxin claims reliable radiocarbon dates confirm a date of 2<sup>nd</sup> c. BCE.<sup>53</sup>

The remains of both sites are similar.<sup>54</sup> Both feature a cemetery (only that of Dongheigou was excavated), settlement, and rock carvings. The graves of both cemeteries are covered by stone mounds with a depression in the middle. At Heigouliang, most graves have southern niches and a ledge spared out from the opposite wall. There are also shaft graves, sometimes lined with stone. The shaft is backfilled with large stones. At least part of the Dongheigou graves feature niches. Wooden burial devices assembled *in situ* are common.



**Figure 8.17** – Grave types, Heigouliang (Adapted from Ren Meng 2011, 269–270, Tab. 4 and 253, Fig. 1; Mo Zhanxiang 2010, 53, Tab. 1).

<sup>52</sup>Kong Xiangxing et al. 1984; in Mo Zhanxiang 2010, 56; and Qian Wei 2006, 122; in Wang Jianxin 2008, 89.

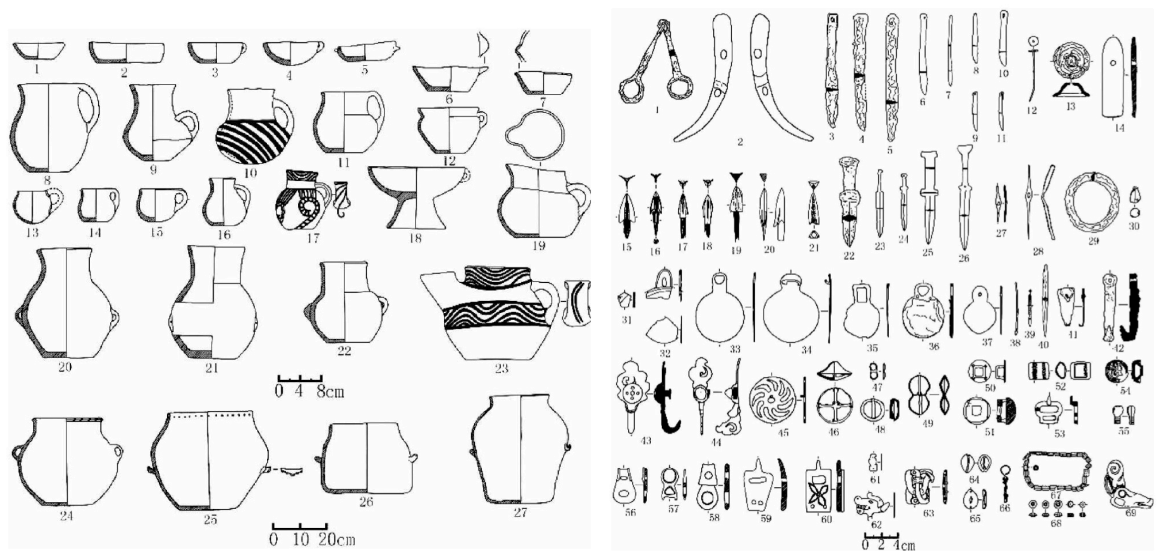
<sup>53</sup>Courtesy of Wang Jianxin. These radiocarbon dates were not published yet at the time of writing this thesis.

<sup>54</sup>Only small and medium-sized graves were excavated at Dongheigou, with mounds featuring a diameter smaller than 10 m. The larger mounds are possibly younger. See Wang Jianxin 2008, 89.

Extended burials with western body orientation prevail, though secondary and flexed burials on the side occur too. Some human remains show evidence of dismembering. Sheep, goat, cattle, horse and camel bones attest to animal sacrifice. Some skeletons are relatively complete. They were deposited inside the mound, entry shaft or niche.

Sand-tempered hand-molded pottery was common, next to some grey ware. Very few pieces are painted. Flat-bottomed single or double handled jars and bowls prevail. Iron is common, but stone, bronze, gold, silver and lacquer items occur too. Some objects, like mirrors and daggers, are reduced in size (Fig. 8.18). Grave goods associated with dismembered humans are rare, and include tools, ornaments and beads.

Mo Zhanxiong argued that differences between both sites suggest chronological or regional differences. For example, Dongheigou only has single extended burials, while Heigouliang also has many double and multiple, next to single burials. Furthermore, both sites have unique object types, including vessels with open spout and large-sized barrel-shaped body at Heigouliang and narrow-necked bottles at Dongheigou.<sup>55</sup>



**Figure 8.18** – Grave goods, Heigouliang (After Ren Meng 2011, 253–254, Figs. 2–3).

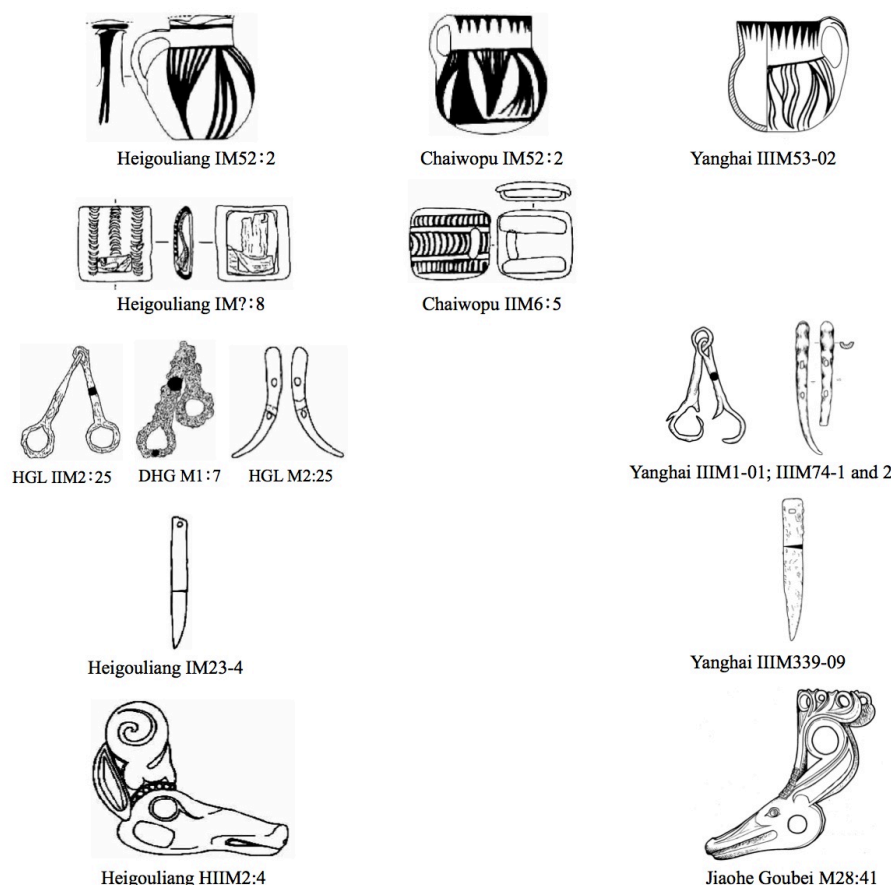
Several scholars argued that Heigouliang and Dongheigou were heavily influenced by the preceding Yanbulake culture, but also ‘Xiongnu culture’. The latter supposedly resulted from the historically recorded defeat of the local Yuezhi by the Xiongnu in 161 BCE.<sup>56</sup> Xiongnu presence in Dongheigou later on during the Eastern Han, was claimed based on an inscription on the ‘Tianhaibei’ stele found in the village Shirenzi.<sup>57</sup> Ren Meng stated Xiongnu influence

<sup>55</sup>Mo Zhanxiong 2010, 52–55.

<sup>56</sup>Wang Jianxin 2008, 89–90; Mo Zhanxiong 2010, 55–56; Ren Meng 2011, 278–281.

<sup>57</sup>Xu Song 2005; in Wang Jianxin 2008, 89.

was evidenced from burials, rock carvings, pottery decorations and most of the horse gear, tools, arms, ornaments, oracle bones of sheep, and the practice of braking mirrors before deposition.<sup>58</sup> Mo Zhanxiong indicated similarities between gold and silver plaques from Heigouliang and Dongheigou, and samples from Aluchaideng, Xigoupan, Maoqinggou and Taohongbala in Inner Mongolia.<sup>59</sup>



**Figure 8.19** – Comparison of finds of Heigouliang, Dongheigou, Chaiwopu, Yanghai and Jiaohe Goubei (Images of Heigouliang and Dongheigou, see Ren Meng 2011, 276–277, Tab. 6; images Yanghai, see Tulufan Diqu Wenwuju et al., (forthcoming), Figs. 867.5, 893.2, 793.7; image Jiaohe Goubei, see Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu *et al.*, 65, Fig. 49–1)

Next to local stone buildings and pottery (painted belly jars with handles), the Subeixi, Chawuhugou, South Siberian, and Central Plains cultures exerted limited influence. Ren Meng stated influence from the Subeixi culture, including painted pottery with triangular, wavy and cross-hatching patterns, were found at Heigouliang and Dongheigou, and Chaiwopu. Bronze plaques with moon-shaped perforations were seen at Heigouliang and Chaiwopu. Miniature bronze knives with straight back refer to proto-types from Yanghai

<sup>58</sup>Ren Meng 2011, 262–278.

<sup>59</sup>Tian Guangjin et al. 1980; Yikezhaomeng Wenwu Gongzuozhan et al. 1980; Nei Menggu Gongzuodui 1996; Tian Guangjin 1976; Mo Zhanxiong 2010, 55.



Terrace II. Almost identical bone bow tips sculpted in the form of a deer's head, were found at Heigouliang and Jiaohe Goubei (Fig. 8.19). Jars with open spout and bowls with tab handles and flat bottoms are influence from Chawuhugou. Lacquer fragments and a Han-style mirror with feather pattern show influence from the Central Plains.<sup>60</sup> The few pottery jars with high and narrow neck without handles were common in the Altai between the 6<sup>th</sup> and 3<sup>rd</sup> c. BCE. The shape and reduced size of miniature bronze knives, hatchets/hoes and handled mirrors are characteristic of the Tagar II culture.<sup>61</sup>

Grave goods and animal bones suggest the Dongheigou and Heigouliang people relied on pastoralism. Wang Jianxin saw Dongheigou as a large summer camp and administrative centre for the Xiongnu who ruled the local Yuezhi.<sup>62</sup> This is an interesting view. The northern slopes of the eastern Tianshan mountains, including the high altitude pastures from Balikun to Yiwu, provided perfect summer pastures, but in winter temperatures dropped to  $-40^{\circ}\text{C}$  and people migrated to pastures south and southeast of the mountains. Many ancient small and a few middle and large sized winter camps have been discovered in the Hami oasis and Mazongshan range southeast of the Tianshan mountains.<sup>63</sup> Seasonal mobility probably enhanced exchange with the Hexi Corridor via Mazongshan, and with farmers from the Hami Oasis.

## 8.5.2 Conclusion

Around 200 BCE, lateral niche graves emerged in the Balikun grasslands at Heigouliang and Dongheigou (§ 8.5.1). They coexisted with shaft graves and featured stone mounds, southern niches and a western body orientation. Single extended burials prevailed – next to some secondary burial – while double and multiple burials also existed at Heigouliang. Sacrifice of sheep, cattle, horse, camel and humans, ritual platforms, and large settlements suggest Heigouliang and Dongheigou represented powerful centres in the eastern Tianshan area.

There are no arguments supporting local development of the niche graves. Not only is there no evidence for precedents in the Balikun area or Hami Oasis, but the sandy and stony soil was barely suited for creating niches. This resulted in small niches, sometimes only symbolically present as bulging walls. Wooden burial devices assembled *in situ* possibly

<sup>60</sup>Ren Meng 2011, 275–276.

<sup>61</sup>Ma Jian 2008; in Ren Meng 2011, 275–276.

<sup>62</sup>Wang Jianxin 2008.

<sup>63</sup>Xibei Daxue Wenhua Yichan yu Kaoguxue Yanjiu Zhongxin et al. 2006a; Hami Wenwuzhi Bianzhuanzu 1993.

were a solution to prevent walls from collapsing, although this practice may also originate in the Ordos or Mongolian steppes. Despite unfavourable soil conditions, the majority of the Heigouliang population and part of the Dongheigou population made clear efforts to create lateral niches with a southern orientation (104, Fig. 8.17). This suggests niche making was a significant aspect of burial customs and group identity.

When allowing for external influence, where did this come from? As discussed, Heigouliang and Dongheigou underwent influences from various cultures apart from the local Yanbulake culture. Despite claims that Xiongnu influence was the strongest (105), this cannot account for the introduction of niche graves. Apart from the ambiguity resulting from ethnic attribution, it is problematic for various reasons. Even if allowing for an identifiable body of ‘Xiongnu burials’, there is considerable variability.<sup>64</sup> Moreover, lateral niche graves are uncommon in ‘Xiongnu territory’ (12). Thirdly, the presence of Xiongnu elements in the Tianshan area before 100 BCE has yet to be proven, although we could expect such influence affected the easternmost Tianshan first (81).

What other options are left? The pastoralists from Heigouliang and Dongheigou were certainly aware of niche grave practices in the Yili Basin, the Turfan Basin, and the Hexi Corridor. One could easily travel westward from the Balikun grasslands, reach Bogda and the central Tianshan mountains and cross it towards the Turfan basin, or alternatively continue along the northern slopes of the Tianshan towards the Yili Basin. Seasonal mobility between the Balikun grasslands and Mount Mazongshan could have promoted contact with the Hexi corridor (107). The route via Dunhuang and Lop Nur was not an option given the desertification at that time (78, Fig. 8.1).

The Balikun niche graves show certain similarities with those of the Yili Basin. Both areas feature rock art and ritual platforms, but the latter differ in construction and the platforms in the Yili Basin are more than half a millennium earlier. Other similarities are a western body orientation, extended posture, a certain degree of painted pottery, and tab handles interpreted as influence from Chawuhugou but also occurring in niche and shaft graves of the middle Yili Basin. Similarities with the Hexi corridor and the Turfan Basin are more convincing. These connections have been investigated in § 9.5 and Part IV.

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<sup>64</sup>For the most recent and comprehensive work on ‘Xiongnu archaeology’, see Brosseder et al. 2011; for Xiongnu burial customs, see also Shan Yueying 2009.

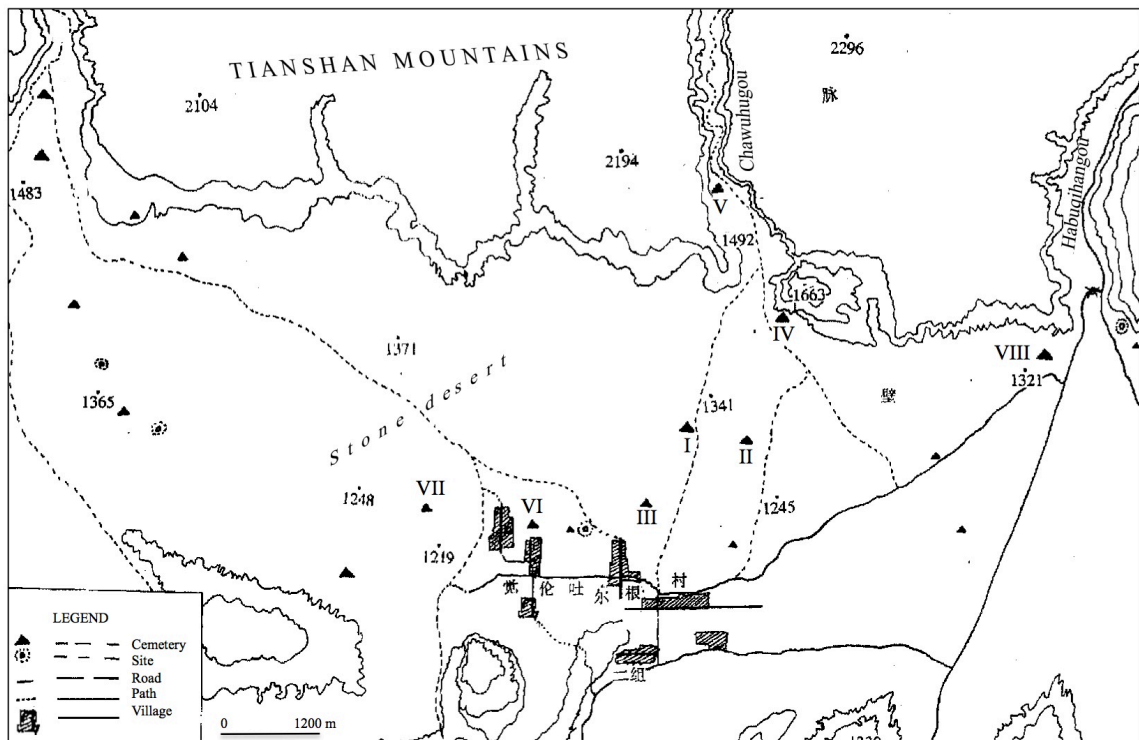
## 8.6 The Tarim Basin and Central Tianshan (c. 0–400 CE)

### 8.6.1 Introduction

This section discusses niche grave practices in the central Tianshan and Tarim Basin, i.e. the area once drained by the Tarim, and the drainage system formed by the Kaidu river, Yulduz Basin, Yanqi Basin, Lake Bosten and Kongque river, and the ancient Lop Nur Lake (Fig. 8.1).

### 8.6.2 Chawuhugou III (c. 0–150 CE)

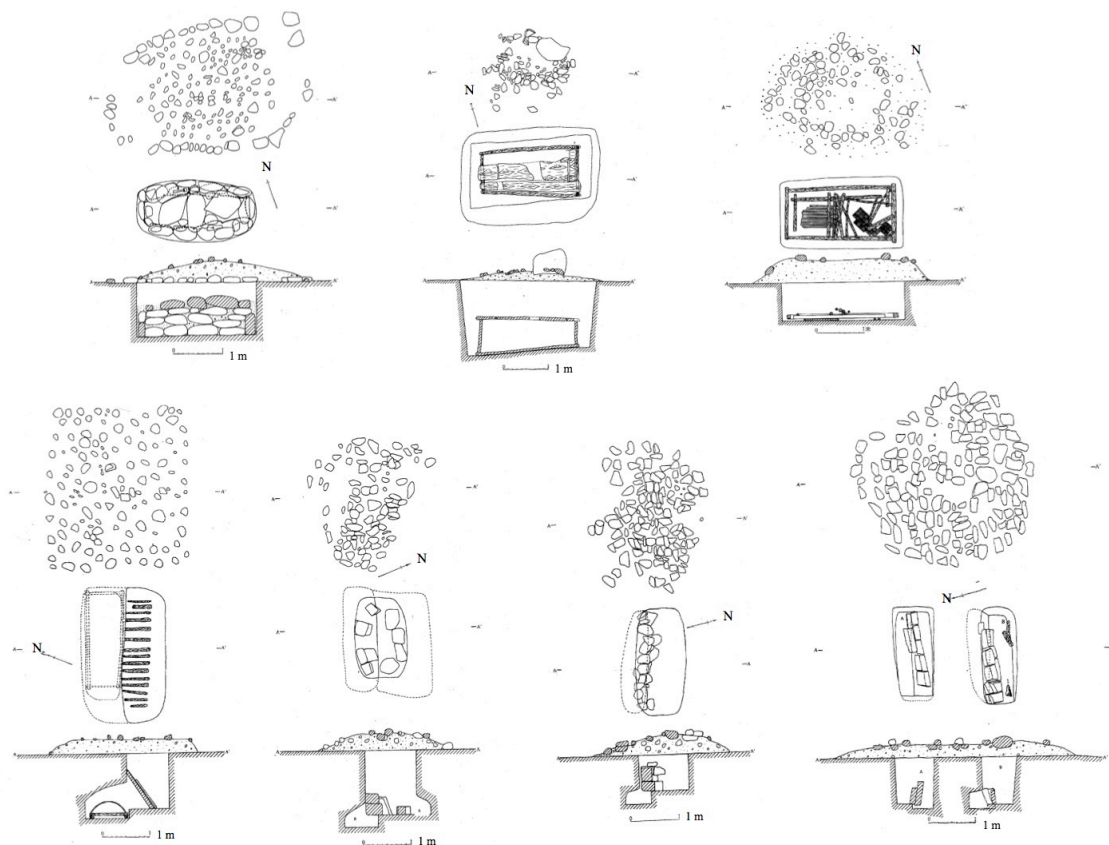
The Chawuhugou(kou) burial clusters are distributed over several alluvial terraces at the outlet of the Chawuhu stream in the central Tianshan Mountains. This stream is a tributary of the Kaidu River, which flows through the Yulduz and Yanqi Basin into Lake Bosten (78, Fig. 8.1). Pasture abounds in the area, notably the Yulduz Basin to the northwest and in several valleys to the northeast.



**Figure 8.20** – Distribution of the Chawuhugou cemeteries I–VIII (Adapted from Zhongguo Shehui Kexueyuan Kaogu Yanjiusuo Xinjiang Dui et al. 1990, 2, Fig. 2).

A total of 448 tombs have been excavated distributed over five cemeteries (nos. I–V) situated on an equal number of alluvial terraces.<sup>65</sup> Three other cemeteries (nos. VI, VII and VIII), have not been excavated (Fig. 8.20). Chen Ge pointed out that the chronology is complex and that there are many inconsistencies in the reporting of the assemblages and the inter-cutting of the graves.<sup>66</sup> Chawuhugou is the type site for the Early Iron Age Chawuhugou culture (c. 1000–500/100 BCE) represented by the cemeteries I, II, IV and V.

Lateral niche graves only occur in Cemetery III, dated c. 0–150 CE, based on radiocarbon dating and a TLV-mirror attributed to the Wang Mang period (r. 9–23 CE) and early Eastern Han.<sup>67</sup> Cemetery III occupies an alluvial terrace on the edge of the gravel desert and is divided into an eastern and western part. Only 20 graves were excavated. Some changes in burial mode and grave goods observed in lateral niche grave practices, were initiated in earlier phases.



**Figure 8.21** – Different grave types, Chawuhugoukou III (after Wang Mingzhe 1999, 257–263, Figs. 194–200).

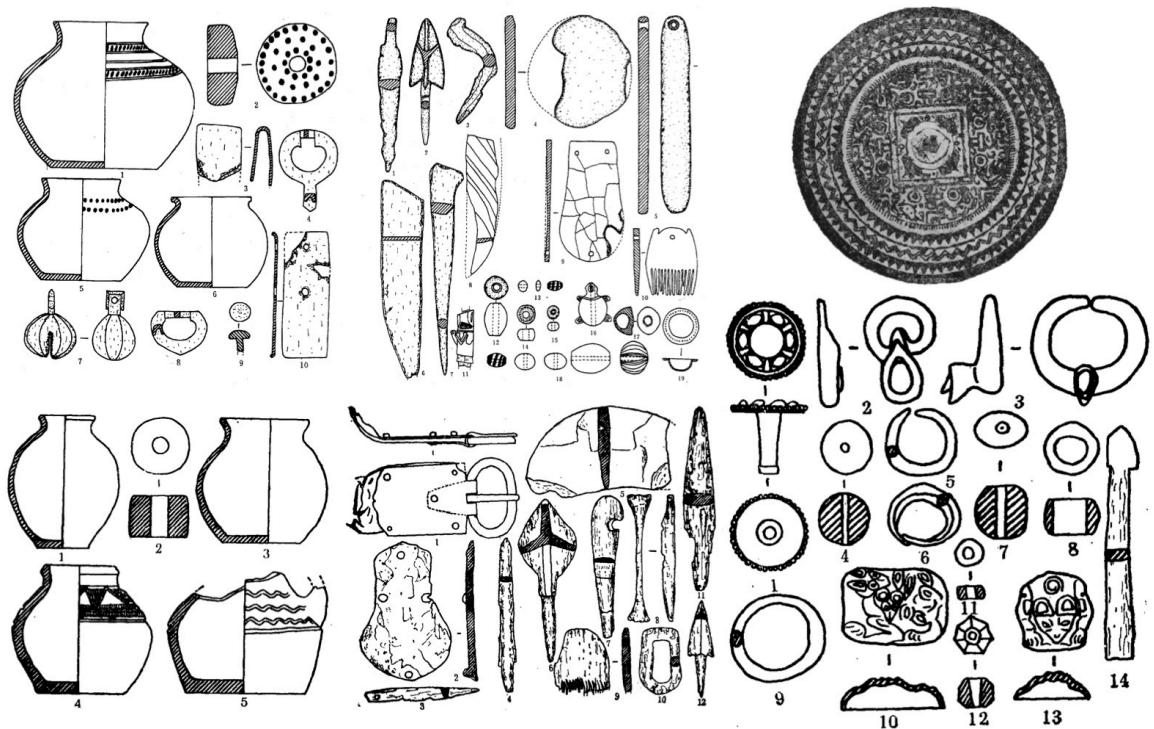
<sup>65</sup>See for Chawuhugou Cemetery I, Zhongguo Shehui Kexueyuan Kaogusuo Xinjiang Dui et al. 1988; Cemetery II, Zhongguo Shehui Kexueyuan Kaogusuo Xinjiang Dui et al. 1990; Cemetery III, Zhongguo Shehui Kexueyuan Kaogu Yanjiusuo Xinjiang Dui et al. 1990; for the full excavation report, see Wang Mingzhe 1999.

<sup>66</sup>Chen Ge 2001, 30–39.

<sup>67</sup>Zhongguo Shehui Kexueyuan Kaogu Yanjiusuo Xinjiang Dui et al. 1990, 889.

The graves are marked with black pebble mounds with a diameter of 3–5 m, covering cist burials (1), shaft graves (6) either with straight walls or one or more side-ledges, a plankwood coffin or wooden burial device assembled *in situ*, and lateral niche graves (13) with 1 or – in one instance – 2 niches (Fig. 8.21).<sup>68</sup> The niches are closed with mud brick or roundwood. An eastern body orientation prevails in all grave types. Different grave types are distributed side-by-side although lateral niche graves cluster more in the east of the cemetery.

Usually one grave is found underneath the mound, but in one case there are two (Fig. 8.21, bottom right). The latter shows that shaft graves with one side-ledge strongly resembled the niche grave type, and that in both cases the burial space was demarcated with mud brick and lumps of earth.



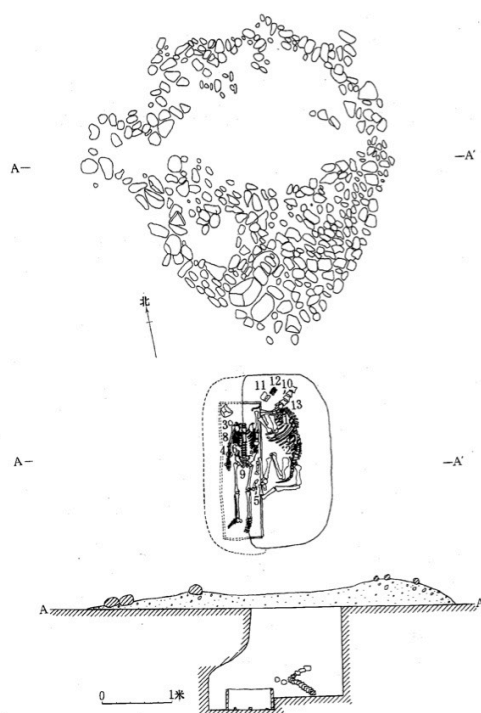
**Figure 8.22** – Grave goods, Chawuhugou III (Top row except mirror: adapted from Wang Mingzhe 1999, 269–270, Figs. 206–207; bottom row including mirror: after Zhongguo Shehui Kexueyuan Kaogu Yanjiusuo Xinjiang Dui et al. 1990, 886–887, Figs. 7–9).

Similar grave goods are found in all grave types at Chawuhugou III. Contrary to the earlier cemeteries I, II, IV and V, there is very little pottery. It is sand-tempered, hand-molded grey ware, and flat-bottomed belly jars with a short wide neck without handles prevails. Painted pottery – common in earlier periods – has disappeared. Some jars have incised or impressed wavy, line and triangular decoration on the shoulder. Most objects are

<sup>68</sup>Wang Mingzhe 1999, 255–266.

made of iron, including two swords of which one in a lacquer sheath, arrowheads, a knife, plaque, and ring-shaped object. Bronze items include a TLV-mirror, a belt buckle with hinged tongue attached with nails to a leather belt fragment, a belt buckle ring, a finger ring, earrings. There are silver earrings, a small golden object with turquoise inlay, two hammered gold plaques with animal motifs, wooden trays, a bone endplate for reinforcing bow nocks, a stone knife, combs, beads, a hairpin, and many silk fragments.

The animal assemblage shows significant changes with earlier cemeteries. MNI calculations indicated that the animal assemblage in Cemetery I consisted of 78% horse remains, 20% of cattle and only 1% of ovicaprids. At Chawuhugou III, ovicaprids dramatically increased to 67%, horse remained important but dropped to 29%, while cattle almost disappeared with 5%.<sup>69</sup>



**Figure 8.23** – Horse burial in grave M8, Chawuhugoukou Cemetery III (after Wang Mingzhe 1999, 266 Fig. 203).

A considerable degree of sedentism can be claimed for the Early Iron Age Chawuhugou population, considering the sheer size of the cemeteries, counting hundreds and even thousands of burials, and the large amount of pottery. These people probably practiced vertical transhumance: in winter flocks grazed in the oases valleys, while in summer they were guided into highland pastures.<sup>70</sup> At Chawuhugou III however, the common presence of horse and

<sup>69</sup>An Jiahuan et al. 1998.

<sup>70</sup>Zhou Jinling 1998, 40.

sheep bones in combination with the smaller size of the cemetery and limited presence of pottery suggest a increasingly mobile life style.

Burying horse remains in pits north of the grave shaft was a common practice at Chawuhugou during most of the Early Iron Age. This may have inspired similar practices in the Turfan Basin after 200 BCE (Chapt. 23). However, at Chawuhugou almost exclusively horse heads were sacrificed, whereas in the Turfan Basin it was often the whole animal. At Chawuhugou III, animal parts – and in one case a whole horse – were deposited inside the entry shaft (Fig. 8.23).

Some scholars claimed on the basis of similarities of grave goods and grave architecture with burial traditions in Ningxia, Inner Mongolia and Mongolia, that the grave occupants of Chawuhugou III were Xiongnu. They point to the type of pottery jar, belt buckles, belt hooks, objects with animal design, the presence of shaft and niche graves, single extended burial, and the sacrifice of horse heads, horse's hoof and legs.<sup>71</sup> But as mentioned, niche graves were not diagnostic of 'Xiongnu' culture (12).

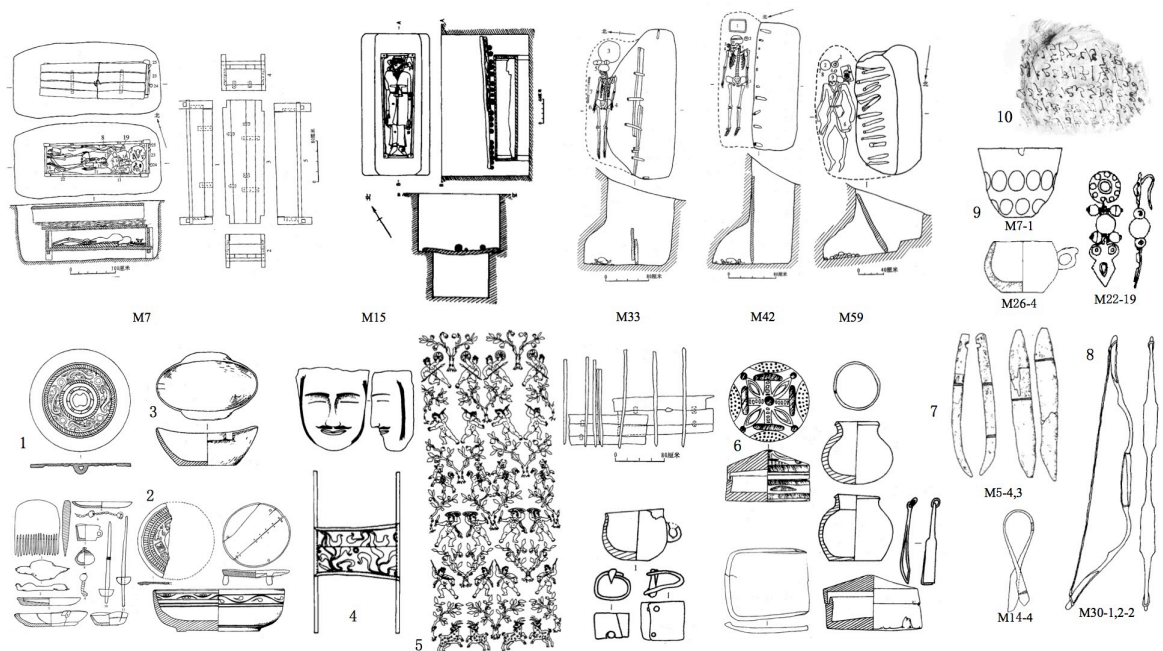
In conclusion, between c. 0 and 150 CE, Chawuhugou Cemetery III saw the introduction of niche grave next to shaft grave practices. They were mounded, and favoured single extended burials and an eastern body orientation. Although the cemetery was only partially excavated, the size suggests they were far less numerous and influential than their predecessors during the Early Iron Age. They differed from the latter by a strong promotion of sheep sacrifice and near abandonment of cattle sacrifice, while horse sacrifice remained important. The assemblage showed considerable influence from the Ordos and Mongolian steppes. Silk and lacquer attested to contact with the Central Plains.

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<sup>71</sup>Zhongguo Shehui Kexueyuan Kaogu Yanjiusuo Xinjiang Dui et al. 1990, 889.

### 8.6.3 Yingpan (c. 50–400 CE)

Yingpan in Yuli County is situated north of the ancient riverbed of the Kongque, on a gravel terrace truncated by streams from an alluvial fan at the southern foot of the Kuruk Tag Mountains (78, Fig. 8.1). The ancient city site counts several stupas and northeast of it is a cemetery with c. 300 graves dated between the 1<sup>st</sup> c. BCE and the 4<sup>th</sup>/5<sup>th</sup> c. CE. Two thirds of the graves are heavily plundered, and about 40% is excavated.<sup>72</sup> It is thought that Yingpan belonged to Moshan, a small state that connected the Turfan Basin via the Kuruk Tag mountains with the Lop Nur area.<sup>73</sup>



**Figure 8.24** – Assemblage Yingpan (Adapted from Xinjiang Wenwu Kaogu Yanjiusuo 2002c, 61–64, Figs. 4–7 (M7, exc. 1 and 2); 69–70, Figs. 13–15 (M33); 71–72, Figs. 16–17 (M42); 72–73, Figs. 18–19 (M59); Xinjiang Wenwu Kaogu Yanjiusuo 1999b, 6, Fig. 3; 10, Fig. 10; 13, Fig. 14.2 and 15 (M15); Xinjiang Wenwu Kaogu Yanjiusuo 2002b, 23, Fig. 35.3; 24, Fig. 36.1; 29, Fig. 49-5 and 6; 30, Fig. 50-9; 41, Fig. 66-1, 2, 7 (objects to the right: pottery cup, bow, clippers, earrings, one endplates, handle laminates, and mirrors (1 and 2); Qi Xiaoshan and Wang Bo 2008, 39, Fig. 7 (manuscript)).

Niche graves were discovered in 1999. Shaft graves with(out) side ledges (52) were found next to graves with lateral niches sealed with poplar posts and wooden boards (28) (Fig. 8.24). Only shaft graves are marked on the surface with standing poplar posts. Half hollowed-out tree trunks and four-legged rectangular wooden coffins are common in shaft

<sup>72</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1994; for the 1995 excavations, see Xinjiang Wenwu Kaogu Yanjiusuo 2001; and Xinjiang Wenwu Kaogu Yanjiusuo 2002b; for the 1999 excavations, see Xinjiang Wenwu Kaogu Yanjiusuo 2002c; For M15, see Xinjiang Wenwu Kaogu Yanjiusuo 1999b; Xinjiang Wenwu Kaogu Yanjiusuo 2014e.

<sup>73</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2002c, 639.



graves, while no burial devices are seen in niche graves. Single extended burial prevailed, and occasionally two or three individuals were buried together. An EE body orientation prevails in all grave types, alongside the occasional NE or SE and rare SS orientation.

Grave goods are similar in all grave types (Fig. 8.24). They include red sand-tempered pottery such as jars and cups, lacquer cosmetic boxes (6) holding wooden combs and other beauty accessories, a hemp mask and arm guard (4), small bronze and silver objects, textiles including wool, cotton and silk, leather items, food, wooden trays with sheep bones, a hemp paper with Kharoṣṭhī (10), bronze mirrors (1, 2), a Sassanian faceted glass cup (9) and textiles with multiple cross-references to other cultures in Eurasia, including for example cherubins (see detail in 5) and woven Chinese characters.

At Yingpan – and in the Lop desert in general as the literature review demonstrated – horse bones are absent and sheep bones limited. Horse gear is rare. Possibly the Lop Oasis was too far away from the vast pastures in the mountain valleys to support large herds of animals and horses in particular. Nevertheless, the piedmont of the Kuruk Tag provided a contact zone between sedentary people practising limited sheep pastoralism and crop farming, and pastoralists from the Turfan and Yanqi basins. As Marc Aurel Stein pointed out, the road passing through the Lop Nur Oasis to the foot of the Tianshan and the northern oases needed protecting against raiders as these could easily descend from the Yanqi valley or from Turfan across the western Kuruk Tag.<sup>74</sup> Not surprisingly, the only niche graves in the area were found at Yingpan at the foot of the Kuruk Tag, where contact with niche grave using people from the Turfan Basin and Chawuhugou near the Yanqi valley was inevitable.

In conclusion, niche graves emerged at the foot of the Kuruk Tag Mountains between c. 50 and 400 CE, a date corroborated by the presence of lacquer and silk in combination with cotton, Chinese *erbei* cups and cosmetic boxes. Niche burials formed a minority which integrated largely with the local shaft grave practices, like the extended posture, sheep sacrifice, and EE body orientation, even though they did not adopt the wooden coffins or surface structures.

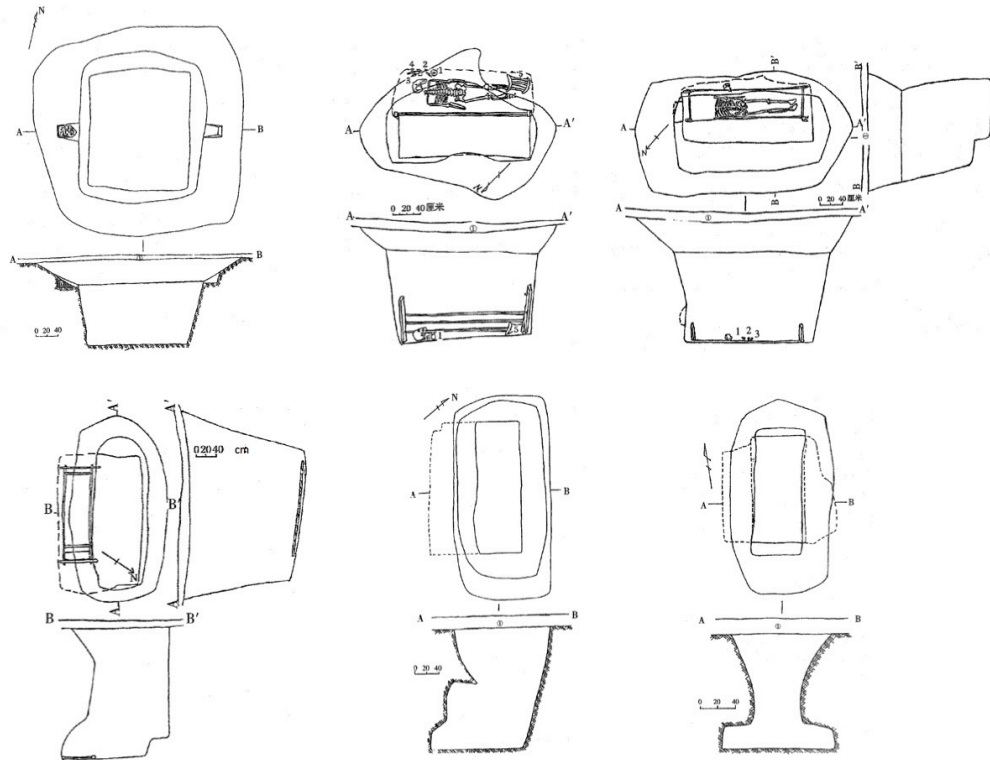
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<sup>74</sup>Stein 1928, 770.

### 8.6.4 Zhagunluk I, Phase III (c. 50–400 CE)

Zhagunluk is situated on a terrace west of the old riverbed of the Cherchen (Qiemu) in the southern Tarim Basin (Fig. 8.1). Folke Bergman investigated the area in the early twentieth century and Chinese archaeologists excavated Cemetery I between 1985 and 1998.<sup>75</sup> The graves are seriously looted and c. 90% of the surface structures are damaged.

Zhagunluk Cemetery I is the type site for the Zhagunluk culture (c. 1000–50 CE), which can be seen as a southern variant of the Early Iron Age Chawuhugou culture. Despite most graves belonging to this culture, represented by phases I (c. 1000 BCE) and II (c. 800 BCE–50 CE), a small minority belongs to Phase III (c. 50–400 c. CE), when this area belonged for some time to the Qiemu Kingdom. Lateral niche graves appeared in Phase III.



**Figure 8.25** – Different grave types, Zhagunluk Phase III (After ‘Qiemu Zhagunluke yihao mudi’, 716–717, Figs. 52–54); ‘1998 nian Zhahongluke disanqi wenhua muzang fajue jianbao’, 750, 753–755, Figs. 7, 9 and 11).

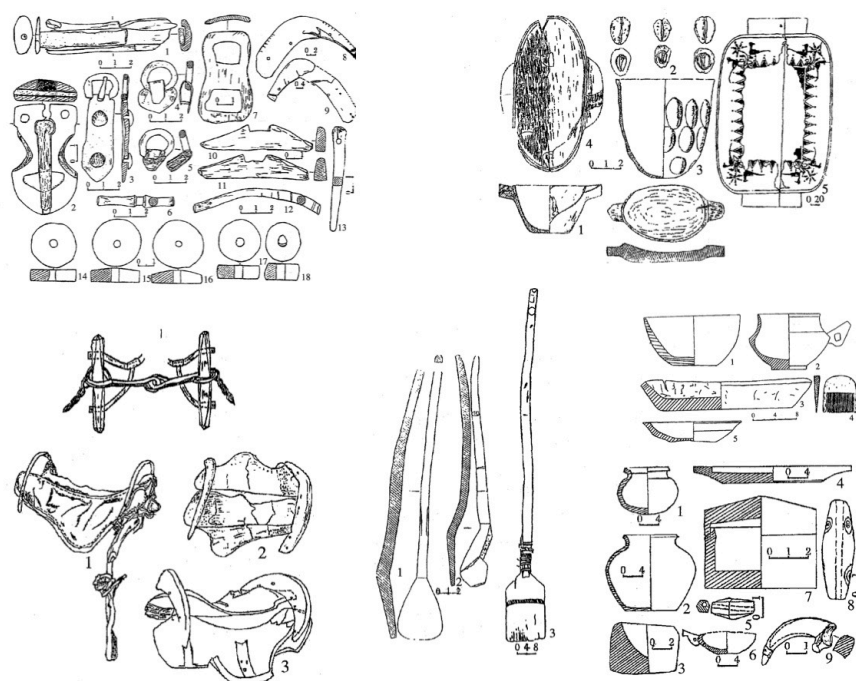
Graves belonging to Zhagunluk Phase III were excavated in 1996 (11) and 1998 (19).<sup>76</sup> Lateral niche graves (18) with one and occasionally two niches were the dominant grave type, followed by square or rectangular shaft graves (12) sometimes covered with wooden roofs (Fig. 8.25).

<sup>75</sup>Bergman 1939; Ahemaiti Rexiti 1995; A Dexiu 阿德修 1995; Xinjiang Bowuguan et al. 2002; Xinjiang Weiwu'er Zizhiqu Bowuguan et al. 2003; see further also Huiqiu 2008; Xinjiang Bowuguan et al. 2014; Xinjiang Weiwu'er Zizhiqu Bowuguan et al. 2014.

<sup>76</sup>Xinjiang Bowuguan et al. 2014; Xinjiang Weiwu'er Zizhiqu Bowuguan et al. 2014.

The 11 graves of Phase III excavated in 1996 are mainly concentrated along a northeast-southwestern axis at the edge of the southern cemetery. This distribution pattern suggests they were added to an older cemetery. This could imply that people from elsewhere – with both shaft and niche grave practices – settled here and joined a local group.

The grave mouths of Phase III are trumpet-shaped and marked with irregular small earthen mounds of greyish gravel sand. An eastern body orientation reportedly prevailed.<sup>77</sup> It is probably more accurate to say a northeastern body orientation dominated, since orientations fall largely between 22.5° and 67.5°. Though many graves and human remains were disturbed, single extended burial probably prevailed, next to the occasional double burial.



**Figure 8.26** – Grave assemblage of Zhagunluk Phase III (After ‘Qiemu Zhagunluke yihao mudi’, 718–719, Figs. 56–58; ‘1998 nian Zhahongluke disanqi wenhua muzang fajue jianbao’, 754, Fig. 8; 758, Fig. 13; 759, Fig. 15; 763, Fig. 21).

The assemblage of Phase III is similar to that of Phase II, though import goods are more numerous and varied. Grave goods include wooden jars, plates, spindles, combs, awls, bowls, ladles, next to a wooden hoe/manual plough, wooden saddles and saddle ‘bridges’, stock whips, cheekpieces, belt buckles and buttons (Fig. 8.26).

The date of Phase III is supported by such objects as wooden or lacquered *erbe* cups from the Han or its successors, lacquer footed trays, a Persian-style faceted glass cup dated 3<sup>rd</sup>–4<sup>th</sup> c. CE,<sup>78</sup> a leather cosmetic box, silk fabrics, and a fragment of a Chinese document.

<sup>77</sup>Xinjiang Weiwu’er Zizhiqu Bowuguan et al. 2014, 749, 757.

<sup>78</sup>Zhao Yong 2014.

There are iron objects including a needle, horse bit and knife, bronze objects including a spoon, mirror, and belt buckles, alongside a stone ball and stone spindle whorls. One shaft grave, M73, has a lacquer footed tray, sea shells, iron needle, leather cosmetic box, food items, cotton, silk, and a document fragment with Chinese characters. The latter show connections with the sites of Niya, Loulan and Astana, as well as the Eastern Han or its successors the Wei and Western Jin, the Persians, and the Kushans. Lacquer objects are of lesser quality than those of Phase II. There is little pottery, mostly hand-molded jars, sometimes featuring imitation wheel-thrown pottery mouths, and wheel-thrown grey ware known from eastern Xinjiang. Some horn, leather, wool and silk items, perhaps locally produced, are also seen. Prestige objects seem more numerous in shaft than niche graves, although one *erbei* cup was unearthed from a niche grave (Fig. 8.26).

Cereals and food remains from Phase III at Zhagunluk suggest irrigation agriculture. Common finds of sheep/goat skulls demonstrate the importance of herding. Horse tack was common, though there is no evidence for horse sacrifice in this phase.

In conclusion, lateral niche graves appear in the southern Tarim Basin at Zhagunluk during Phase III (c. 50–400 c. CE). They represent a majority practice but are distributed side-by-side with shaft graves. The graves feature low-rising mounds, a northeastern body orientation, a trumpet-shaped grave mouth, and sheep/goat sacrifice.

### 8.6.5 Conclusion

Only small pockets of lateral niche graves were found in the drainage basins of the Tarim River, Boston and Lop lakes, notably at Chawuhugou, Yingpan and Zhahunluk. Two groups are distinguished.

The earliest group is represented by Chawuhugou Cemetery III (c. 0–150 CE, 109 ff.), and characterised by stone pebble mounds with a diameter of 3–5 m, one (exceptionally two) lateral niches, single (occasionally double) extended burials and an eastern body orientation. Niche graves existed side-by-side with shaft graves. In comparison with earlier cemeteries, a shift took place from horse, cattle, and some sheep sacrifice, to horse and sheep sacrifice, while cattle virtually disappeared. Whole horse sacrifice is only known from one niche grave. The size of the cemetery suggests the population declined in number during Phase III. Grave goods include long swords, buckles with hinged tongues, gold belt plaques with animal motifs, a bronze mirror (from a ledged shaft grave), silk and lacquer, attest to an increasing mobility and a network extending to the Ordos and Mongolian steppes, the western steppes, and the Eastern Han.

The second group is dated c. 50 to 400 CE, and represented by Yingpan and Zhagunluk III (114 ff.; 116 ff.). Niche graves show a certain spatial segregation in the cemetery, though are mainly distributed side-by-side with shaft graves. They have one (occasionally two at Zhagunluk III) niches, and show considerable integration with existing burial practices. In Yingpan, shaft graves featured plank wood coffins and poplar trunks on the surface, while niche graves did not have coffins or wooden surface marks, although plank wood was used to seal the niches (Fig. 8.24). This suggests niche making was a significant element in a distinct burial system. While no mounds are seen in Yingpan, the Zhagunluk III graves featured inconspicuous mounds. At both cemeteries, double and multiple burial existed alongside double burial. Shaft graves and an eastern body orientation prevailed at Yingpan, while niche graves and a northeastern orientation prevailed at Zhagunluk.

Grave goods in the latter suggest shifting network connections. At Yingpan, cosmetic boxes of lacquer, silk, cotton and a hemp paper fragment with Kharoṣṭhī show affiliations with the Kushan empire, the eastern Han and its successors, and the Mediterranean world (Fig. 8.24). In Zhagunluk, lacquered *erbe*i cups, lacquer footed trays, a faceted glass cup, a leather cosmetic box, cotton, silk, and a document with Chinese characters (Fig. 8.26), all show engagement with elites from the Han, Wei and Western Jin, Kushan and Sasanian empires.

At Yingpan crop-farming and limited sheep herding was practiced. At Zhagunluk Cemetery III, irrigation agriculture was practised alongside a considerable degree of sheep/goat herding. Horse gear was common, though evidence of horse sacrifice is absent in this phase.

To conclude, niche graves emerged late in the Tarim Basin, and in small numbers. Those of Chawuhugou III appeared first (c. 0–150 CE) showing connections with the Han and steppe empires to the east. Those of Yingpan and Zhagunluk emerged between c. 50 and 400 CE and engaged in a new Inner Eurasian network characteristic of that period. Niche grave occupants possibly arrived in small numbers from the Tianshan mountains and the Turfan Basin, where this grave type appeared earlier and in greater numbers, and moved from there southward to Yingpan at the foot of the Kurak Tag and further towards Zhagunluk in the southern Tarim. Nowhere did they enjoy a special status. At Zhagunluk, the distribution of grave goods even suggest that shaft grave occupants enjoyed more status.

## 8.7 Conclusion

The discussions in Chapt. 8 allowed identifying four phases in the development of early niche grave practices in the Tianshan Mountains and adjacent basins: 1) introduction and consolidation in the upper Yili Basin in the Western Tianshan mountains; 2) dispersion into the middle Yili Basin; 3) formation of two new power centres in the Balikun grasslands and Turfan Basin (the latter discussed in Parts III and IV); and 4) secondary spin-offs leaving pockets of niche graves into the central Tianshan and Tarim Basin.

In my conclusions on the Yili Basin, I distinguished three phases in the developments of niche graves and hypothesised on their origins (94 ff.). The Early Phase (c. 900–500 BCE) was represented by Qiongkeke I in the upper Yili Basin (82 ff.). Based on radiocarbon dating, overlap with Andronovo remains, and similarities with the Beshkent valley in the upper Amu Darya basin, I hypothesised that niche grave practices were introduced from the latter. Between c. 900–500 BCE, Qiongkeke I represented a large ritual centre with ritual infrastructure, accommodating different mounded grave types. Lateral niche graves with northern niches prevailed, but existed side-by-side with shaft graves and other types, all featuring a western body orientation. Grave goods were modest in quality and quantity, and showed an even distribution. Hand-molded painted pottery including round-bottomed long-necked jugs and bowls were common. Sacrifice of sheep/goat skull was common too, but no horse sacrifice or deposition of horse gear was reported.

I argued that around c. 500 BCE, this primary centre of Qiongkeke I was abandoned, possibly due to migration. The most important movement of people may have taken place during the Middle Phase (c. 500–300 BCE), when changes took place in grave goods, distribution pattern, and to some degree grave structure, as suggested by Sodunbrak and the early phase of Qirentuohai (86 ff.). Migration from the upper towards the middle Yili Basin is supported by evidence from the Kapshagay site cluster where niche graves appeared c. 300 BCE and grew popular between c. 100 BCE and 100 CE (89 ff.). This cluster represented the Late Phase but showed strong continuity with Qiongkeke I, albeit without painted pottery and with a sharp decrease in sheep sacrifice. Migration from the upper Yili Basin towards the foothills of the Trans-Ili Alatau, possibly took place even earlier, from c. 500 BCE onward (§ 8.3).

This eastward push left a vacuum in the upper Yili Basin, which became receptive to new influences. After c. 200 BCE, contact between this area and the Turfan Basin is suggested by a north(east)ward body orientation, camel sacrifice, whole horse sacrifice, and

niches half-way up the wall also seen in Jiaohé Goubei. Such features were rare and may be introduced via the Chaiwopu depression or the Alagou valley.

Discussion of the sites Chaiwopu, Shihezi Nanshan and Choumeigou in the central mountains and Bogda foothills, highlighted the pivoting role of this area (§ 8.4). Contact between the central Tianshan Mountains and the Balikun grasslands, is attested by similar bronze plaques with moon-shaped perforations from Chaiwopu and Heigouliang. The western body orientation and deep niche graves marked with stone-earth mounds suggest connections between Chaiwopu and the Yili Basin. Painted pottery from Chaiwopu indicated links with the Turfan Basin (Fig. 8.19). The Chaiwopu site (c. 500–200 BCE) thus provided an interesting case for understanding the links between niche grave practices in the Yili Basin, Turfan Basin, and Balikun grasslands.

With the declining influence of niche grave occupants in the Yili Basin, by 200 BCE, two new centres had emerged where lateral niche grave practices were promoted and where their occupants had considerable status. One centre took form in the Turfan Basin (Parts III and IV). The other centre was represented by Heigouliang and Dongheigou in the Balikun grasslands (103 ff.), characterised by mounded lateral niche graves, southern niches, a western body orientation, single extended burials with some secondary, double and multiple burials. Ritual infrastructure, and sacrifice of sheep, cattle, horse, camel, and even humans, notably in niche graves, attest to considerable control of the pastoralist elites in this summer camp. Seasonal mobility into the Hami Basin or Hexi Corridor promoted exchange. The almost identical carved bone bow tips found in the Turfan Basin and Balikun grasslands, epitomises the relations between the niche grave elites of both areas (Fig. 8.19).

Surprisingly, there is no evidence for an influential niche grave population at Chawuhugou III (0–150 CE), despite its strategic position in the central Tianshan area, where pastureland abounds, and where one of the most numerous and powerful horse-riding pastoralist communities of the Tianshan area dwelled during the Early Iron Age (109 ff.). The share of niche graves was limited, though this could be the result of incomplete excavations. Furthermore, the number (MNI) of horses sacrificed dropped though remained important, while that of sheep rose dramatically. Finally, the material culture of Chawuhugou III attested to links with the Ordos, the Mongolian and western steppes, and the Han.

Between c. 50 and 400 CE, small pockets of niche graves popped up at Yingpan at the foot of the Kuruk-Tag, and at Zhagunluk III in the southern Tarim Basin (116 ff.; 114 ff.). There is no evidence suggesting their occupants enjoyed special status, so their influence was limited. There was considerable integration with local burial architectural practices,

yet niche making, and the resistance to using wooden burial devices and surface structures at Yingpan, set niche grave occupants apart from shaft grave occupants. An eastern body orientation was common at Yingpan, while a northeastern body orientation with low-rising mounds characterised Zhagunluk III. The Yingpan people practiced limited sheep herding and crop farming. The Zhagunluk III population practised irrigation agriculture and sheep herding. Horse gear was found at Zhagunluk III, though there is no evidence for horse sacrifice. Faceted glass cups, lacquer, cotton, silk, and bronze mirrors, from Yingpan and Zhagunluk III suggest a network engaging the Eastern Han, Wei and Western Jin, Sassanians, Kushans, and steppe powers of the time.

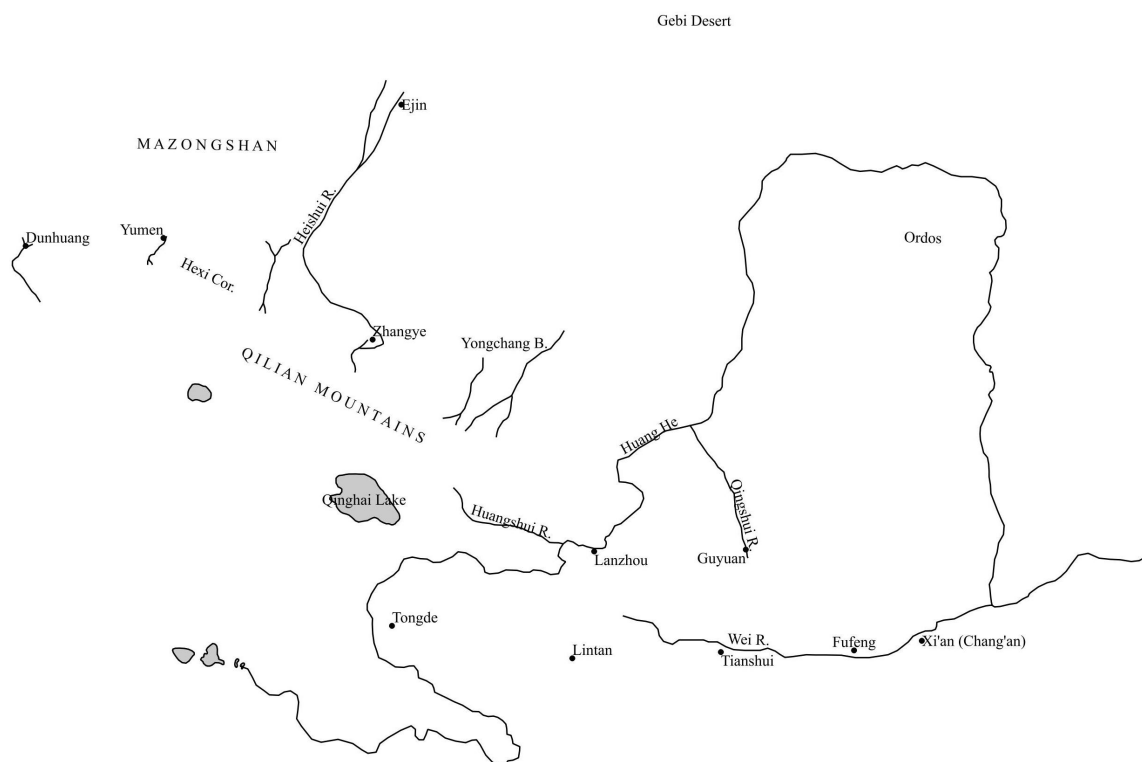
To conclude, the largest niche grave concentrations were found in the Tianshan mountains and their immediate vicinity, and belonged almost exclusively to the lateral type. Niche grave occupants relied predominantly on pastoralism as this was core to subsistence activities in the Tianshan area. The oasis people too engaged in a system of vertical transhumance and, depending on the location, this was complemented with varying degrees of crop farming. At the foot of the Kuruk Tag and in the southern Tarim Basin only pockets of niche graves were found, perhaps because their occupants could not thrive in these areas, especially after their desertification. The significance of pottery in the areas discussed, and the size of the summer camp in the Balikun grasslands, point nevertheless to an important degree of sedentism among the niche grave population here.



# 9 Hexi Corridor, Huang He and Liaohe Basins, South Siberia

## 9.1 Introduction

This chapter discusses niche grave practices east of the Tianshan Mountains. A review of excavation reports demonstrated that these mainly concentrated in the Hexi Corridor, the upper and middle Huang He basin and, to a lesser extent, the Liaohe Basin (Fig. 9.1; 3, Fig. 1.1).



**Figure 9.1** – Map of the Hexi Corridor, and the upper and middle Huang He basin.

The Hexi corridor is a 1200 km long passageway between the Gobi Desert to the north-east and the Tibetan plateau to the southwest. Melting water from the Qilian Mountains,

the northern edge of the Tibetan plateau, creates multiple streams which eventually disappear into the desert. These form the main water source for a string of fertile oases along the corridor.

The north-western part of the Hexi Corridor is part of the Loess Plateau, which extends from the upper to the middle Huang He basin. This aeolian and fertile deposit of up to several hundred meters thick, supports farming and herding. It was an important contact zone between the Tianshan Mountains and adjacent basins in the west, the upper and middle reaches of the Huang He in the east, and the northern steppes. Sheep/goat may have been introduced together with wheat from the Middle East through this corridor into the Late Neolithic cultures of the Huang He Basin.<sup>1</sup> The same is true for horse and perhaps cattle, though cattle may also be introduced from neighbouring regions.<sup>2</sup>

The Bronze Age witnessed increased contact between the northwestern areas including Xinjiang and the Hexi corridor, and the Inner Eurasian steppes. This is visible in metallurgical developments and artefacts.<sup>3</sup> The earliest copper and bronze artefacts in what is now China were found in the Majiayao culture (3300–2650 BCE) and subsequent Banshan and Machang cultures (2650–2000 BCE).<sup>4</sup> Evidence for early copper and bronze metallurgy alongside remains of domesticated cattle and horse were found in the Qijia culture (2000 BCE). The Siba, Kayue and Xindian cultures developed after these early Bronze Age developments. Li Shuicheng further demonstrated contact between the Siba culture in the eastern Hexi Corridor, and the Hami Tianshan Beilu and Yanbulake cultures in the Hami Basin.<sup>5</sup> All cultures in the Hexi Corridor, from the Late Neolithic to the Bronze Age, featured painted pottery, but this ended with the emergence of the Shajing culture.

From the late 2<sup>nd</sup> millennium BCE, the northern zone including the Hexi corridor and Inner Mongolia, saw a steady transition from a crop farming-based to a pastoral-based economy in which cattle, sheep and horses (along with wheeled transport) became increasingly important. The desert and steppe zone of the Hexi corridor and Inner Mongolian were more arid than the lower Huang He and Wei River valleys, and therefore facilitated such a development. Around 800 BCE, horse-riding pastoralist communities emerged as part of a larger process across the Eurasian steppe and forest regions.<sup>6</sup> Powerful horse-riding pastoralist elites thus took form. Chinese records mention three supra-tribal confederations active in

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<sup>1</sup>Barnes 1999, 155.

<sup>2</sup>Fu Luowen et al. 2009; in Wang Hui 2014, 73.

<sup>3</sup>Wang Hui 2014; Shui Tao 2001; Li Shuicheng 1994.

<sup>4</sup>Wang Hui 2014, 72.

<sup>5</sup>Li Shuicheng 1994.

<sup>6</sup>Cosmo 2002, 886.

the 3<sup>rd</sup> c. BCE: the Xiongnu in the Ordos Region, the Yuezhi in the Dunhuang region to the west, and the Donghu in eastern Mongolia and along the borders of Manchuria.<sup>7</sup>

Pastoralists from the north interacted increasingly with the northern Zhou states, followed by the Qin and Han empires. This caused conflict and warfare and triggered migrations of the Yuezhi and Wusun, who originally dwelled in the Hexi Corridor and now moved westward into the Tianshan mountains and beyond. Together with the Xianyun, Rong, Qiang and Di, the Yuezhi and Wusun are all difficult to pin down as archaeological cultures. Of all ethnonyms, the Xiongnu have probably most extensively been associated with archaeological remains.<sup>8</sup>

The Xiongnu formed a confederacy under the leadership of Maodun in 209 BCE. From the Ordos they took back territories lost to the Qin, took control of pastoralist tribes in Inner Mongolia, the Donghu in eastern Mongolia and along the borders of Manchuria. At about 174 BCE, they expelled the Yuezhi from the Hexi Corridor, into the Tianshan Mountains, from where the latter moved into the Yili Basin and beyond through Sogdiana and Fergana, eventually reaching the Amu Darya.

After Western Han emperor Wudi (r. 141–87 BCE) gained information on the Western Regions from his envoy Zhang Qian, the Xiongnu were pushed back and the Hexi corridor was brought under Han control. Han and Xiongnu were now evenly matched enemies striving for control over the western territories. Precious goods travelled through these regions and held important information on the shifting allegiances of that period. Horses were among the most important assets traded from the west, and were valued for military, transportation, and economical reasons.

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<sup>7</sup>Christian 2006 [1998], 128.

<sup>8</sup>See Brosseder et al. 2011.

## 9.2 The Huang He and Liaohe basins (c. 4000–2000 BCE)

### 9.2.1 The Guanzhong Basin (c. 4000–3500 BCE)

Yangguanzhai in the Guanzhong Basin, yielded the earliest niche graves so far discovered in present-day China. The site is located on the northern bank of the Jing River, near the confluence with the Wei in the middle Huang He basin (123 Fig. 9.1). It comprises a settlement of the Miaodigou culture and a southern area attributed to the Banpo IV culture. The cemetery is situated north-east of the settlement. Heavy erosion obstructed investigating how graves were sealed. Shaft and niche graves were excavated. The lateral niches are only large enough to hold one extended burial, and entry shafts are 60–70 cm deep. Excavations have been on-going since 2009 but at the time of finalising this dissertation, only the excavation of the settlement, not the cemetery, had been published.<sup>9</sup> The first niche graves were excavated at the time I visited the site in May 29<sup>th</sup> 2015. They were dated to the middle neolithic Miaodigou I phase (c. 4000–3500 BCE). Some grave goods resemble those of the Qijia culture (c. 2000 BCE).

### 9.2.2 The western Liaohe and Sanggan basins (c. 3000 BCE)

Around 3000 BCE, niche grave practices appear in the western Liaohe and Sanggan basins in northeast China. They are attributed to the early Chalcolithic Xiaoheyuan and Wufan types of the late Xueshan I culture.<sup>10</sup> The two examples in Fig. 9.2 are from Danangou in Ongniud Banner in Chifeng in Inner Mongolia, respectively Jiangjialiang in Yangyuan in Hebei. The former features a shallow entry shaft and lateral niche without sealing, and a flexed burial on the side. One quarter or 19 out of 83 are niche graves at Danangou.<sup>11</sup> The Jiangjialiang example features two steps leading to a lateral niche with a flexed burial. 7 or 10% are niche graves here.<sup>12</sup>

<sup>9</sup>Shaanxisheng Kaogu Yanjiuyuan 2009; Shaanxisheng Kaogu Yanjiuyuan 2011.

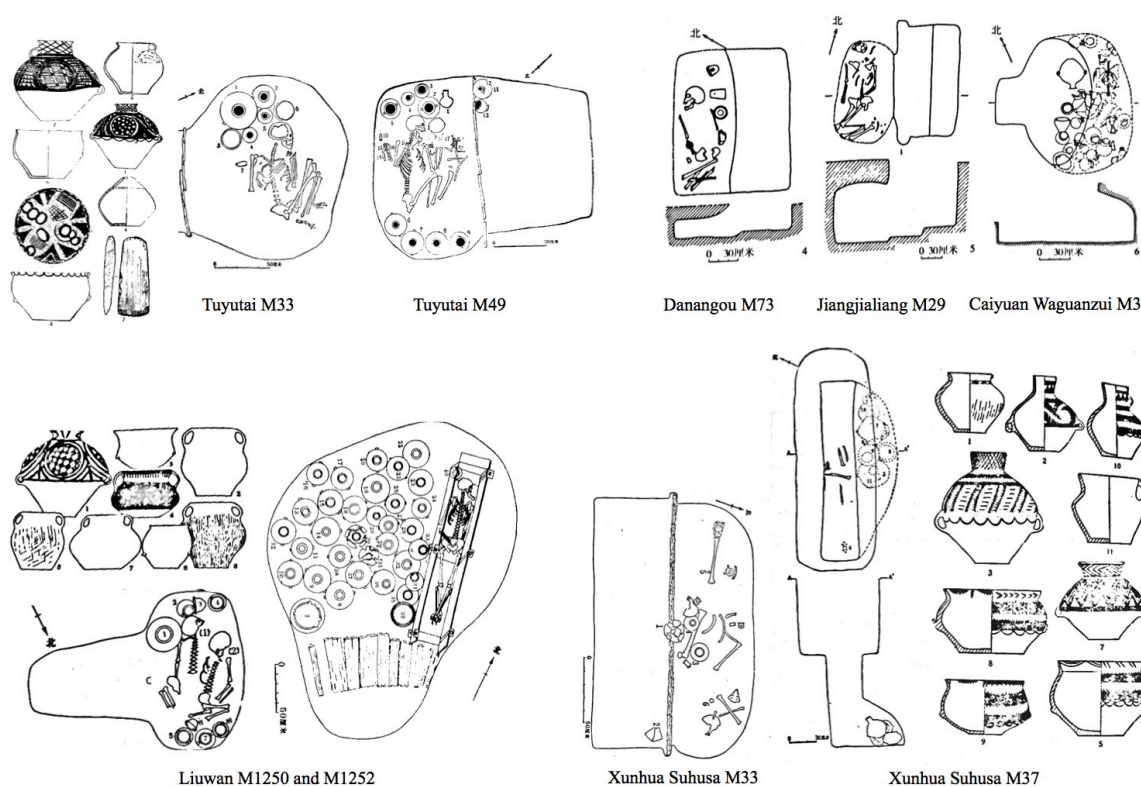
<sup>10</sup>Absolute dates for the Xueshan I culture fall within the range of 3600–2900 BCE. See Han Jianye 2003; Han Jianye 2013, 58–59.

<sup>11</sup>Liaoningsheng Wenwu Kaogu Yanjiusuo et al. 1998.

<sup>12</sup>Hebeisheng wenwu yanjiusuo 2001.

### 9.2.3 The Caiyuan and Majiayao cultures (c. 2500–1900 BCE)

From c. 2500 BCE onward, niche grave practices are seen in the upper Huang He basin, at sites of the Majiayao, Banshan and Machang and Caiyuan cultures. There is no agreement on the relation between the Majiayao, Banshan, and Machang cultures, although they are closely related. Some consider all three as a late phase of the Yangshao culture, others see the Majiayao as an independent culture with three phases including an Early or Majiayao phase, a Middle or Banshan phase, and a Late or Machang phase.<sup>13</sup>



**Figure 9.2** – Niche grave practices. UPPER LEFT: Banshan-type, Tuyutai site, Lanzhou (After Gansusheng Bowuguan et al. 1983, 195, Fig. 3 (M33 and M49)). UPPER RIGHT: Xueshan and Caiyuan cultures (After Han Jianye 2007a, 34, Fig. 2, Danangou M73, Jiangjialiang M29 and Caiyuan Waguangzui M3). LOWER LEFT: Machang-type, Liuwan site, Qinghai (After Qinghaisheng wenwu guanlichu et al. 1984, 76, Fig. 59, M1250 and M1252). LOWER RIGHT: Machang-type, Xunhua Suhusa, Qinghai (After Qinghaisheng Kaogu Yanjiusuo 1994, 452, Fig. 20 (M33); 430, and Fig. 4 (M37)).

Han Jianye distinguished two periods in the emergence of niche graves here, the Late Chalcolithic (2500–2200 BCE) and final stage of the Chalcolithic (2200–1900 BCE).<sup>14</sup> He

<sup>13</sup>For discussion and literature on these different views, see Gansusheng Bowuguan et al. 1983, 214; for the formation of the Banshan type and western movement of eastern cultures, see Han Jianye 2007a.

<sup>14</sup>Han Jianye 2013, 61–63.

refers to the same sites as Xie Duanju, although the latter distinguishes instead a Banshan and Machang phase.<sup>15</sup> The developments are summarised as follows.

Niche graves became popular between c. 2500–2200 BCE. They first emerged in the area of Gansu, Qinghai and Ningxia. Shortly afterwards two centres developed in southern Ningxia (the Qingshui Basin) respectively the Lanzhou area (Fig. 9.1).<sup>16</sup>

In the Qingshui Basin, niche graves won the great majority share in the Caiyuan culture at Qiedaoba, Waguanzui, Zhaiziliang and Erlingziwan.<sup>17</sup> In the Lanzhou area, niche graves prevailed in the Majiayao Banshan culture at Tuyutai (31 or 91%), Jiaojiazhuang and Shilidian. At Xunhua Suhusa in Qinghai, also attributed to this culture, only 1 out of 65 was a niche grave.<sup>18</sup>

Between c. 2200 and 1900 BCE, niche grave practices continued in the Majiayao Machang culture in Gansu and Qinghai. In the Lanzhou area they are known from Tuyutai (56%) and Gaolan Meidixian, in the Yongchang Basin from Yuanyangchi; and in the Huangshui basin from Ledu Liuwan and Minhe Mapai (45%) in Qinghai.<sup>19</sup>

In conclusion, there was some variability in the niche grave practices of the upper Huang He basin dated c. 2500–1900 BCE. The largest concentrations were found in the Lanzhou area and Qingshui basin, characterised by perpendicular niche graves – though lateral niche graves existed too – with crouched burials, single, double or multiple burial, and a large amount of painted pottery. Near the end there are some innovative developments towards lateral niche graves and extended burial as illustrated by Xunhua Suhusa.

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<sup>15</sup>Xie Duanju 1987, 1097.

<sup>16</sup>Han Jianye 2013, 61.

<sup>17</sup>Ningxia Wenwu Kaogu Yanjiusuo et al. 2003.

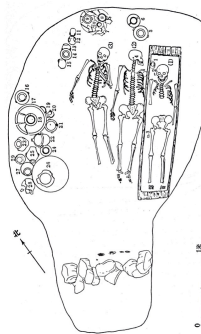
<sup>18</sup>Gansusheng Bowuguan et al. 1983; Gansusheng wenwu gongzuodui 1980; Qinghaisheng Kaogu Yanjiusuo 1994.

<sup>19</sup>Chen Xianxu et al. 1957; Gansusheng bowuguan wenwu gongzudui et al. 1982; Qinghaisheng wenwu guanlichu et al. 1984; Qinghaisheng Wenwu Guanlichu 1991.

### 9.2.4 The Qijia culture (c. 2000 BCE)

The Qijia culture covers the late Neolithic and Early Bronze Age. It is distributed in the upper Huang He basin and its tributaries the Wei, Taohe, Daxiahe and Huangshui, with occasional finds in southern Ningxia (131 ff.) and western Inner Mongolia. Niche graves only occurred in the middle and late phases of the Qijia culture.<sup>20</sup> Calibrated radiocarbon dates for Qijia fall in the neighbourhood of 2000 cal. BCE.<sup>21</sup>

Middle Qijia niche graves are known from Liuwan in the Huangshui Basin (Fig. 9.1). The stratigraphy here covers a Banshan, Machang, Qijia, and Xindian phase. Graves with perpendicular and longitudinal niches, a small entry pit, wooden coffins, and considerable amounts of pottery are seen in the Machang and Qijia phases. During the Banshan phase, secondary burial prevailed followed by extended burial. Extended burial prevailed in the Machang and Qijia phases, though secondary and flexed/crouched were seen too. Single, double and multiple burial exist throughout all the phases.<sup>22</sup>



**Figure 9.3** – Niche grave, Ledu Liuwan, Qinghai (After Qinghaisheng wenwu guanlichu et al. 1984, 189, Fig. 114).

Out of 366 graves belonging to the Qijia phase at Liuwan, 316 (87%) are shaft graves and 48 (13%) are niche graves. The latter show strong continuity with the Machang phase. They are characterised by a small entry pit, a plankwood or round wood sealing of the niche, wooden coffins, and a predominant extended body posture (Fig. 9.3). Out of 426 individuals buried at Liuwan during the Qijia phase, 327 (77%) show an extended posture on the back, 12 (3%) a flexed posture on the side, while the posture of 20% is unknown.<sup>23</sup>

Late Qijia niche graves are known from Lintan Mogou in the Gannan Tibetan autonomous prefecture in Gansu (Fig. 9.1). Only part of the more than 1100 excavated graves

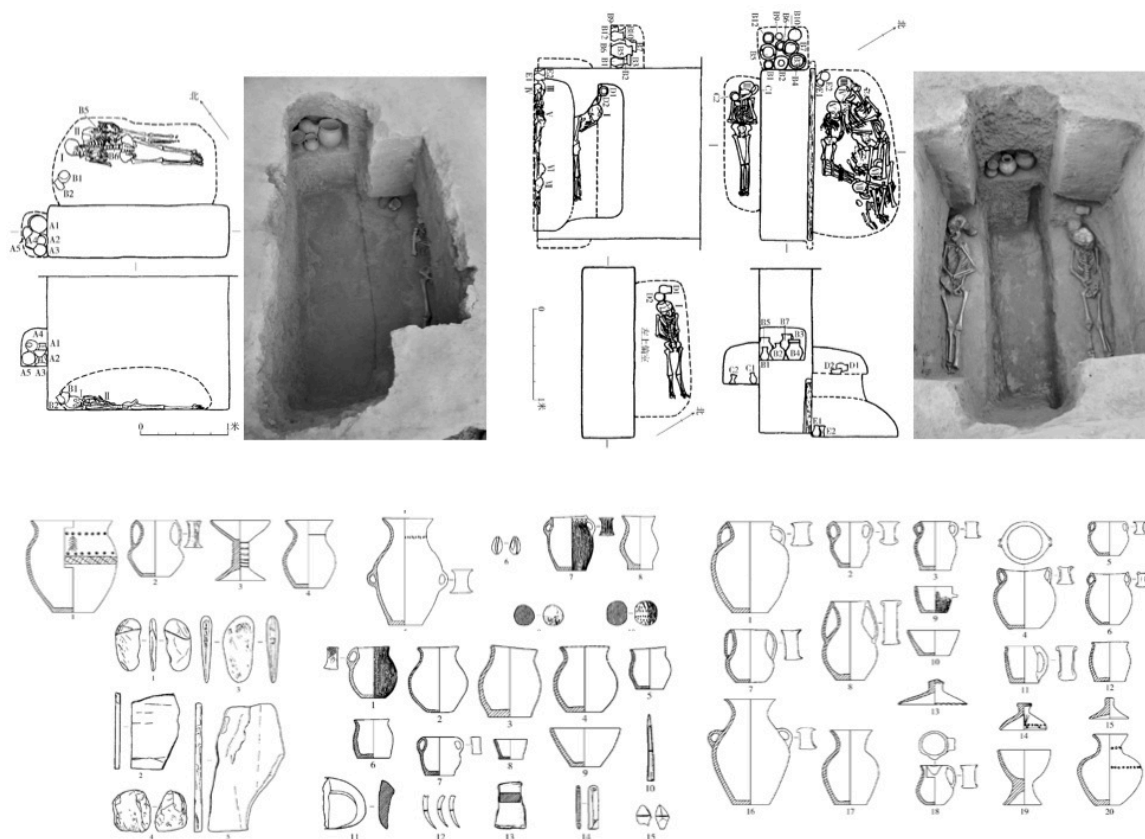
<sup>20</sup>Zhongguo Dabaikequanshu Bianjibu 1986, 8.

<sup>21</sup>The Institute of Archaeology, CASS 1991, 274–286.

<sup>22</sup>Qinghaisheng wenwu guanlichu et al. 1984.

<sup>23</sup>Chen Honghai 2003.

are published, but niche graves seem to prevail.<sup>24</sup> Zhao Dongyue studied 885 graves, and counted 239 shaft graves (27%), 574 single niche graves (65%) and 72 joint and multiple niche graves (8%). He analysed multiple burial practice including various stages of niche creation and body deposition.<sup>25</sup> The layered lateral niche grave structures for double, and multiple burials are unique to the Mogou site (Fig. 9.4). There are primary burials – mostly extended although flexed postures occur too – and secondary burials.



**Figure 9.4** – Niche grave practices at Lintan Mogou, Gansu (After Gansusheng Wenwu Kaogu Yanjiusuo et al. 2009a, 6, Figs. 3 and 4; 12–13, Figs. 14 and 15).

In conclusion, the Qijia culture knew two relatively different niche grave traditions. While both differed from the Machang tradition in their focus on extended burial and distinct pottery, that represented by Liuwan showed continuity with the Machang burial structures, while the Mogou niche graves exhibited an entire new solution for multiple burials with layered lateral niches.

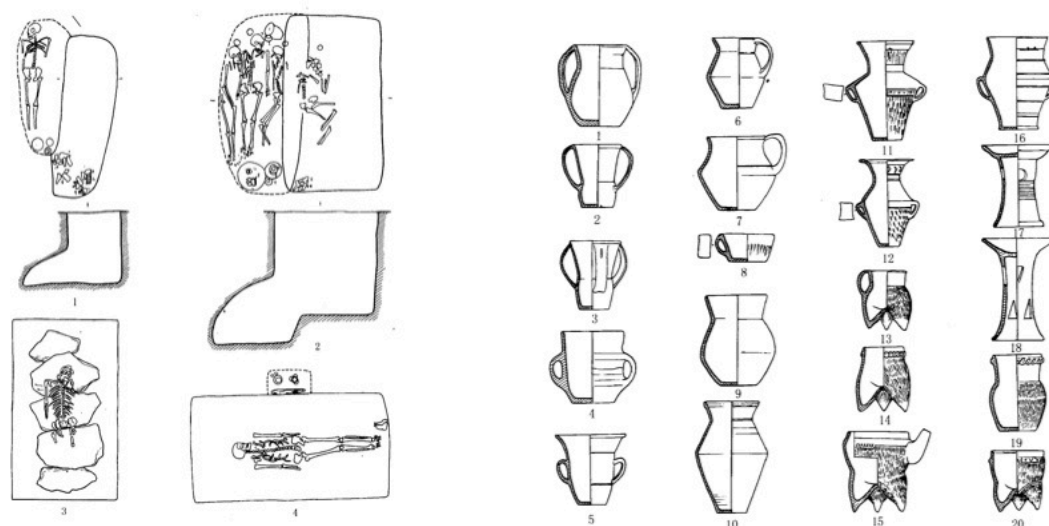
<sup>24</sup>Excavations took place between 2008 and 2011, but only reports of the 2008 excavation have been published, see Gansusheng wenwu kaogu yanjiusuo et al. 2009b; Gansusheng wenwu kaogu yanjiusuo et al. 2009a.

<sup>25</sup>Zhao Dongyue 2012, 6.



### 9.2.5 The Zhukaigou culture (c. 1900–1700 BCE)

Between c. 1900 and 1700 BCE niche grave practices appeared in Hetao, the bent of the Huang He river, at Zhukaigou and Bai'aobao.<sup>26</sup> Bai'aobao is dated c. 1900–1700 BCE.<sup>27</sup>



**Figure 9.5** – Assemblage of the Zhukaigou culture in Hetao. LEFT: 1) and 2) niche graves, Bai'aobao; 3) shaft grave, Zhukaigou; 4) shaft grave, Zhukaigou. RIGHT: Pottery. (After Ma Mingzhi 2009, 20, Fig. 2 and 18, Fig. 1)

Zhukaigou, and especially Bai'aobao, are characterised by a high ratio of niche graves and shaft graves with wall niches for grave goods, sacrificing mandibles of animals, and grey pottery ware in the form of single, double and triple handled jars, high necked jars, and some tripods with pouch-shaped feet. Single, double and multiple burial was common (Fig. 9.5).

Although the sites have been attributed to the Keshengzhuang and Zhukaigou cultures, Ma Mingzhe argued that phases I–IV of Zhukaigou, Bai'aobao, and part of the Shimao remains, belong instead to the late Qijia culture, which spread into this area.<sup>28</sup> Tian Guangjin and Han Jianye only allowed for a strong influence of the late Qijia culture onto the early Zhukaigou culture.<sup>29</sup>

<sup>26</sup>Nei Menggu Wenwu Kaogu Yanjiusuo et al. 1997a; Tian Guangjin et al. 2003; Nei Menggu Wenwu Kaogu Yanjiusuo et al. 1997b.

<sup>27</sup>Han Jianye 2013, 64.

<sup>28</sup>Ma Mingzhi 2009.

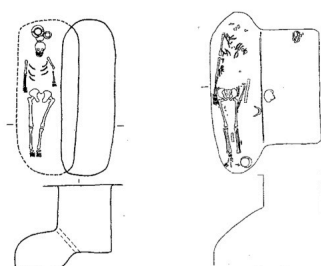
<sup>29</sup>Tian Guangjin et al. 2003; in Han Jianye 2013, 64.

### 9.2.6 The Siba, Kayue, Xindian cultures (c. 1900–800 BCE)

Niche graves emerged in the Siba and Kayue cultures, between 1900 and 800 BCE. The former were distributed in the middle and western Hexi Corridor, the latter in the upper Huang He basin and its tributary the Huangshui. Niche graves also appeared in the Xindian culture, distributed in the upper Huang He basin and its tributaries the Wei, Tao, and Daxia.

Niche graves represented the majority at two sites. The first is Panjialiang of the Kayue culture in Huangzhong Xiaxihe in Qinghai.<sup>30</sup> The second is Huoshaogou of the Siba culture, where most of the 312 excavated graves had lateral niches. Single extended burials prevailed.

Little is published on the Huoshaogou graves, whose occupants sacrificed humans and sheep legs, and showed affinities with the Hami Tianshan Beilu and Yanbulake cultures.<sup>31</sup> The closely to the Siba site related Ganguya, showed strong links with the preceding Machang and Qijia cultures.<sup>32</sup> The Siba culture also showed strong steppe connections. Yang Jidong argued this culture, including Huoshaogou and Ganguya, played an important role in connecting east and west, north and south.<sup>33</sup> Connections between the Siba, Hami Tianshan Beilu, and Yanbulake cultures, already existed in the Bronze Age (124).<sup>34</sup> This connectivity is relevant, and given the similarities with the Shajing niche grave tradition (§ 9.5), the upper bound of the Siba culture may need revision (344).



**Figure 9.6** – Niche graves, Minhe Hetaozhuang (Xindian culture) and Huangzhong Panjialiang (Kayue culture), Qinghai (After Han Jianye 2013b, 60, Figs. 10–11).

Smaller numbers of niche graves were found at Guideshan Pingtai and Datongshang Sunjiazhai in Qinghai (Kayue culture), and at Minhe Hetaozhuang and Huzhu Zongzai in Qinghai (Xindian culture).<sup>35</sup> Niches were closed with boards or roundwood and held primary extended or secondary burials. Examples from Panjialiang and Hetaozhuang show that the

<sup>30</sup>Qinghaisheng Wenwu Kaogu Yanjiusuo 1994.

<sup>31</sup>Gansusheng Bowuguan 1979; Li 2002.

<sup>32</sup>Li Shuicheng et al. 2012, 366; Gansusheng Wenwu Kaogu Yanjiusuo et al. 2016.

<sup>33</sup>Yang 1998.

<sup>34</sup>Li Shuicheng 1994.

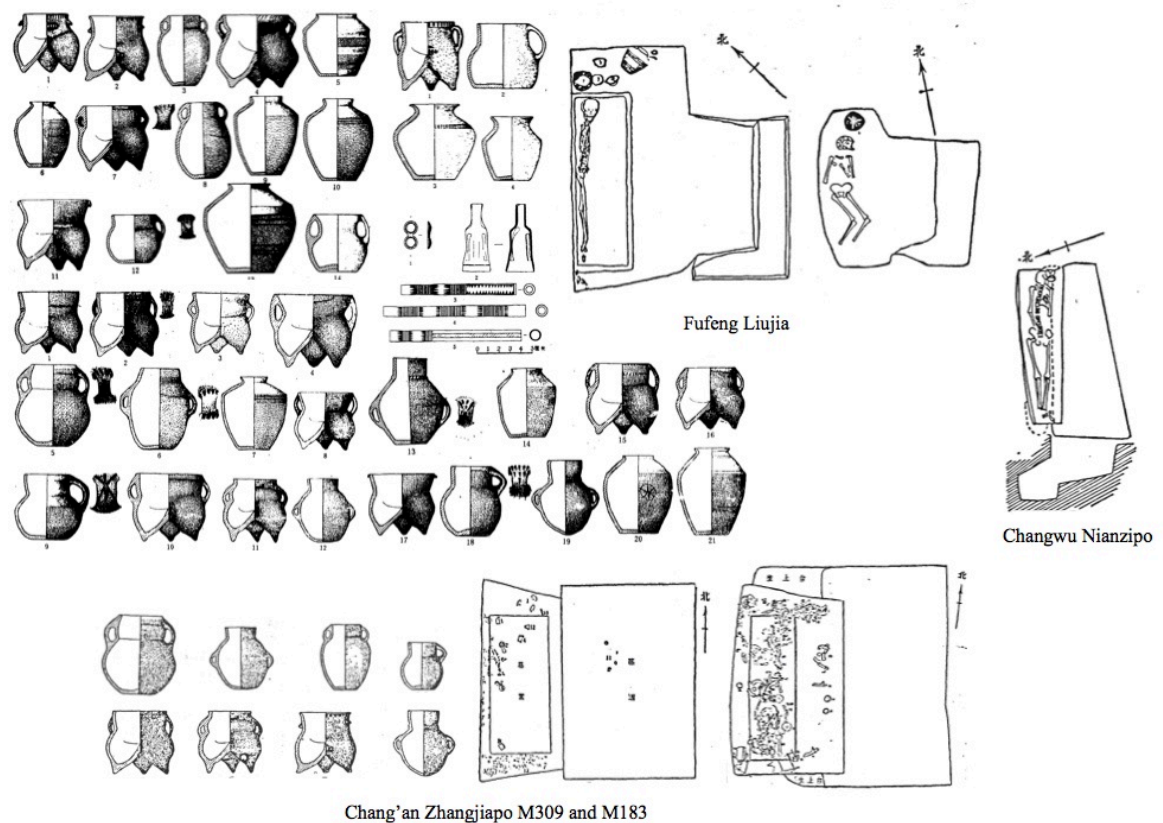
<sup>35</sup>Qinghaisheng Wenwu kaogu dui et al. 1987; Xu Xinguo 1988; Qinghaisheng Wenwu kaogu yanjiusuo et al. 2004.

niche graves belonged to the lateral type (Fig. 9.6). The Bronze Age cultures of Gansu and Qinghai discussed here, show numerous relations with the preceding Machang and Qijia cultures. This is evidenced by the presence of niche graves and similar pottery.

## 9.3 The Wei Valley (c. 1400–300 BCE)

### 9.3.1 Pre-Zhou and Western Zhou cultures (1400–800? BCE)

Between 1400 and 800 BCE – after an absence of two millennia – niche grave practices reappeared in the lower Wei Valley, in Fufeng County and Chang’an (123, Fig. 9.1). At the pre-Zhou cemetery of Fufeng Liujia, out of 16 graves, 15 (93%) are niche graves.<sup>36</sup> In the Western Zhou cemetery of Zhangjiapo in Chang’an, they made up 21 graves (5%).<sup>37</sup> Historically, they have been associated with the Jiang(-Rong).<sup>38</sup>



**Figure 9.7** – Niche grave practices and assemblages from the lower Wei basin: TOP: Fufeng Liujia; BOTTOM: Chang’an Zhangjiapo; CENTRE RIGHT: Changwu Nianzipo. (Adapted from Shaanxi Zhouyuan Kaogudui 1984, 19–22, 26, Figs. 2, 4, 7, 9, 10, 16; and Liang Xingpeng 1996, 69–70, 74, Figs. 1, 2, 5.)

<sup>36</sup>Shaanxi Zhouyuan Kaogudui 1984.

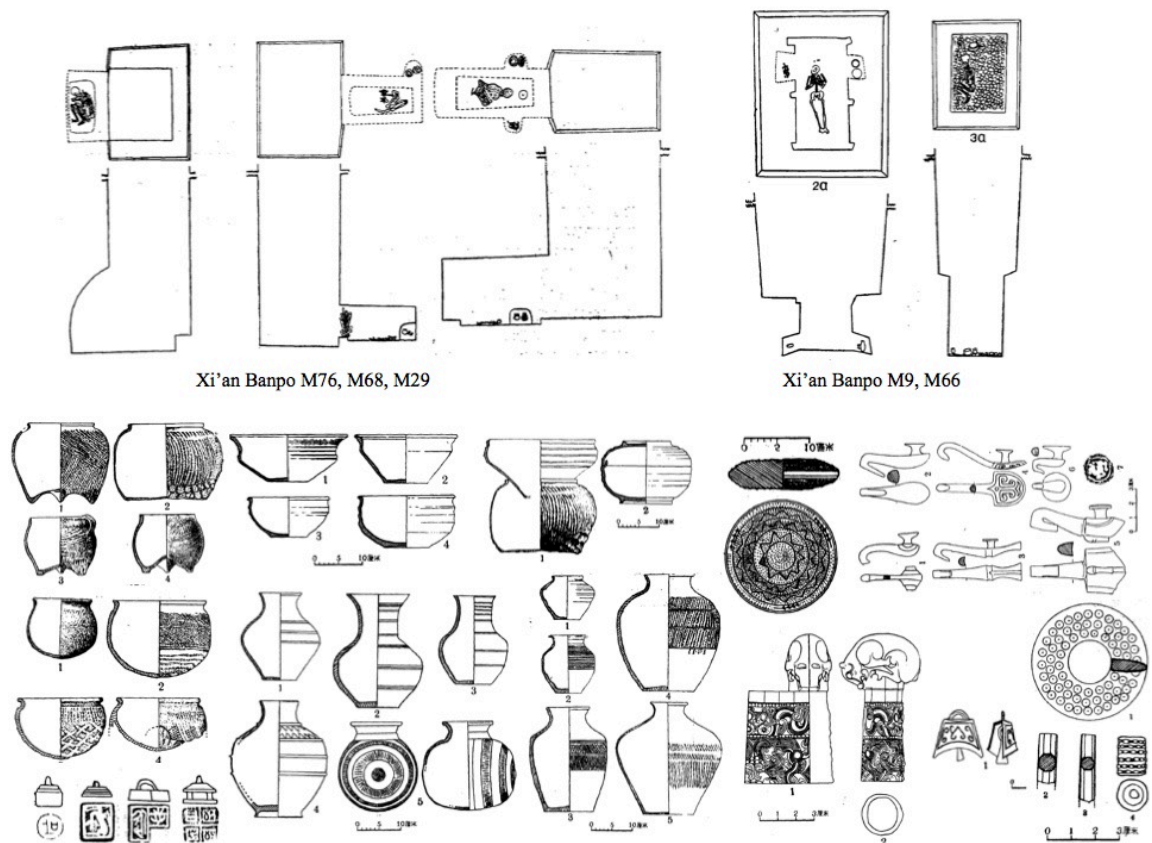
<sup>37</sup>The Institute of Archaeology, CASS 1999.

<sup>38</sup>Liang Xingpeng 1996, 75.

The niche graves of Liujia and Zhangjiapo share the following characteristics: the floor of the entry pit is located higher than that of the niche, and extended postures prevail. At Liujia, niches are often rectangular, ledges occur at one or both sides of the entry pit, niches are longer than the entry pit sticking out at one side, and their entrance is sealed with lumps of earth. The niches at Zhangjiapo are rectangular or trapezoid, slightly shorter than the entry pit, and their entrance is sealed with wooden boards or reed mats.<sup>39</sup> Pottery tripods with pouch-shaped feet and various types of jars are common (Fig. 9.7).

### 9.3.2 The Qin culture (c. 500–300 BCE)

From about the 5<sup>th</sup> c. BCE, niche graves emerged in eastern Gansu and the lower Wei valley, the area associated in historical records with the Qin (Fig. 9.1). Three types can be distinguished, with lateral, perpendicular, respectively longitudinal niches. They coexisted with other types including shaft graves with side-ledges.



**Figure 9.8** – Grave types and assemblage, Xi'an Banpo, Warring States, Qin culture. (After Jin Xueshan 1957, 66, 69, 71, 75, 77, 79–86, Figs. 3–5, 7, 8, 10–19.)

Although niche graves are reported for a great number of sites, they were most popular at Banpo and Ta'erpo attributed to the late Warring States and Qin period. At Banpo, 101

<sup>39</sup>Han Jianye 2013, 64.

niche graves were discovered, representing 90% of all the graves.<sup>40</sup> At Ta'erpo, 281 niche graves were discovered, representing 74%.<sup>41</sup> Han Jianye noted that numbers of niche graves increased in time, even more so in the east than in the west. Most graves have niches in the short side of the wall, while only a minority has laterally positioned niches. The rectangular entry shaft is in all cases much larger than the niche itself.<sup>42</sup>

The different grave types of Banpo are shown in Fig. 9.8. Lateral niche graves (89) prevailed, followed by shaft graves with side-ledges, sometimes featuring smaller niches for grave goods (11), perpendicular niche graves (10), and longitudinal niche graves (2). The (entry) shaft is mostly oriented along a latitudinal axis. In lateral niche graves, body and niche too, are predominantly organised along a latitudinal axis, while in perpendicular niche graves, body and niche are oriented along a meridional axis. Single burials prevail. The dominant posture is crouched (104), and occasionally extended (5). Grave goods include tripods with pouch-shaped feet, high necked jars without handles, cocoon-shaped jars, basins, and bronze items including a mirror, chariot fittings and belt hooks (Fig. 9.8).

In conclusion, niche graves represented a significant minority practice within the Qin culture where shaft graves prevailed. At some sites as Banpo, they made up the majority. The prevalence of crouched body postures is noteworthy. This posture was popular in the Majiaoyao, Banshan, and Machang cultures in the uppermost reaches of the Huang He in present-day Qinghai.<sup>43</sup> However, no evidence of immediate precedents exists, which could explain the presence of crouched body postures in the Qin culture. I suggest transmission from the Qinghai-Tibetan plateau, where this posture lasted well into historical times, but this requires further investigation.

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<sup>40</sup>Jin Xueshan 1957.

<sup>41</sup>Xianyangshi wenwu kaogu yanjiusuo 1998.

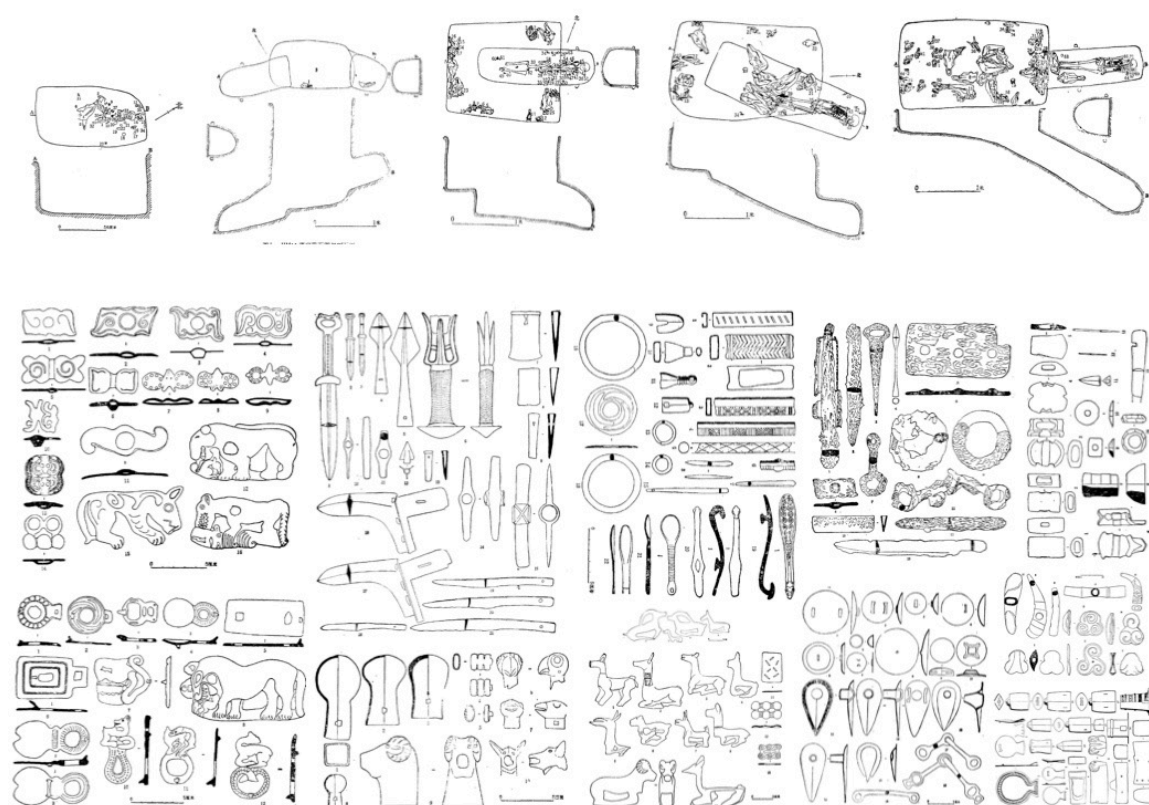
<sup>42</sup>Han Jianye 2013, 70–71.

<sup>43</sup>Chen Honghai 2003, 142.

## 9.4 Hetao, middle Yenisei area and South Siberia (c. 600 BCE–300 CE)

### 9.4.1 The Yanglang and proto-Xiongnu cultures (c. 600–300 BCE)

Between 600 and 300 BCE, niche graves with strong regional features appeared in the Qingshui Basin in the Yanglang culture (Fig. 9.1). They prevailed at Yujiashuang (Pengpu village), Mazhuang (Yanglang village) and Zhangjiecun (Pengyang County) at Guyuan.<sup>44</sup> At Mazhuang 28 out of 29 are niche graves. The dominant type is a grave with longitudinal niches cut out from one of the short walls of a rectangular entry pit. The niche is often only long enough to hold the upper half of the body, while the feet and the rest of the lower body lie in a sunken space inside the entry pit (Fig. 9.9).



**Figure 9.9** – Niche graves and assemblage, Yanglang Mazhuang (After Ningxia Wenwu Kaogu Yanjiusuo et al. 1993, 18, 19, 21, 25, 29, 31–33, 36–38, 41–43, 45, 46, 48, Figs. 6, 7, 9, 13, 16–28).

<sup>44</sup>Ningxia Wenwu Kaogu Yanjiusuo 1995; Ningxia Wenwu Kaogu Yanjiusuo et al. 1993; Ningxia Huizhu Zizhiqu Wenwu Kaogu Yanjiusuo 2002.

The body is laid out on a sloping floor, with the head inside the niche, and the feet inside the entry pit at a higher position than the latter. Single extended burials prevail, though occasionally double burial occurs.

Specific solutions existed for the latter, either featuring one longitudinal niche in each of the short walls (Fig. 9.9), two longitudinal niches as at Yanglang Mazhuang, or two niches perpendicular to one of the long walls of the entry pit. Other diagnostic features are an extended body posture, and large amounts of animal bones inside the niche or entry shaft, notably skulls and hoofs from cattle, horse and sheep (some have up to 200 skulls and mandibles).

The assemblage of Yanglang shows clear influence from the northern bronze culture, but is still considered different from ‘proto-Xiongnu’ cultures in Inner Mongolia represented by Shujigou, Wa’ergou, Taohongbala, Alachaideng, Yulongtai, Xigoupan and Maoqinggou. The Yanglang culture has instead been interpreted as an independent culture, characterised by developed pastoralism, a unique type of bronze weapons, chariot and horse fittings attesting to horse riding and chariot driving skills, clothing ornaments, and niche graves in which the dead are buried with the feet higher than the head. The Yanglang people relied predominantly on pastoralism, suggested by animal sacrifice, few and coarse pottery, and a virtual absence of farming tools, although the large size of the cemetery indicates sedentism was important.<sup>45</sup>

From a historical perspective, the Yanglang culture has been attributed to the Xirong who lived in present-day Gansu (Tianshui, Fengxiang and Lintao counties), Ningxia, and Shaanxi with Dali county in Weinan as their capital. The Xirong had their base near Longshan in Gansu, living south of the proto-Xiongnu people in the Ordos. The vicinity of the Xirong and the pre-Xiongnu people explained, it was argued, mutual influence.<sup>46</sup>

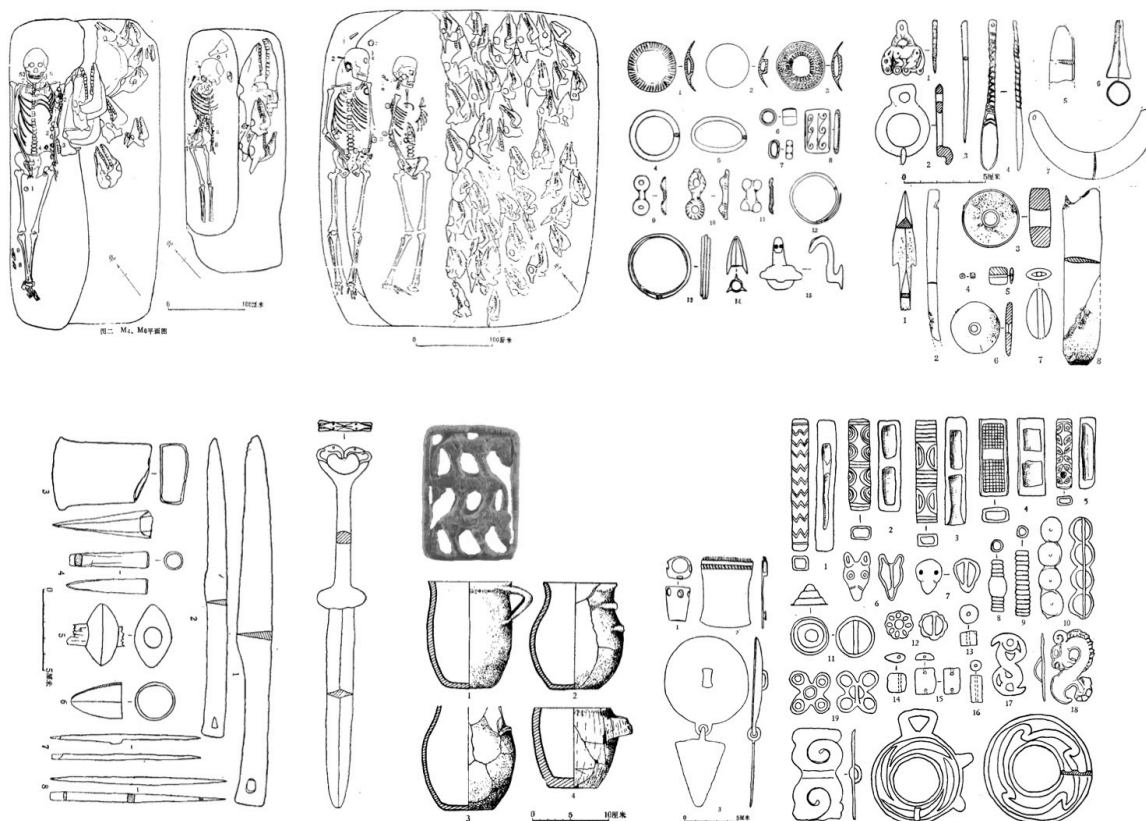
Lateral niche graves were further discovered at Taohongbala, Baotou and other sites of the Taohongbala culture in mid-southern Inner Mongolia. These sites have been attributed to early or proto-Xiongnu culture (Fig. 9.10).<sup>47</sup>

North(east)ern body orientations and single extended burial prevail, though there are also double burials. Pottery is rare, and bronze prevails: belt buckles, arrowheads, tubular and beaded string-like ornaments, knives, a dagger, and an openwork plaque decorated with horse motifs.

<sup>45</sup>Ningxia Wenwu Kaogu Yanjiusuo et al. 1993, 51–52.

<sup>46</sup>Ningxia Wenwu Kaogu Yanjiusuo 1995, 105.

<sup>47</sup>Tian Guangjin 1976; Nei Menggu Wenwu Kaogu Yanjiusuo et al. 1991.



**Figure 9.10** – Niche graves and assemblage, Taohongbala culture, Inner Mongolia. TOP: Baotou Xiyuan (Adapted from Nei Menggu Wenwu Kaogu Yanjiusuo et al. 1991, 15–16, 18, 19, 21, Figs. 2, 3, 5, 6, 9) BOTTOM: Taohongbala (After Tian Guangjin 1976, 134, 136, 138, 139, Figs. 4, 5, 6, 7, 8; Plate II).

The horse plaque strongly resembles samples from Shajing and Zhangjiecun, although the latter is more realistic. There are also bow reinforcements. Animal sacrifice is common, as demonstrated by Baotou Xiyuan. Graves include up to 40 skulls of ovicaprids and up to 6 skulls of cattle per grave.<sup>48</sup>

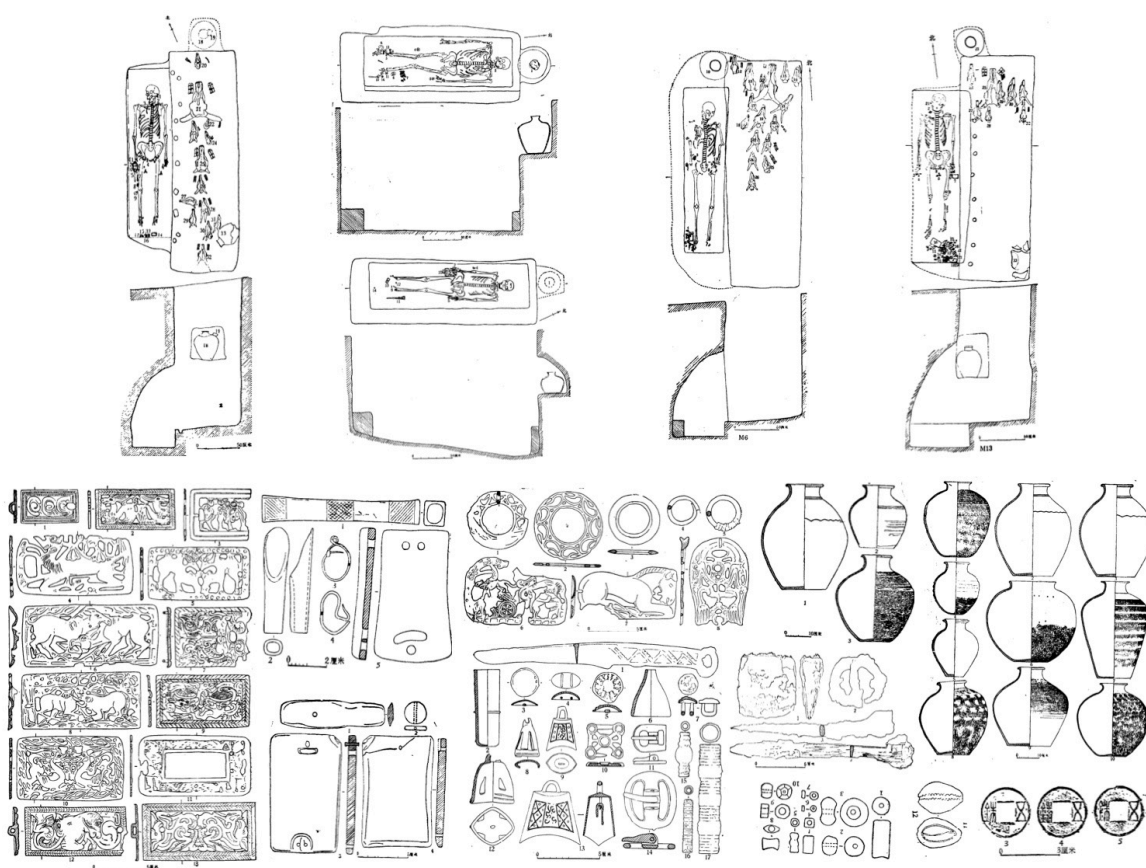
<sup>48</sup>Nei Menggu Wenwu Kaogu Yanjiusuo et al. 1991, 24.



### 9.4.2 Xiongnu Culture in the Ordos, middle Yenisei basin and south Siberia (c. 200 BCE–300 CE)

From c. 200 BCE onward, small numbers of lateral niche graves existed in the Ordos, the middle Yenisei and Minusinsk basins in south Siberia (Figs. 9.1 and 1.1).

Examples from Daodunzi in the Ordos were attributed to the Xiongnu Period.<sup>49</sup> The majority are shaft graves (20), with a minority of lateral niche graves (6), and one cist grave (1). *Wuzhu* coins suggest a *post quem* date of late 2<sup>nd</sup> c. BCE (320).

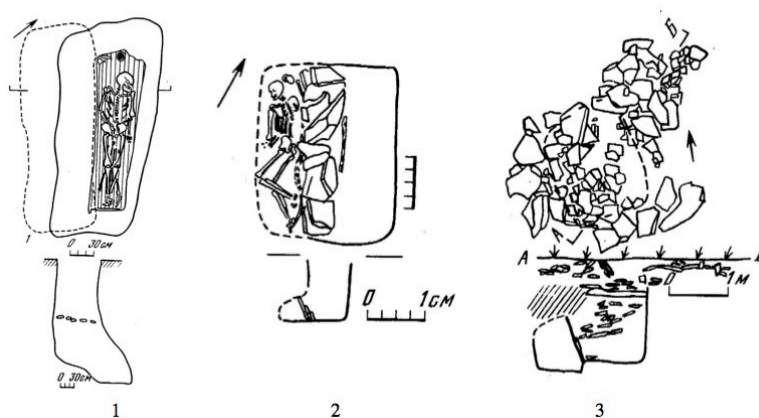


**Figure 9.11** – Niche graves and assemblages, Daodunzi (After Ningxia Huizu Zizhiqu Bowuguan et al. 1987, 34–37 Figs. 3, 5, 7, 8; and Ningxia Wenwu Kaogu Yanjiusuo et al. 1988, 335, 338, 340, 342, 344–346, 348–351 Fig. 5, 2, 7–15).

Single extended burials with northern body orientation prevailed, the feet often positioned higher than the head. Adults were placed inside wooden coffins. Most graves have a small niche in the northern wall of the entry shaft for deposition of pottery and lacquer. Skulls, feet, and occasionally long bones of ovicaprids and cattle are deposited in the entry shaft of most niche graves. Grave goods include grey wheel-thrown pottery jars without handles and with patted or impressed cord and other motifs, bronze belt plaques, buckles,

<sup>49</sup>Ningxia Huizu Zizhiqu Bowuguan et al. 1987; Ningxia Wenwu Kaogu Yanjiusuo et al. 1988.

knives, *wuzhu* coins, ornaments, stone beads, cowries shells, bone, and stone objects (Fig. 9.11).



**Figure 9.12** – Niche graves, Xiongnu period. 1. Kok’el II (Tuva); 2. Aimyrlyg (Tuva); and 3. Tepsey VII (Minusinsk Basin). (After Minyaev 1990b, 76, Figs.1–3)

Similar cultural remains are found in the middle Yenisei basin, at Kok’el KII and Ay-mirlig in Tuva, and Tepsey VII in the Minusinsk Basin, all dated 2<sup>nd</sup>–1<sup>st</sup> c. BCE (Fig. 9.12).<sup>50</sup> Sergei Minyaev noted similarities between niche grave practices of these sites and Daodunzi, including a northward or slightly deviating grave orientation, lateral niches closed with stone or wooden planks, and the presence of animal sacrifice, and artifacts common for the Xiongnu period.<sup>51</sup> The niche graves of all these sites have no local antecedents, so they may originate elsewhere (12).

<sup>50</sup>For Kok’el, see Weinstein et al. 1966; D’yakanov 1970; for Aimyrlyg, see Stambul’nik 1983; for Tepsey, see Gryaznov et al. 1979.

<sup>51</sup>Minyaev 1990b; Minyaev 1990a.

## 9.5 The Yongchang basin in the Hexi Corridor (c. 600–300 BCE)

### 9.5.1 Introduction

Large concentrations of lateral niche graves were found in the Yongchang Basin in the east central Hexi Corridor (Fig. 9.1). They are attributed to the Late Phase of the Shajing culture (c. 600–300 BCE).

The Shajing culture (c. 1000–300 BCE) was discovered by the Swedish geologist Johan Gunnar Andersson in 1923 in the village of Shajing.<sup>52</sup> In the 1970's and 1980's, excavations were carried out at the city site of Sanjiaocheng and the adjacent cemeteries of Hamadun, Shangtugang, Xigang and Chaiwanggang.<sup>53</sup>

No firm chronology has been established for the Shajing culture. Li Shuicheng distinguished an early and a late phase, and was followed by Shui Tao.<sup>54</sup> Radiocarbon dates for the Late Phase fall mainly in the range between 900 (789) and 789 (409) BCE, and this phase was subsequently assumed to be contemporary with the late Western Zhou (1045–771 BCE) and the late Spring and Autumn period (770–481 BCE). Although radiocarbon dates for the Early Phase are absent, by comparison with the Late Phase, a lower bound of c. 1000 BCE was suggested.<sup>55</sup>

Hong Meng reviewed this chronology based on stratigraphic evidence, radiocarbon dates, and comparative research, claiming that the Early Phase should be dated late Western Zhou to mid Spring and Autumn Period, and the Late Phase mid Spring Autumn to early (and some remains mid) Warring States Period (480–221 BCE).<sup>56</sup> I support Hong's later date for the upper bound of the Shajing graves (see Part V). Using calendar dates, the Late Shajing culture can thus be dated c. 600–300 BCE.

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<sup>52</sup>Andersson 1925.

<sup>53</sup>For the excavation reports, see Gansusheng wenwu kaogu yanjiusuo et al. 1984; Gansusheng wenwu kaogu yanjiusuo 1990; Gansusheng wenwu kaogu yanjiusuo 2001; see also Hong Meng 2008.

<sup>54</sup>Li Shuicheng 1994, 11–13(503–505); Shui Tao 2001, 257.

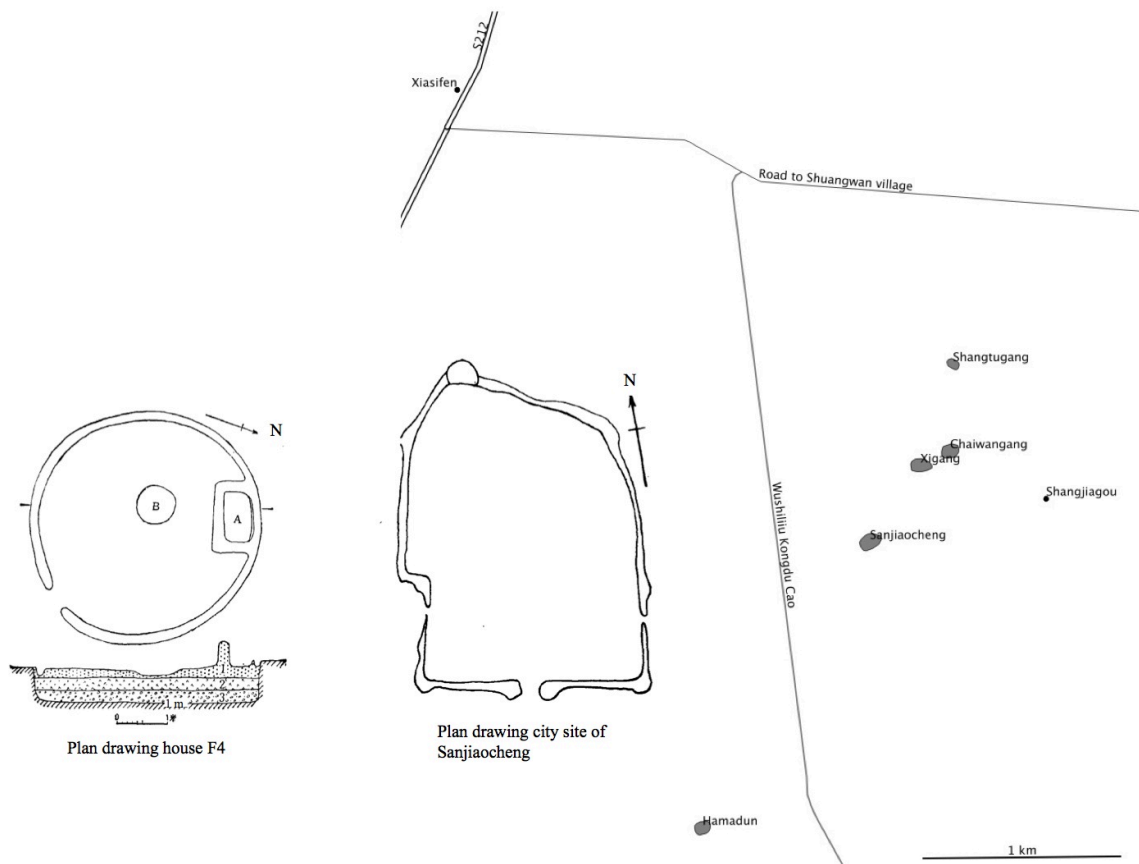
<sup>55</sup>Li Shuicheng 1994, 13(505); Gansusheng wenwu kaogu yanjiusuo 2001, 201–202.

<sup>56</sup>Hong Meng 2008, 19.

### 9.5.2 The city site of Sanjiaocheng and the Shuangwan graves

The Late Phase of the Shajing culture is represented by the city site of Sanjiaocheng west of Shangjiagou village, and the cemeteries Xigang (452 excavated graves), Chaiwangang (113), Shangtugang (5) and Hamadun (20). These cemeteries are called the ‘Shuangwan graves’.<sup>57</sup> They are distributed in a vast open stretch of land between the Qilian Mountains in the south and an eastern outlier of Longshou Mountain in the north.

Sanjiaocheng is a north-south oriented rectangular city of 154x132 m. The lower part of the enclosure walls is cut out from the virgin soil, upon which the upper part is built using excavated soil blocks. House foundations suggesting yurt-like constructions were found inside (Fig. 9.13).<sup>58</sup>



**Figure 9.13** – Late Shajing culture. LEFT: House F4 (After Gansusheng wenwu kaogu yanjiusuo et al. 1984, 598, Fig. 1). CENTRE: City plan of Sanjiaocheng (After Gansusheng wenwu kaogu yanjiusuo 1990, 208, Fig. 3). RIGHT: Site distribution plan. (Drawing by the author).

<sup>57</sup>Hong Meng 2008, 1, note 5.

<sup>58</sup>Gansusheng wenwu kaogu yanjiusuo 1990, 207–216.



**Figure 9.14** – View of the terrace on which the cemetery of Hamadun is located, Gansu Province (Photograph by the author).

The cemeteries Xigang, Chaiwangang, and Shangtugou are situated north of the city Sanjiaocheng, and Hamadun southwest of it (Fig. 9.13). They are located on fluvial terraces of 3–7 m high (Fig. 9.14). The graves are densely distributed, dug out from the hard clayey virgin soil, and filled with loose soil. Wind erosion has exposed several graves including objects on the surface. At Xigang, 452 burials (YSX M1–M452) were excavated and some overlap was observed. At Chaiwangang 113 graves (81YSCM1–M113) or 1/4 of the whole cemetery was excavated, 2 storage pits, and 2 houses. At Hamadun, 20 graves (79ST M1–M20) were excavated.<sup>59</sup> Only 5 graves were excavated at Shangtugang (79STM1–M5). They are badly eroded and not properly documented.<sup>60</sup>

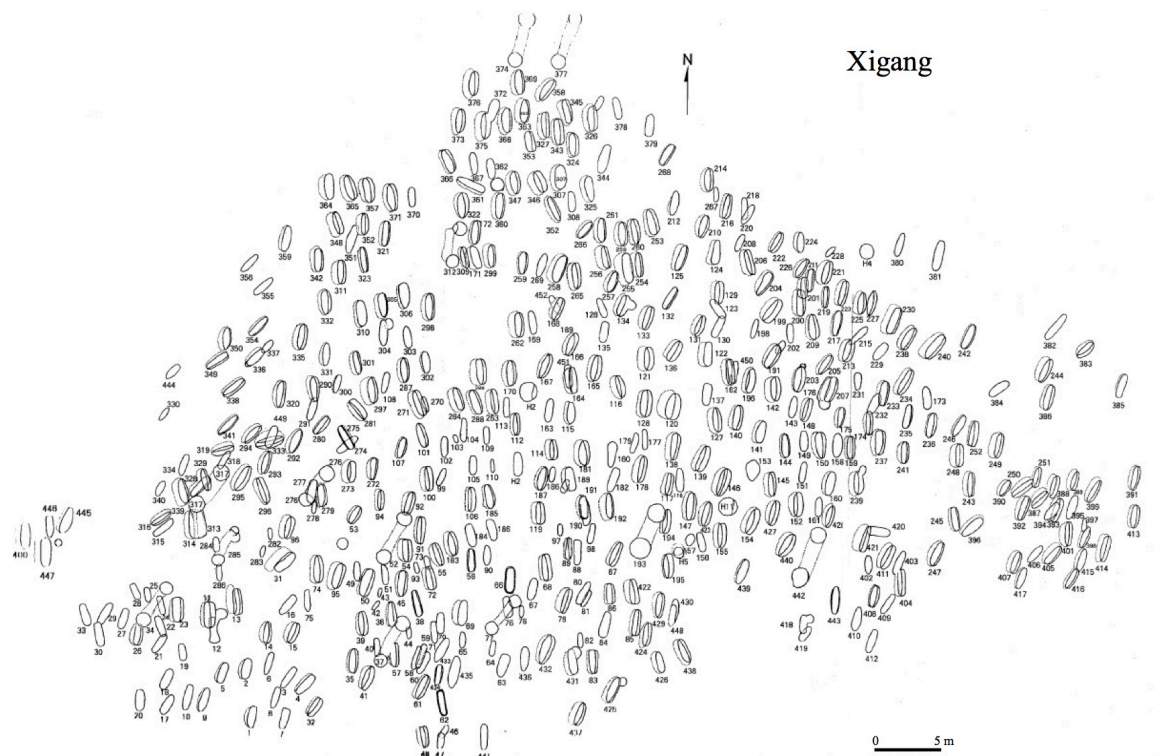
No surface structures were observed for the late Shajing or Shuangwan burials but, despite heavy erosion, it is unlikely they were mounded. Three grave types were found: 1) lateral niche graves; 2) shaft graves with(out) side ledges; and 3) longitudinal niche graves accessed by one or two entry pits.<sup>61</sup> I calculated the ratios of different burial types, shown

<sup>59</sup>For the excavation reports, see Gansusheng wenwu kaogu yanjiusuo et al. 1984; Gansusheng wenwu kaogu yanjiusuo 1990; Gansusheng wenwu kaogu yanjiusuo 2001; for a study on the Shuangwan graves, see Hong Meng 2008.

<sup>60</sup>Gansusheng wenwu kaogu yanjiusuo 1990.

<sup>61</sup>The reports sometimes mention additional types, including ‘child burials’ and ‘double burials’

in Tab. 9.1. No figures are known for Shangtugang, but during my field trip in 2015, I observed shaft graves and lateral niche graves similar to Xigang and Chaiwangang. Because burial numbers are sometimes confused with grave numbers in the report, I refer to ‘burials’ rather than ‘graves’.



**Figure 9.15** – Distribution map burials at Xigang (After Gansusheng wenwu kaogu yanjiusuo 2001, 6–1, Fig. 2)

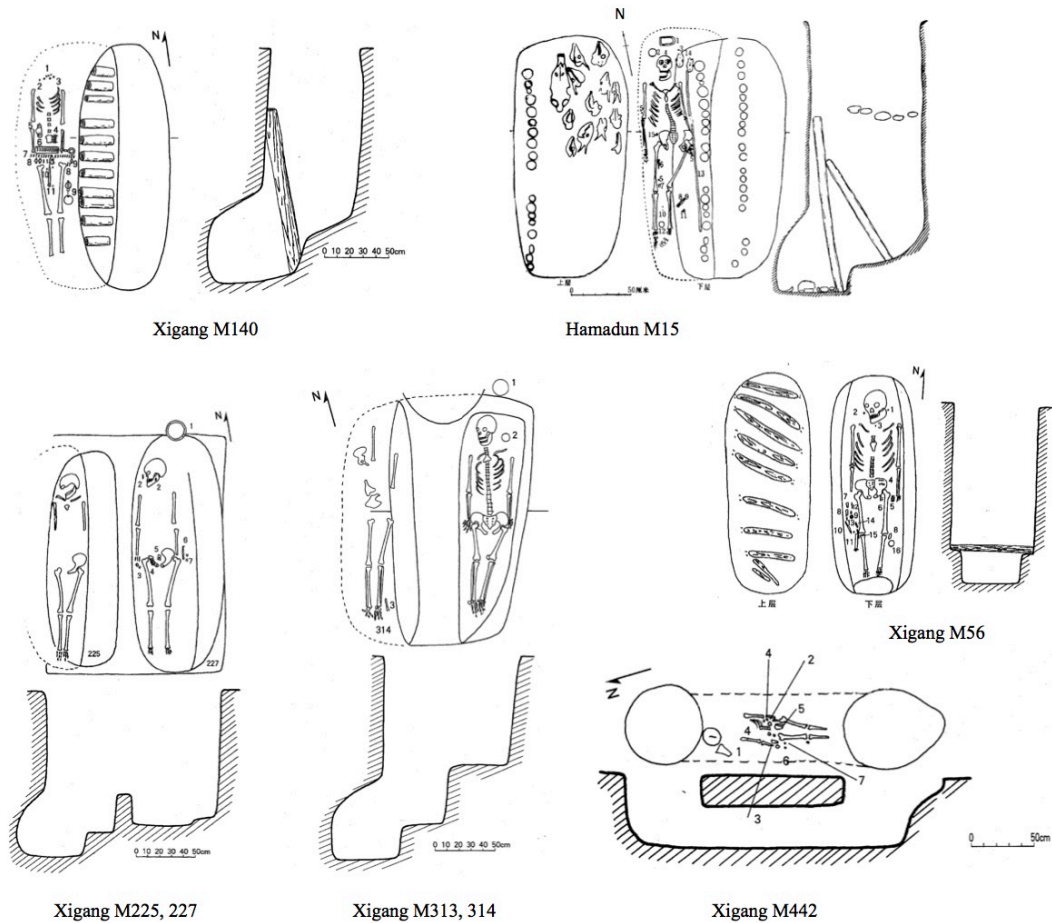
	Lateral niche		Shaft		Longitudinal niche		Total	
Xigang	281	62%	173	38%	3	12%	452	100%
Chaiwangang	45	40%	46	41%	2	2%	113	100%
Hamadun	12	60%	8	40%	0	0%	20	100%
Total	338	100%	227	100%	5	100%	585	100%

**Table 9.1** – Ratio of burial types at the Shuangwan cemeteries (in MNI).

All grave types show a dense and random distribution pattern, except for Xigang. Here, large graves with rich grave goods, often of the niche grave type, cluster in the centre of the cemetery. Children with no or few grave goods are distributed at the periphery (Fig. 9.15).

The lateral niche graves feature western niches, sealed with roundwood and *Achnatherum splendens* or mats of this needle grass. The shaft ranges from deep to shallow, the niche but I consider them as adaptations of these three types.

from high to low. The entry shaft has mostly one, rarely two, and sometimes no step at all. Variability in niche grave architecture was attributed to chronological differences. At Xigang, for example, earlier graves exhibit deep entry shafts (1.20–1.30 m) with high niches (0.70 m). The later graves have shallow entry shafts (0.50–0.30 m) with low niches (0.40–0.50 m), and some niches are only symbolically present as bulging walls. In the early graves the entry shaft often has one or sometimes two steps, a feature mostly absent in later graves (Fig. 9.16).<sup>62</sup>



**Figure 9.16** – Different grave types of the Shuangwan cemeteries (Adapted from Gansusheng 2001, 13, Fig. 4; 28, Fig. 15; 39, Fig. 19; 40, Fig. 20; 35, Fig. 18; and Gansusheng Wenwu Kaogu Yanjiusuo 1990, 218, Fig. 12).

Shaft graves are rectangular with straight walls and rounded corners (9.16, centre right). Some feature one or two side-ledges near the bottom of the shaft, supporting a roof of roundwood. Children are buried in similar but smaller graves.

Longitudinal niche graves are accessed by one or two small entry pits (Fig. 9.16, bottom right). This type represents 12 (3%) of the burials at Xigang, and 2 (2%) of the burials at Chaiwangang. No examples are known from Hamadun.<sup>63</sup>

<sup>62</sup>Gansusheng wenwu kaogu yanjiusuo 2001, 8; for this presumed development, see 10–26.

<sup>63</sup>Gansusheng wenwu kaogu yanjiusuo 2001, 115.

Orientation	Xigang		Chaiwangang		Hamadun	
NN	354	78.3%	60	53.1%	14	70%
NE	76	16.8%	49	43.4%	6	30%
EE	1	0.2%	0	0%	0	0%
SE	0	0%	0	0%	0	0%
SS	0	0%	0	0%	0	0%
SW	1	0.2%	0	0%	0	0%
WW	2	0.4%	0	0%	0	0%
NW	3	0.7%	0	0%	0	0%
Unknown	15	3.3%	4	3.5%	0	0%
All	452	100%	113	100%	20	100%

**Table 9.2** – Body orientation for the burials of Xigang, Chaiwangang and Hamadun (in MNI).

The ratios of body orientations in Tab. 9.2, are calculated based on overview tables in the excavation reports.<sup>64</sup> I categorised these into eight sectors of 45°, similar as for Yanghai (§ 14.3). The figures for Xigang (452 graves) and Chaiwangang (113 graves) give a relatively complete picture, whereas the sample of Hamadun is small (20 graves). In summary, the main body orientation in all cemeteries is towards the NN, followed by the NE. Different ratios for these two orientations per cemetery may reflect chronological differences.

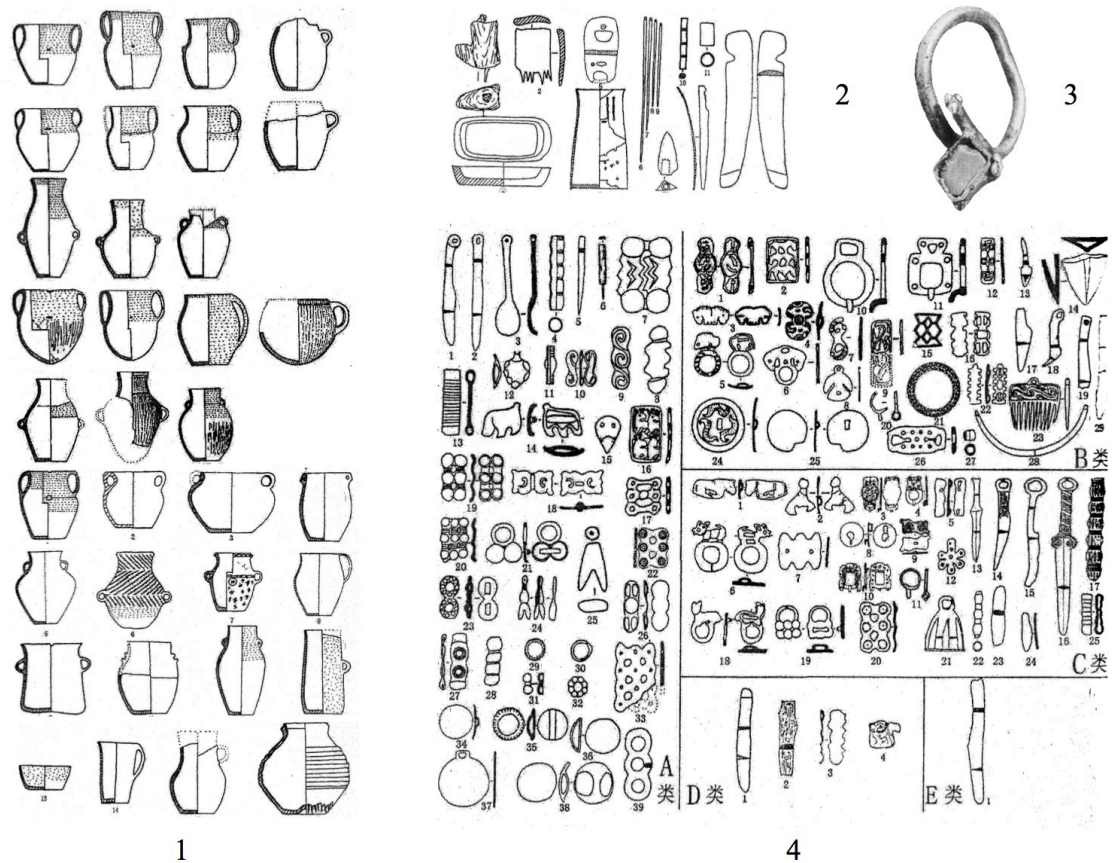
Single extended burial prevailed during the Late Shajing culture. Deliberate displacement of bones and their treatment with red or white (lime) pigment are considered local practices. The floor of the grave shaft was prepared by sprinkling lime on it and covering it with *Achnatherum splendens*. Bodies were sometimes covered with a mat of this needle grass or reed.

There are some double burials at Xigang (5 graves, 10 individuals) and Chaiwangang (2 graves, 4 individuals), but not at Hamadun (Fig. 9.16). Unique architectural solutions were made to accommodate them and, based on prestigious grave goods and the higher position of men in these graves, it was assumed the latter enjoyed more status than women (Fig. 9.16, bottom left).<sup>65</sup>

<sup>64</sup>For Xigang and Chaiwangang, see Gansusheng wenwu kaogu yanjiusuo 2001, 203–233, Tabs. 1 and 2. The numbers from these tables differ from the summarised orientations elsewhere in the report, see 7–9 (Xigang) and 113 (Chaiwangang); for Hamadun, see Gansusheng wenwu kaogu yanjiusuo 1990, 235, Tab. 1.

<sup>65</sup>Gansusheng wenwu kaogu yanjiusuo 2001, 38.





**Figure 9.17** – Assemblage of the Shuangwan graves. 1: Pottery; 2: Wood and bone artefacts; 3: gold earring with turquoise inlay and deer motif; 4: bronze, iron and gold items (Adapted from Hong Meng 2008, 49–52, Figs. 3–6; Colour Plate 3.5).

The Shuangwan graves contain bronze, iron, bone, leather, wool, a gold earring with turquoise inlay and deer motif, glass paste items and cowrie shells (Fig. 9.17). The distribution of the grave goods is uneven. At Xigang, 165 out of 281 niche burials, and 59 out of 159 shaft burials have no grave goods.

Several graves have exquisite bronze decorations, some particularly rich. The ‘beaded’ belt decorations are noteworthy, alongside belt buckles with tongue, awls, needles, an open-work needle case, horse-shaped plaques, knives, mirrors, small bells, earrings, turquoise, and bone ornaments. Iron knives are also seen. The bronze assemblage, including two daggers, and horse plaques similar to samples from the Taohongbala and Yanglang cultures, show strong links with the northern steppes and Ordos bronze culture (Fig. 9.17; 138, Fig. 9.10; 136, Fig. 9.9).

Pottery is sand-tempered. The upper half of the body is covered with a dark red-brown slip and decorated with appliqué, scratching, knobs and cord impression techniques. The low presence of pottery suggests a pastoralist lifestyle.<sup>66</sup> The assemblages of Chaiwangang

<sup>66</sup>Gansusheng wenwu kaogu yanjiusuo 2001, 113.

and to some degree Hamadun are similar. The Hamadun finds include large amounts of bronze belt decorations, turquoise and bone beads, bone belt plaques, very few pottery and wooden vessels, bronze knives and awls, iron knives, arrowheads, arrow shafts, bone endplates for reinforcing composite bows, leather and woollen items. Surface finds from Shangtugang include pottery, bronze, turquoise and glass items.

Animal sacrifice is most prominent at Hamadun, where skulls, hooves and phalanges of cattle, sheep, and horses occurred in the majority of graves. Some had up to 24 sheep skulls. Hong Meng calculated that 70% of the animal remains from the Shuangwan graves were excavated from Hamadun while marginal quantities were found at Xigang and Chaiwangang. At Hamadun, 14 out of 20 graves had animal remains, including sheep (92.9%), cattle (21.4%), horse (21.4%) and donkey bones (7.1%). The prevalence of sheep bones suggests sheep pastoralism and sacrifice was common, whereas horse and cattle sacrifice was reserved for an elite.

Hong observed that animal sacrifice occurred more often in niche graves (9 graves) than shaft graves (5 graves), and that horse and cattle sacrifice was only seen in niche graves and not in shaft graves. Animal sacrifice was present in the graves of men and women, but horse sacrifice only in graves of men.

Hong argued that the differences in frequency and type of animals supported a chronological difference. He considered Hamadun later than Xigang and Chaiwangang, where animal sacrifice was rare. At Xigang, sheep bones prevailed, followed by pig and horse. Only sheep and pig was sacrificed at Chaiwangang. However, referring to the great similarity of the assemblages of the Shuangwan cemeteries, Hong mentioned that differences in animal sacrifice may also be due to differences in the population make-up.<sup>67</sup>

### 9.5.3 Origins of the Shuangwan niche graves

The emergence of the Shajing culture has led to speculations about its origins. Physical anthropological research suggested the Shajing people belonged to a Mongoloid type.<sup>68</sup> Historical interpretations have associated the Shajing people – together with the Siba people – to the Yuezhi and Wusun, who are described as having a red-white skin. This made some to argue that the Shajing and Siba people were Caucasoid.<sup>69</sup> However, there is hardly any physical anthropological evidence for Caucasoids living in the Hexi Corridor before the Qin or Han period. The closest evidence is Caucasoids and Mongoloids living side-by-side in the

<sup>67</sup>Hong Meng 2008, 10, 22–26.

<sup>68</sup>Han Kangxin 2001, 235–246.

<sup>69</sup>Zhang Guangzhi 1970.

early second millennium BCE in the easternmost Tianshan area.<sup>70</sup>

Hong Meng advocated the view that the Shajing culture represented an important branch of the late bronze culture of the northern steppe at the westernmost end of the Great Wall area.<sup>71</sup> Li Yongjie supported this view largely, but argued that the tiger and deer plaques of the Shajing culture were more realistic and primitive in form than the Ordos samples, which he thought were more abstract in form. He therefore suggested that the latter could have originated in the Shajing culture and not vice versa.<sup>72</sup>

Archaeological evidence suggests strong influence on the Shajing culture from the Ordos, represented by Maoqinggou. This led some to conclude that the Shajing people migrated from the Ordos Plateau to the Hexi Corridor.<sup>73</sup> Zhang Quanchao mentioned that skeletal remains from the Sanjiaocheng group used to analyse the Shajing remains, belonged to the ‘Mongoloid Plateau Type’ resembling the Mongoloid ‘Central Slabstone Burial Group’.<sup>74</sup> Hong Meng pointed out that 11 of the 13 skulls of the ‘Sanjiaocheng group’ were taken from Hamadun, representing 55% of the population of this cemetery. This implied, he argued, that the majority of the Hamadun population are of Mongoloid stock (i.e. the Plateau Type) and therefore mainly immigrants. The use of niche graves was explained as an adoption of local traditions.<sup>75</sup>

#### 9.5.4 Conclusion

Between c. 600 and 300 BCE, lateral niche grave practices became popular in the Yongchang Basin in the east central Hexi Corridor. They were found at the Shuangwan cemeteries of the late Shajing culture. The niche graves are distributed on high-rising alluvial terraces, side-by-side with shaft graves, and occasionally longitudinal niche graves with one or two entry pits. The latter only occurred at Xigang and Chaiwanggang, not at Hamadun. Graves were not mounded and niches positioned in the western wall. Extended burials prevailed, and the main body orientation was towards the NN, followed by the NE. The central distribution of rich niche graves at Xigang, the spatial organisation within double niche graves, the strong association of animal sacrifice (sheep, cattle and horse) at Hamadun with niche graves, and horse exclusively being found in niche graves of males, suggest that (male) niche grave occupants enjoyed an elite status.

<sup>70</sup>*Sichouzhilu gudai jumin zhongzu renleixue yanjiu*; in Han Kangxin 2001, 244.

<sup>71</sup>Hong Meng 2008, 29.

<sup>72</sup>Li Yongjie 2014, 117.

<sup>73</sup>Gansusheng wenwu kaogu yanjiusuo 2001, 199, 202.

<sup>74</sup>*Nei Menggu he Linge'erxian Xindianzi mudu renggu yanjiu*, 26.

<sup>75</sup>Hong Meng 2008, 26.

The walled settlement of Sanjiaocheng and the find of a hoe, attest to sedentism (Fig. 9.13). However, animal remains and the low presence of pottery suggest the increasing importance of pastoralism and mobility for the late Shajing people, notably the Hamadun people. The sudden increase in animal bones, was possibly influence from the Yanglang and Taohongbala cultures (136 ff.). This implies that influence from the Qingshui Basin, Ordos, and northern steppe in general – also visible in the grave goods – reached a climax in the latest stage of the late Shajing culture represented by Hamadun.

While animal sacrifice, grave goods, and biological evidence all point to strong influence from these northern areas, lateral niche graves could not have been transmitted from there, as they were a minority practice in the Taohongbala culture in Inner Mongolia, and those from the Yanglang cultures in the Qingshui Basin are quite different in layout. What alternatives are left to explain the presence of niche graves between 600 and 300 BCE?

Local development is unlikely. The nearest niche grave precedents found at Yuanyangchi in the Yongchang Basin are attributed to the Majiayao Machang culture (c. 2200–1900 BCE), but these are chronologically too remote and morphologically too different to have inspired the Shuangwan tradition (128). However, if the Yuanyangchi examples were introduced from outside, then a similar transmission could have taken place after 600 BCE. In such a scenario, lateral niche grave practices of the Kayue and Xindian cultures (132 ff.), themselves originating in the late Qijia tradition of the Huangshui Basin, could have inspired those of the Yongchang Basin.

## 9.6 Conclusion

Chapt. 9 demonstrated that the Hexi corridor and upper and middle Huang He basin had a long tradition of niche grave practices (123, Fig. 9.1). The soil was suited for cutting out stable niches and this made people to experiment with various forms. The use of bronze tools and later on iron tools facilitated more regular and complex structures.

The earliest niche grave practices were discovered in the Wei valley in the middle Huang He basin and attributed to the Miaodigou-I culture (c. 4000–3500 BCE, 126). They were shallow lateral niche graves with extended burials. As excavations are ongoing, we have no idea about the scope of this practice. At c. 3000 BCE, small numbers of lateral niche graves with flexed burials on the side were seen in the Liaohe and Sanggan basins, attributed to the late Xueshan-I culture (126).

As discussed on pages 127 ff., between 2500 and 2200 BCE, niche grave practices be-

came popular in the Qingshui Basin at sites of the Caiyuan culture, and in the Lanzhou area at sites of the Majiaoyao Banshan cultures. Between 2200 and 1900 BCE, these practices further developed in the Lanzhou area, but also appeared in the Huangshui and Yongchang basins, all attributed to the Majiaoyao Machang culture. Niche graves of this period (2500–1900 BCE), showed some variability but perpendicular niche graves prevailed while lateral niche graves occurred too. Crouched postures prevailed, though towards the end extended burials increased, notably in the Huangshui Basin. Large amounts of painted pottery indicate sedentism (127, Fig. 9.2).

Discussion of the Qijia culture allowed observing significant changes around 2000 BCE (129 ff.). Niche grave practices only appeared in the middle phase (Qijia phase at Liuwan) and late phase (Lintan Mogou). Lateral niche graves – occasionally with smaller niches for grave goods – and extended body posture became increasingly popular in the former, while they became the rule in the latter. I hypothesise that, from the middle phase onward, niche grave practices spread into three directions.

Southeastward, it spread towards Lintan Mogou, where a great majority of the population was buried in lateral niche graves in extended body posture. Single niche graves prevailed, but existed together with a unique system of double and multiple niche graves (130, 9.4). Northeastward, the lateral niche graves and diagnostic Qijia pottery, spread into Hetao at c. 1900–1700 BCE, as evidenced by Zhukaigou and Bai'aobao (131 ff.). Westward, the Qijia niche grave tradition spread towards the middle and eastern Hexi corridor, as evidenced by Huoshaogou of the Siba culture. Niche grave practices of the Xindian and Kayue cultures (i.e. 1900–800 BCE) in the Huangshui basin possibly originated in the local Qijia tradition (132 ff.).

Between 1400 and 800 BCE, niche graves characterised by a geometric layout emerged in the Wei valley. In the pre-Zhou cemetery of Fufeng Liujia they represented the great majority, but in the Western Zhou cemetery of Chang'an Zhangjiapo, they formed a small minority (133 ff.). At c. 500 BCE, a strongly localised minority niche grave tradition with crouched burials developed in the Qin culture (§ 9.3.2).

Between 600 and 300 BCE, a niche grave tradition with strong regional features emerged in the Qingshui Basin at sites of the Yanglang culture, and in Inner Mongolia at sites of the proto-Xiongnu Taohongbala culture (136 ff.). In both areas, animal sacrifice, notably of sheep, cattle and horse skulls, became increasingly prominent. In the Yanglang culture, longitudinal niche graves with sloping floors became a majority practice. In the Taohongbala culture, lateral niche graves became a minority practice.

In the Yongchang basin, still between 600 and 300 BCE, lateral niche grave practices dominated the Shuangwan cemeteries of the late Shajing culture (§ 9.5). I argued they had no immediate antecedents and were probably transmitted from the Kayue and Xindian cultures in the Qingshui Basin, themselves originating in the Qijia culture (150).

Interaction between pastoralists from the Yongchang basin, the Qingshui Basin, and the northern zone intensified, as evidenced from bronze belt decorations and openwork horse plaques from Xigang of the late Shajing culture, Zhangjiecun of the Yanglang culture, and the pre-Xiongnu culture Taohongbala site (147). Possibly, the minority practice of lateral niche graves at Taohongbala – not the longitudinal niche graves of Yanglang – resulted from such interaction. Near the end of the late Shajing phase, renewed north influence is suggested by the sudden increase in animal sacrifice, notably of cattle, sheep, and horse skulls, hooves or phalanges, at Hamadun, most prominently in niche graves of males (148–148).

I hypothesise that between 300 and 200 BCE, lateral niche grave practices of the late Shajing culture started spreading from the Yongchang Basin. Northeastward, they spread into the Ordos, where they integrated as a minority with local burial customs (Daodunzi), and further into ‘Xiongnu territory’ reaching the middle Yenisei Basin (139 ff.). Westward, they reached the Turfan Basin and Balikun grasslands, at c. 200 BCE, displaying northern features including bronze belt decorations, animal sacrifice, a meridional orientation, and – if migration was involved – an increased Mongoloid (Plateau Type) features (149).

Insufficient documentation on the Siba culture obstructs a full understanding of developments in the Hexi corridor and relations with the Tianshan area. I suggest the late Shajing and Siba lateral niche grave occupants belonged to competing though closely related communities in the eastern respectively western Hexi Corridor, both playing a role in the emergence of niche graves in the Balikun grasslands and Turfan Basin.

Niche grave practices at Yumen Huoshaogou, the only site of the Siba culture with this grave type, also feature lateral niches and sheep sacrifice as in the late Shajing culture, and may have chronologically overlapped with the latter (132–132). Moreover, if transhumance existed between summer pastures in the Balikun grasslands and winter pastures in Mazongshan (107), then such seasonal mobility between the Eastern Tianshan and the Hexi Corridor must have enhanced exchange – including perhaps the transmission of niche grave practices. The route via Mazongshan was the only passage between both areas, given the desertification of the central route via Dunhuang at that time.

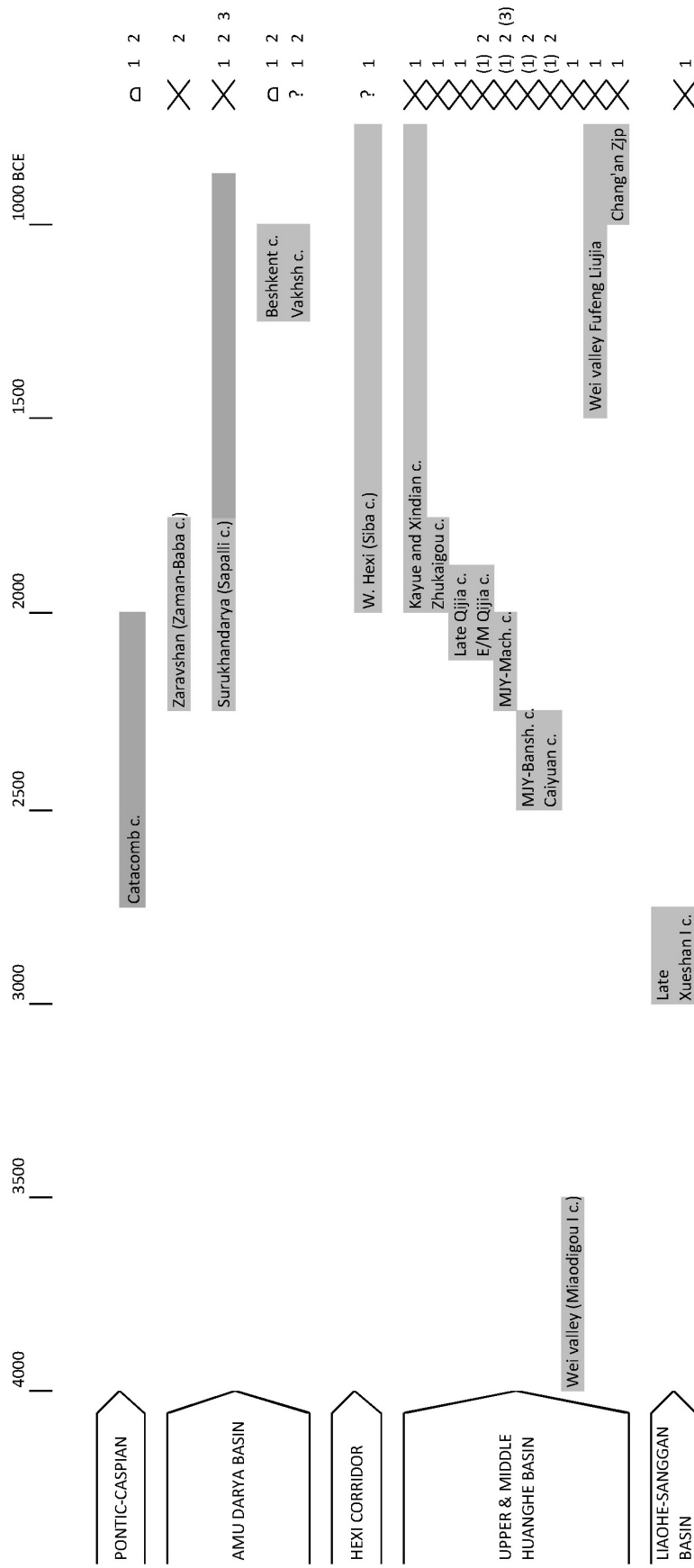
# 10 Discussion and Conclusion

## 10.1 Introduction

Part II discussed niche grave practices in Inner Eurasia, prior to and contemporary with their appearance in the Turfan Basin (c. 3 000 BCE to 300 CE). Zooming out to the supra-regional level allowed mapping different practices, formulating adequate terminologies, and understanding how different traditions could be related or why they could not. This contributed to contextualising the niche graves of the Turfan Basin and understanding the identity of their occupants/makers in a wider Inner Eurasian network.

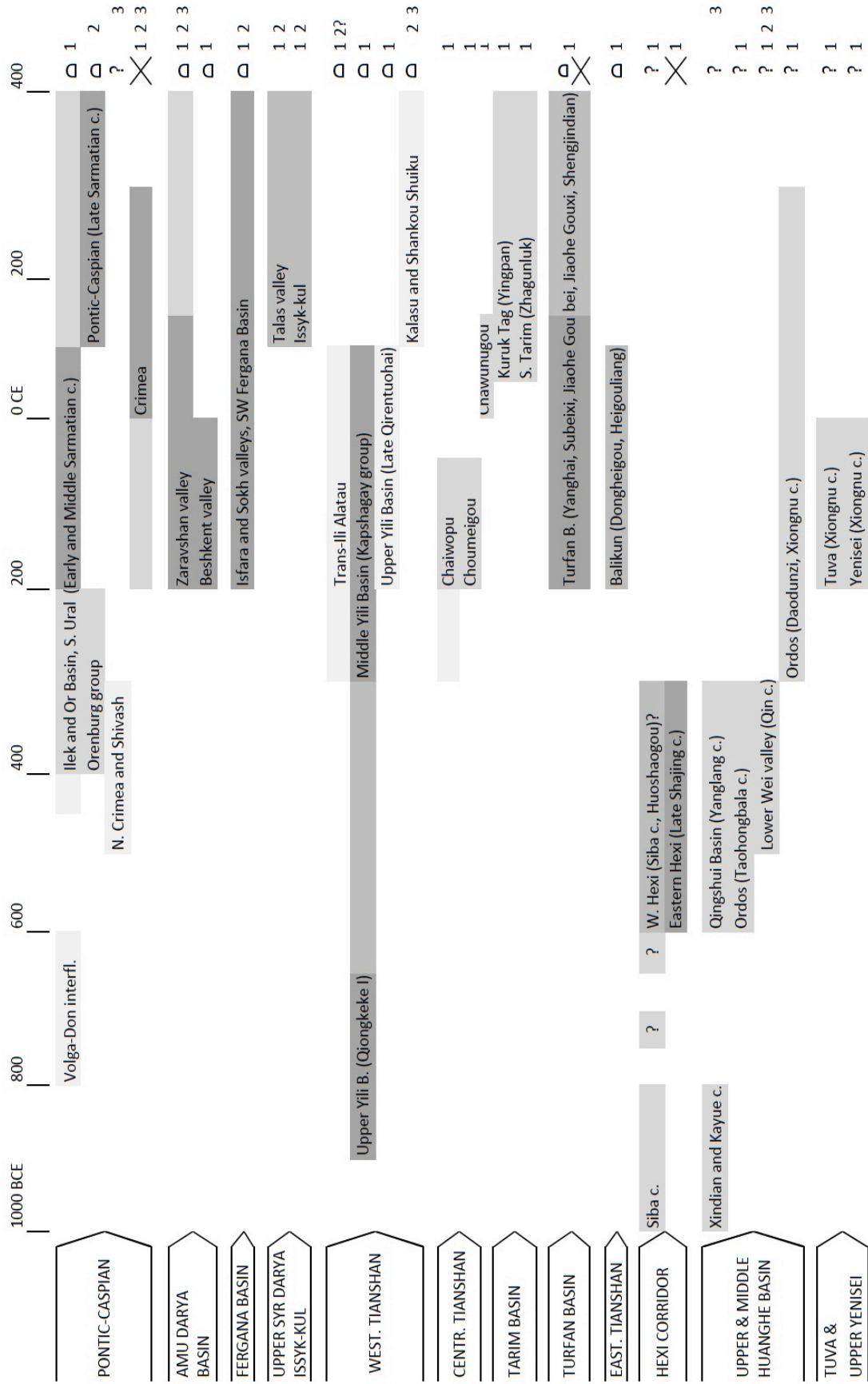
Below, I made a synthesis of Inner Eurasian niche grave practices, discussing the syntax which held them together. This was done based on chronology, geographic distribution, grave architecture, body posture and orientation, animal sacrifice, and grave goods. I highlighted those centres where I thought lateral niche grave occupants were more powerful – based on the frequency of this grave type or the status their occupants enjoyed – and which sparked a further distribution into neighbouring areas. To facilitate the discussion, I made a distinction into niche grave practices west respectively east of the Turfan Basin (§ 10.2 and § 10.3). Figs. 10.1–10.2 summarise all niche grave practices and their chronologies discussed in Part II. The maps in Figs. 10.3–10.4 correspond with these western and eastern distribution areas, except for the Pontic-Caspian region.

I subsequently discussed possible mechanisms behind the distribution of niche grave practices (§ 10.4), and the role of grave architecture and burial practice in understanding group identities and interconnectedness (§ 10.5).



**Figure 10.1** – Niche grave practices Inner Eurasia (1/2).  $\ominus$  = mound; 1) Lateral; 2) Perpendicular; 3) Longitudinal niches. Shades suggest impact.





**Figure 10.2** – Niche grave practices Inner Eurasia (2/2). ○ = mound; 1) Lateral; 2) Perpendicular; 3) Longitudinal niches. Shades suggest impact.



Figure 10.3 – Satellite map West Central Asia.



Figure 10.4 – Satellite map East Central Asia.

## 10.2 Niche grave practices west of the Turfan Basin

The earliest known niche grave practices west of the Turfan Basin are those of the Catacomb cultures (c. 2800–2000 BCE), which originated in the northern Donets and Don river basins, and expanded into the Pontic-Caspian steppes. They feature a small stepped entry pit with access to one or two lateral and/or perpendicular niches. There is considerable regional variation in body posture, but flexed on the side was common, and the graves were often sunk into the base of the burial mound (§ 6.2).

Niche grave practices subsequently emerged in the lower Zaravshan basin, at sites of the Zaman-Baba culture (late 3<sup>rd</sup> –early 2<sup>nd</sup> mill. BCE). Although it has been suggested that these originated in the Catacomb cultures (58), there is no firm evidence to bridge the 2500 km gap between both cultures. However, chronological and archaeological arguments suggest an eastward spread along the right tributaries of the Amu Darya, from the Zaman-Baba culture in the Zaravshan valley, via the Sapalli culture in the Surkhandarya valley (c. 2200–1700/1000 BCE), upstream into the Beshkent and Vakhsh cultures (c. 1300–1000 BCE) in their eponymous valleys (Fig. 10.1; § 7.2; § 7.3 and § 7.4). These cultures were related, as illustrated by the presence of Sapalli pottery in the Beshkent valley (58), and showed a similar dual influence from BMAC (pottery) and Andronovo or related steppe cultures.

There is considerable local variation in all these Bronze Age niche grave practices of the Amu Darya Basin, though entry pits are generally smaller than the niches, which are oval-shaped. The niches and the deceased are positioned perpendicular, lateral or longitudinal to the entry shaft. Flexed postures on the side prevail. Only the Beshkent-Vakhsh graves were mounded, a feature attributed to influence from the Andronovo-Fedorov culture. An enclosed settlement at Zaman-baba and a city in the Sapalli culture indicate sedentism (55, Fig. 7.3). Bronze Age niche grave practices in the Amu Darya Basin are considered influence from migrating cattle herders from the steppes, although their origins remain unknown (see previous paragraph).

The Beshkent-Vakhsh could be a dead-end in the Bronze Age niche grave sequence of the Amu Darya Basin, though I hypothesised it triggered niche grave practices in the upper Yili Basin around 900 BCE. The upper Yili niche graves would thus represent the easternmost end of a niche grave sequence, which developed in the Amu Darya Basin, in close symbiosis with pastoralist Andronovo cultures to the north, and settled farmers to the south (95). The lower bound of c. 900 BCE for the oldest Qiongkeke I niche graves, based on radiocarbon

dates and direct overlap with Andronovo remains, support this theory (82 ff.).

The early lateral niche graves of the upper Yili Basin, represented by Qiongkeke I (c. 900–500 BCE), are characterised by mounds, northern niches, and western body orientation. The few grave goods are evenly distributed over the graves. Painted pottery and sheep sacrifice are common. The cemetery, exhibiting elaborate ritual infrastructure and accommodating different mounded grave types, probably functioned as an important ritual centre. The ritual platforms along with the co-existence of lateral niche graves (the majority practice), shaft graves, and to a lesser degree cist burials, slabstone burials, and surface graves, suggest the need for alliances with other groups practising different burial customs. The occasional co-existence of shaft and niche graves underneath one mound illustrates the special relationship between the occupants of these two grave types (82 ff; 94 ff.).

Between 500 and 300 BCE, niche grave assemblages in the Yili Basin underwent changes. The share of painted pottery decreased, and flat-bottomed pottery ware and iron objects increased at the expense of round-bottomed ware and bronze objects (86 ff.). I argued these changes coincided with a dispersion of niche grave practices from the upper into the middle Yili Basin (96).

I claimed this westward spread resulted in the Kapshagay cluster in the middle Yili Basin where niche graves emerged around 300 BCE and grew popular between 100 BCE and 100 CE after which they disappeared (89 ff.). This cluster showed strong continuity with earlier practices in the upper Yili Basin as evidenced by surface and subsurface structures, single extended burial, a western body orientation, and similar vessel forms (compare Figs. 8.3 with 8.9; and 8.4 with 8.8). This suggests transmission from the upper to the middle Yili Basin was the result of migration. Migration from the Yili Basin towards the foothills of the Trans-Ili Alatau, possibly took place even earlier, from c. 500 BCE onward (§ 8.3).

I argued that, after the niche grave population in the upper Yili Basin lost control of the area and migrated westward, the vacuum which was left was receptive to new influences from the east (120). After c. 200/100 BCE, contact with the Turfan Basin is suggested by some late niche graves at Qirentuohai in the Kax valley, featuring north(east)ward body orientation, whole horse sacrifice, and lateral niches half-way up the wall, also seen at Jiaohe Goubei (89, Fig. 8.11; compare with 296, Figs. 21.6 and 21.7).

At about the same time, the site of Chaiwopu and to some degree Choumeigou (98 ff.) revealed connections between the niche grave populations of the central Tianshan Mountains, the Turfan Basin and the Balikun grasslands (Fig. 8.19 in 103 ff.).

The rare occurrence of longitudinal and perpendicular niche graves at Shankou Shuiku

and Kalasu – burial types more characteristic of the Zaravshan, Fergana and Talas valleys – could have seeped into the Yili Basin via the Tekes valley after 100 CE (93).

From a chronological and geographical perspective, the southern Ural lateral niche grave practices may be transmitted from the upper Yili Basin, via the mid-Ishim basin or Aral Sea, but this requires further research.

While their origins remain unknown, lateral niche graves in the southern Ural first emerged in the 5<sup>th</sup> c. BCE, although occasionally earlier examples were found in the Volga-Don interfluvial (§ 6.3). This practice matured during the Early Sarmatian Prokhorovka culture (4<sup>th</sup>–2<sup>nd</sup> c. BCE) on the banks along the Ilek and Or near Orenburg. Its popularity peaked in the Middle Sarmatian Period between 200 BCE and 100 CE, when it also started influencing other regions. From c. 100 CE onward, lateral niche graves quickly lost ground against perpendicular niche graves in the Pontic-Caspian steppe. Both types continued to exist during the Late Sarmatian period (2<sup>nd</sup> c.–4<sup>th</sup> c. CE), while perpendicular niche graves with multiple burials, became increasingly popular (§ 6.4).

The middle Sarmatian period, between 200 BCE and 100 CE, saw a dispersion of niche grave practices from the Pontic-Caspian steppe westward into the Don and Kuban basins and Crimean peninsula (§ 6.5), eastwards into the mid-Ishim region, and southeastward into the Zaravshan Basin (§ 7.6). This was a joint distribution of lateral, perpendicular, and longitudinal niche graves. In some areas certain grave types had more influence than others. While the dispersion of lateral niche grave practices emanated from the southern Ural steppes, it is less clear where perpendicular and longitudinal niche graves emanated from.

These three standardised and diagnostic niche grave types, which were closely related and often distributed side-by-side, were to have a profound influence on the burial landscape of Central Asia. Southeastward, lateral, perpendicular and longitudinal niche grave practices may have influenced traditions in the Zaravshan valley (200 BCE–100 CE, § 7.6), the Fergana Basin (earliest 200 BCE–0 CE, majority 0–400 c. CE, § 7.7), the Beshkent valley (200 BCE–0 CE, § 7.5), the Talas valley, and northern shores of the Issyk-Kul Lake (c. 100–400 CE, § 7.8).

In the Zaravshan valley, lateral niche graves coexisted with perpendicular, longitudinal niche graves, and shaft graves. In the Fergana Basin, lateral niches graves coexisted with perpendicular niche graves, stone surface tombs, and shaft graves. In the Beshkent valley, only lateral niche graves were common. In the Talas valley and Issyk-Kul Lake area, lateral and perpendicular niche graves coexisted. All these niche grave types were mounded, and

exhibited strong influence from Sarmatian territory in the southern Urals and the lower Volga basin, including iron long swords, daggers, belt buckles with hinged tongue. Pottery was locally made. Openwork camel plaques from Babashov in the mid Amu Darya Basin dated 200 BCE–0 CE, strikingly similar with a sample known from the southern Ural and dated 3<sup>rd</sup>–2<sup>nd</sup> c. BCE, epitomise interaction between these areas (compare 61, Fig. 7.8 with 43, Fig. 6.5).

The joint distribution and coexistence of standardised niche grave types, and diagnostic Sarmatian grave goods, attest to a similar syntax in the Zaravshan, Beshkent (though here we only see lateral niche graves), Fergana, and Talas valleys. More chronological fine-tuning is needed to understand the influence individual grave types had in these areas.

I postulated that, against a landscape of increasingly competing and mobile pastoralist groups in the Amu Darya and Syr Darya basins, lateral niche grave people played a prominent role between 200 BCE and 0/100 CE in the Isafara and Sokh valleys in the southwestern Fergana Basin, and in the Beshkent valley (§ 7.7 and § 7.5).

Arguments supporting this hypothesis are formulated in § 7.9 and are summarised as follows. In both the southwestern Fergana and Beshkent valleys lateral niche grave practices represented the majority. In the Beshkent valley, lateral niche graves are even the only type present. Furthermore, the existence of niche grave elites is evidenced by prestigious items, notably at Tulkar and Aruktau in the Beshkent valley.

If and how the lateral niche grave centres in the Beshkent valley – which also represented a summer camp – and southeastern Fergana Basin were related cannot be confirmed. While a northern body orientation was more common in the Beshkent valley (59), a southern orientation, followed by southeastern body orientation, was more common for the southwestern Fergana Basin (69). A southern body orientation was also common in the southern Ural steppes (§ 6.4). Both areas favoured western niches, followed by eastern niches. In the Beshkent valley, western niches were common in Aruktau and Babashov, but eastern niches prevailed in Tulkhar.<sup>60</sup> In the Fergana basin, half of the lateral niche graves have western niches, a quarter eastern niches, and another quarter northern niches.<sup>69</sup>

If lateral niche grave occupants enjoyed status in these areas, how was this acquired? In the southwestern Fergana Basin, they probably benefited from their strategic position, from where they could control access of goods and people to the Fergana Basin, an area connecting the Syr Darya and Amu Darya basins, and the areas east and west of the Tianshan and Pamirs. Precious objects from graves in the Beshkent valley, suggest links with the Indian world and pastoralist elites from Tillya-tepe around the 1<sup>st</sup> c. CE. The latter also showed

links with the Zaravshan valley (Orlat and Kok-tepe), the Persian, Indian, Roman, Parthian and Chinese worlds (§ 7.6).

After c. 100 CE, lateral niche graves assemblages are more modest or low-profile. Similar to developments in the Pontic-Caspian steppes, it seems that, between c. 0/100 and 400 CE, they continued to exist but gradually lost terrain against perpendicular, and in some areas, longitudinal niche graves. Perpendicular and lateral niche graves appeared from c. 100 CE onward in the Talas valley.

There are other arguments supporting that lateral niche graves lost their prominence after 100 CE. Stratigraphical evidence from Kok-tepe near Samarkand shows this type had become obsolete by the time the ‘princess’ of Kok-tepe was buried in a perpendicular niche grave in the 1<sup>st</sup> c. CE (§ 7.6; 63). Furthermore, similarities between pointed arc-shaped bone belt plaques from Orlat in the Zaravshan valley and Jiaohe Goubei in the Turfan Basin – along with similarities in other grave goods like bone endplates and handle laminates for composite bows – support a date between c. 200 and 100 CE when lateral niche grave elites in both areas were most active (compare 64, Fig. 7.11; and 321, Fig. 24.2).

The above supports lateral niche making was central to the burial ideology and group identity of the elites in the southwestern Fergana Basin and Beshkent valley. Multiple influences from dominating Eurasian powers can be observed between c. 200 BCE and 100 CE (cf. the late Beshkent assemblage in 67, Fig. 7.12; and Kugai-Karabulak assemblage in 60, Fig. 7.7). Strong influence was also felt from the southern Urals and, although the distribution of Sarmatian grave goods suggests lateral niche grave practices may also have spread from this area along the Amu Darya to the Beshkent and Fergana valleys, there is an alternative explanation for their presence here.

The architecture of mounded lateral niche graves in the Beshkent and southwestern Fergana valleys is so similar to that in the Yili Basin (compare 59, Fig. 7.5 with 85, Fig. 8.3), that we may equally consider influence from the latter. Yet another scenario is a two-way influence from both the Yili Basin and the southern Urals. The outspoken presence of Sarmatian objects suggests influence from the latter was stronger.

To conclude, the emergence of lateral niche grave practices in the Fergana, Zaravshan, and Beshkent valleys between 200 BCE and 0/100 CE, probably resulted from a two-way influence from the southern Ural steppes and the Yili Basin. Two centres emerged where lateral niche grave users gained more power, in the southwestern Fergana Basin respectively the Beshkent valley. The latter probably was a summer camp. Between 0/100 and 400 c. CE, longitudinal and especially perpendicular niche graves became more prominent – even



though they continued to exist side-by-side with lateral niche graves – in the Zaravshan valley, the Fergana Basin, and the Talas valley. During this period, influence of the southern Ural steppes and lower Volga in the form of iron weapons and belt buckles with hinged tongue, became more pronounced.

### 10.3 Niche grave practices east of the Turfan Basin

The earliest niche grave practices east of the Turfan Basin were discovered in the lower Wei valley and attributed to the Miaodigou I culture (c. 4000–3500 BCE, 126 ff.). They feature lateral niches and single extended burials. Around 3000 BCE lateral niche graves with flexed burials on the side represented a minority practice in the late Xueshan I culture in the western Liaohe and Sanggan basins (126 ff.).

About 500 years later, various niche grave practices emerged in the Hexi corridor, upper and middle reaches of the Huang He river. The Loess Plateau was suited for creating stable niches and made people experimenting with different forms.

Between 2500 and 2200 BCE two centres of niche grave practices developed in the upper Huang He Basin, one near Lanzhou represented by sites of the Majiaoyao Banshan culture, and another in the Qingshui Basin represented by sites of the Caiyuan culture. Between 2200 and 1900 BCE, these further developed in the Majiayao Machang culture in the area of Lanzhou, spreading from there into the Huangshui and Yongchang basins. Considerable variation existed, but oval niches perpendicular to a small rectangular entry pit and flexed burials on the side prevailed, with large amounts of painted pottery (127 ff.).

Around 2000 BCE, significant changes occurred in the Qijia culture in the upper Huanghe Basin. While still drawing on the Machang tradition, the increasing preference for extended burial and lateral niches during the middle Qijia period (cf. Liuwan) became the rule in the late Qijia cemetery of Lintan Mogou (129 ff.).

During the middle phase, the Qijia niche grave tradition began to expand into other areas syncretising with local traditions (§ 9.6). The late Qijia tradition of Lintan Mogou itself – with its diagnostic multiple niche graves – can be seen as a southeastward dispersion and adaptation (129 ff.). Northeastward it spread into Hetao at c. 1900–1700 BCE (Zhukaigou tradition, 131 ff.), and westward into the middle and western Hexi corridor (Siba tradition, 132 ff.). In the Huangshui Basin, the Qijia tradition transformed into the Kayue and Xindian traditions around 1900–800 BCE (132 ff.).

The niche grave practices of the Late Shajing culture (600–300 BCE) in the Yongchang

Basin (126 ff.) may have issued from the Kayue and Xindian cultures. As argued, these were chronologically, geographically, and morphologically most proximate of the late Shajing ones (150).

Between c. 600 and 300 BCE, the Late Shajing culture became increasingly influenced by the Yanglang culture in the Qingshui Basin and the proto-Xiongnu culture of the Taohongbala and vice versa, as evidenced by the bronze assemblage, the northern body orientation, and eventually the practice of animal sacrifice (136 ff.). Independent of this, niche grave practices with regional features developed in the Qin culture (c. 500–300 BCE) in the lower Wei valley (§ 9.3.2).

In § 9.6, I hypothesised that, between 300 to 200 BCE, lateral niche grave practices of the late Shajing culture, displaying northern influences of animal sacrifice, bronze belt decorations and meridional body orientation spread into two directions. Northeastward, they spread into the Ordos, integrating as a minority with the local traditions of Daodunzi, and further reaching the middle Yenisei Basin by 200 BCE (139 ff.). Westward, they spread into the Balikun grasslands (103 ff.) and Turfan Basin (Parts III and IV) by c. 200 BCE. If migration was involved, this probably also resulted into an increased Mongoloid (Plateau Type) component (149).

This theory of influence from the Shajing niche graves onto the eastern Tianshan has some flaws. As the only site in the western Hexi Corridor with niche graves, Yumen Hushaogou of the Siba culture provides an interesting case for understanding possible transmission to the eastern Tianshan mountains. The presence of lateral niches, animal and human sacrifice supports such a view, but the insufficient reporting of this site obstructs a deeper investigating. If the upper limit of this site could be stretched to c. 300/200 BCE (132 ff.), the Siba and late Shajing traditions could be interpreted as two contemporary and competing communities in the western respectively eastern Hexi corridor, both potentially triggering the emergence of niche grave practices in the eastern Tianshan area (152).

Around 200 BCE, two regional centres emerged in the Balikun grasslands, Heigouliang and Dongheigou (103 ff.). Graves were mounded, and at least at Heigouliang, the majority featured lateral niches positioned in the southern wall, extended burials and a western body orientation. Animal sacrifice of ovicaprids, cattle, horse and camel, was common. Some of the skeletons were relatively complete. Human sacrifice was also practiced. Pottery consisted of red sand-tempered, and some grey ware.

The strong embedment of both centres in a northern influence sphere including the Ordos and Mongolian steppes, is evidenced from belt decorations, pottery and more (105). Burial

mounds and a western body orientation, may have originated in the Tianshan Mountains (§ 8.2; § 8.4). Painted pottery with wavy inverted triangles from Heigouliang, resembles samples from Chaiwopu, and was characteristic for Yanghai between c. 500–200 BCE. Similar knives and horse bits occur in both the Turfan Basin and Balikun grasslands, and almost identical carved bone bow tips from Heigouliang and Jiaohe Goubei epitomise contact between both areas (106, Fig. 8.19). Niche grave practices may be introduced from the Hexi Corridor, as suggested above. Animal sacrifice, especially of horse, may be transmitted from the Ordos, though the addition of camel and whole animal sacrifice (horse and camel), was possibly influence from Sarmatian cultures, while whole horse sacrifice could also originate in the Pazyryk culture in the Altai.<sup>1</sup>

Small concentrations of lateral niche graves in the central Tianshan Mountains and Bogda foothills throw light on how larger niche graves centres were connected to each other. They suggest contact with the Yili Basin, but more importantly the Turfan Basin and the Balikun grasslands (98 ff.; 106, Fig. 8.19).

Niche grave practices in the Tarim Basin appear rather late, between 0 and 400 CE (§ 8.6). I interpreted these as spin-offs from the Turfan Basin and Tianshan area (118 ff.). Chawuhugou III (c. 0–150 CE) was the first stage in this distribution (109 ff.). People practiced sheep pastoralism through vertical transhumance at the foot of the Tianshan Mountains. Grave goods suggest contact with the Hexi Corridor, Ordos, Mongolian steppe, and Han empire. The lateral niche grave people from Chawuhugou III were not influential, judging from their low presence, modest graves, and inventory. This apparent decline of power in a strategic area in the Tianshan Mountains is surprising.

Between 200 and 400 CE, a minority of sheep herders from Yingpan at the foot of the Kuruk-Tag (114 ff.), and a majority from Zhahunluk III in the southern Tarim Basin (116 ff.) used lateral niche graves. They relied on irrigated crop-farming and were less mobile than their contemporaries in the Tianshan Mountains. Lateral niche grave occupants enjoyed no particular status, and integrated largely with local burial practices. Nevertheless, niche making as well as abstaining from using wooden coffins and surface structures, set niche and shaft grave occupants apart at Yingpan (114, Fig. 8.24). Silk, cotton, *erbe*i cups, faceted glass cups, Chinese and Kharoṣṭhī writings at Yingpan and Zhagunluk III attest to contact with the Eastern Han and its successors, the Wei and Western Jin, Kushan empire, and Persian world.

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<sup>1</sup>Parzinger 2011 [2006], 586–606.

## 10.4 Mechanisms of dispersion

Part II demonstrated that the emergence of different niche grave practices across Inner Eurasia raised similar questions, as those formulated in § 1.1, focusing on autochthonous versus allochthonous development. The scope of Part II did not allow unravelling all mechanisms of dispersion, though some general observations could be made.

In order to hypothesise about the dispersion of different niche grave traditions, I identified the following sequences, based on my findings in § 10.2 and § 10.3.

West of the Turfan Basin, a Bronze Age Amu Darya Basin sequence (§ 7.2; § 7.3 and § 7.4), initiated an Early Iron Age upper Yili Basin tradition at c. 900 BCE (82 ff.) (see 94 ff). The latter triggered similar traditions in Trans-Ili Alatau (§ 8.3), and perhaps the southern Urals (§ 6.4) from 500 BCE onward, in the middle Yili Basin (89 ff.) from 300 BCE onward, while influencing traditions in the Fergana, Zaravshan, and Beshkent valleys between c. 200 and 0/100 BCE (§ 7.7, § 7.6 and § 7.5). Another sequence of lateral, perpendicular, and longitudinal niche grave practices originated in the Pontic-Caspian steppes, spread jointly westward reaching the Zaravshan, Fergana and Talas valleys by 200 BCE (§ 7.9). A two-way influence from the Yili Basin respectively the southern Ural steppes was thus claimed for lateral niche grave practices in the Amu Darya and Syr Darya basins.

East of the Turfan Basin, a sequence starting in c. 2500 BCE in the upper Huang He basin (127 ff.) initiated a Qijia tradition around 2000 BCE (129 ff.), characterised by an innovative character of lateral niche grave practices and extended burial. The latter triggered niche grave traditions in the Kayue and Xindian cultures (132 ff.), Zhukaigou culture in (Hetao 131 ff.), late Shajing culture (600–300 BCE) in the eastern Hexi Corridor (§ 9.5), and Siba culture in the western Hexi Corridor (132 ff.). The Shajing niche graves subsequently spread to the Ordos and the middle Yenisei by 200 BCE (139 ff.), while those of both the Shajing and Siba cultures possibly participated in the emergence of the Balikun grasslands (§ 8.5) and Turfan Basin traditions by 200 BCE (Parts III and IV).

There is hardly evidence supporting autochthonous development, except for the lack of precedents for the Catacomb cultures in the Pontic-Caspian steppes (2800–2000 BCE, § 6.2) and the lower Wei valley (c. 4000–3500 BCE, 126 ff.). Local development requires favourable soil conditions, such as loess, and may be inspired by house architecture (17, Fig. 2.3). Topography such as hilly landscapes influenced the layout of niche graves, as at Minhe Mapai (21, Fig. 2.5), and so did man-made burial mounds in the Catacomb cultures (40–41, Figs. 6.2–6.3). That environment or practical considerations were not decisive for the

layout or adoption of niche graves, is suggested by the Balikun examples, where the stony soil complicated niche making, and yet people made efforts to do so (104, Fig. 8.17).

The niche grave sequences imply allochthonous developments. Understanding whether these involved acculturation and/or migration (§ 1.1) and how these were linked to other regions, would require multiple studies. I only highlighted some cases, which are relevant in relation to the Turfan Basin, and illustrate different mechanisms of dispersion. In this context, I refer back to the discussions in § 1.4 and § 2.7, on cultural change, migration, and mobility, as all these affect cultural transmission.

Most niche grave traditions developed on a faultline between cultures focusing on pastoralism respectively crop farming, notably during the Early Iron Age. Whereas the degree of mobility in these communities varied, seasonal mobility between the Turfan Basin and the Central Tianshan/Bogda mountains, and between the Balikun grasslands and Mazongshan (107), probably promoted the transmission of lateral niche grave practices. Such transmission was probably easier between people who shared similar lifeways, as did the pastoralists of the late Shajing culture, Heigouliang and Dongheigou, and Yanghai, who knew similar degrees of sedentism and transhumance, practised horse riding and horse sacrifice.

Alongside temporary mobility, migration also promoted transmission, but may have been less massive as recorded in ancient written sources. Although generally hard to identify archaeologically, there is a case for migration from the upper to the middle Yili Basin (94 ff.), and from the Yongchang Basin towards the Eastern Tianshan and Turfan Basin resulting from a push from the east (164, § 28.3).

Even if migration sometimes occurred, acculturation was probably the most common mechanism behind the distribution of burial practices. Local people adopted and adapted innovative burial architecture, and integrated them with local customs and ideologies. The stronger the localisation process, the more quickly we lose track of distribution patterns as syncretic funerary practices take form. Adoption may also imply that some people took over new burial customs, while others continued local traditions. Furthermore, some features were taken over in its entirety, while others, such as burial devices, were profoundly localised. The niche graves of Yingpan attest to such a strong syncretism (114 ff.).

Parts III and IV analyse mortuary variability to understand allochthonous development in more depth. Investigating cultural change and mechanisms of dispersion further requires exploring the identity of the groups that used different niche grave practices (§ 10.5), notably against a background of quickly shifting allegiances in the late Early Iron Age.

## 10.5 Grave architecture, group identity and interconnectedness

Part II demonstrated that side-by-side distribution of different grave types was a common feature in many Inner Eurasian cemeteries. In the Early Iron Age, when grave types became more standardised, burial architecture was an important medium of expressing group identity. In a quickly changing landscape where pastoralists became increasingly mobile and competed for fertile pastureland and strategic positions, such a coexistence may result from alliances between groups using different grave types, provided these were contemporaneous. Surely there must be a reason why groups, buried side-by-side, with the same type of grave goods, opted for clearly different grave forms, sometimes even underneath the same mound (87, Fig. 8.6)?

In § 3.1, I discussed the complexity of (group) identity and how investigating mortuary variability contributes to understanding the *social persona*.

Some variables as burial device and grave goods may be more subject to change than for example grave architecture including niche making. Lateral, longitudinal, and perpendicular niches were diagnostic features intricately linked with group identity. The joint dispersion of lateral, longitudinal and perpendicular from the Pontic-caspian steppes into the Syr Darya and Amu Darya basins illustrates this. I argued these represented clearly distinguishable groups, closely related, while also showing a differential development (160; Chaps. 6 and 7). A shared group identity of the Shajing and Balikun niche grave occupants, rested on shared features of pastoralism, seasonal mobility, similar setting, sedentism, horse riding and sacrifice, strong affinities with the Ordos and Mongolian steppes, body orientation and lateral niche making (§ 10.4).

In a recent study, Ursula Brosseder investigated elite networks across Eurasia. While she rightly argued the distribution of elite goods over extensive areas of the Eurasian continent are not so much the result of migration but rather of elites who used the same ‘*formensprache*’ to compete with one another, she somewhat downplayed the significance of grave architecture in understanding this connectivity: *Archäologisch sehen wir allerdings weniger eine Migration ganzer Völkerschaften, da nur einzelne Objekte ausgewählt und in die lokale Kultur eingebunden worden sind und, nicht zuletzt, weil die Grabriten einheimischen Traditionen entsprechen. Das, was sich in der Archäologie vornehmlich niederschlägt, ist eine*

*Angleichung der Repräsentationsmittel der Eliten...*<sup>2</sup>

I argue grave architecture may indeed represent local traditions, but that these were embedded in supra-regional traditions and identities, and that the distribution of particular grave types, just as the distribution of elite goods, holds important information on supra-regional networks. Elite goods may have spread through different mechanism than grave architecture, and over larger distances. However, even today, the distribution of diagnostic grave architecture, even more so than house architecture, surpasses largely the local sphere. This is equally so, when allowing for considerable localisation. Niche graves or *lahd* is, next to shaft graves, one of the main burial practices in the Muslim world.<sup>3</sup> It is wide-spread and also practiced by Muslims in present-day Xinjiang. Put differently, a systematic study of grave architecture and typologies, promotes understanding group identity and interconnectivity.

The hypotheses and findings in Part II will no doubt be criticised, altered, and replaced with alternative theories. Nevertheless, they provide a solid framework for discussion, with clearly identified issues, based on a unique compilation of old and recent archaeological material from the Pontic steppe to Manchuria in the east.

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<sup>2</sup>Brosseder 2013, 101.

<sup>3</sup>Petersen 2013, 246–258.

## Part III

# Analysis of Yanghai



# 11 Introduction

Part III investigates the emergence of niche grave practices at the site level, using Yanghai as case study. Variability in burial practices was analysed to address the research questions formulated in § 1.1: 1) Was the niche grave form in the Turfan Basin an autochthonous or allochthonous development? 2) If allochthonous, was this the result of acculturation and/or migration, and can it be linked to similar practices elsewhere in Inner Eurasia? 3) Finally, is the research category ‘niche grave’ significant at all, and is it relevant to understand the identity of its occupants and makers?

As discussed in § 3.1, analysing mortuary variability is seen here as the basis upon which theories of autochthonous or allochthonous development can be built, as it allows investigating patterns of (dis)continuity in burial practice after lateral niche grave practices were introduced at Yanghai. On the other hand, it enables exploring the identity – notably the *social persona* – of the niche grave occupants (24). Analyses were carried out according to the methodology explained in Chapt. 3

It was further acknowledged that a considerable number of variables influence mortuary behaviour, while only a few can be linked to archaeological variables. In this case study, I therefore limited myself to assessing variability of a fivefold set of parameters, related to grave architecture (Chapt. 13), treatment of the human body (Chapt. 14), animal remains (Chapt. 15), grave goods (Chapt. 16) and chronology (Chapt. 17). I consider these parameters as the main bearers of information at the cemetery, and even if I investigated only some aspects of each of these, the analyses can easily be expanded. The number of collected data, and notably the way they were collected, allow for multiple research opportunities in the future (Chapts. 3 and 30).

Yanghai was chosen as case study because of the considerable number of niche graves, exceptional preservation conditions despite severe looting, and its extensive documentation. The cemetery was continuously in use for over one and a half millennium, allowing for a detailed study of change in burial practice.<sup>1</sup>

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<sup>1</sup>Tulufan Diqu Wenwuju et al. forthcoming.

## 12 Yanghai, setting and excavation history

Yanghai is located in a desert area in the Turfan Basin, south of the Central Tianshan Mountains at the southern foot of the Flaming Mountains in Tuyugou in Shanshan County (42°48'–42°49'N, 89°39'–89°40'). About 3000 graves are distributed over three alluvial terraces (I, II and III) of quaternary loess, covered with gravel sand and separated from each other by old stream beds of the Tuyugou. Erosion has progressively levelled the terraces so that the edges are now hard to distinguish (Figs. 12.1; 12.2; and 277, Fig. 19.1).



**Figure 12.1** – Satellite image of Yanghai, Turfan Basin (overlay site map by the author).



**Figure 12.2** – View of Yanghai (Courtesy Turfan Archaeological Institute).

At the time of writing this thesis only short excavation reports had been published on a limited number of the 519 graves excavated between 1988 and 2003. These included a report on the most serious case of looting in 1987 with descriptions of recovered objects.<sup>1</sup> In 1988, 77 graves were excavated on Terrace I and 5 on Terrace II.<sup>2</sup>

Rescue excavations were carried out in all three cemeteries between 2 March and 11 May 2003.<sup>3</sup> On Terrace I, 218 out of c. 1000 graves (2003SAY IM1–M218) were excavated; on Terrace II, 223 out of c. 1500 graves (IIM1–M223); and on Terrace III, 78 out of c. 500 graves (IIIM1–68 and M71–80). The excavated graves cover a time span between c. 1200 BCE and 200 CE.<sup>4</sup>

In 2006, eight more graves (2006TSYI IMI–IM8) were discovered when building a protection station north of Terrace I. They are heavily looted and only a summary report was published.<sup>5</sup> Apart from one double niche grave (2006TSYIM4) dated 433 CE on the basis

<sup>1</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1989; for another case of looting in 2003, see Tulufan diqu wenwuju 1998.

<sup>2</sup>Xing Kaiding 1989.

<sup>3</sup>Xinjiang Wenwu Kaogu Yanjiusuo 2004c; Xinjiang Wenwu Kaogu Yanjiusuo 2004a; Xinjiang Wenwu Kaogu Yanjiusuo 2004b; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2004; Xinjiang Tulufanxue Yanjiuyuan et al. 2011.

<sup>4</sup>The report of 1989 mentions however the existence of a group of burials dated to the period between the 3<sup>rd</sup> and the 9<sup>th</sup> c. CE., i.e. the Dalangkan'er cluster Xinjiang Wenwu Kaogu Yanjiusuo 1989, 34.

<sup>5</sup>See Chapt. VI in Tulufan Diqu Wenwuju et al. forthcoming.

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of a document, the other (2006TSYIM1–M3, M5–M8) are all Type B-graves dated 5<sup>th</sup>/4<sup>th</sup> c. BCE. None of these grave excavated in 2006 are included in the analyses.

The double niche graves on Terrace III (IIM76) and north of Terrace I (2006TSYIM4), are relatively isolated in spatial, chronological, and cultural terms. They probably both date to a transition period (3<sup>rd</sup>–5<sup>th</sup> CE) overlapping with the emergence of mounded cave chamber tombs with sloping passageways organised in batches and enclosed with stone demarcated burial precincts, such as those found west of the cemetery, and in the cemeteries of Astana, Halahozhuo and Jiahe Gouxu. The latter are largely attributed to the Gaochang Kingdom (c. 500–640) and Tang Xizhou period (640–755 CE).

The settlement site was discovered at Yanghai south of the cemetery, but has not been excavated. Inspection of pottery surface finds during my fieldwork in 2013 together with excavation leader Lü Enguo, suggested contemporaneity with Terrace III, and perhaps also Terrace II.

Despite the partial publishing of the Yanghai cemetery, I was very fortunate to be granted permission to use a manuscript of the final and forthcoming excavation report (hereafter ‘the Report’), with detailed descriptions of all graves.<sup>6</sup> Although 521 graves are documented, 2 of these are in fact ancillary pits (IIM69 and IIM70). Each one of them can be associated with one of the adjacent graves, though it cannot be determined which one and therefore they have been labelled with separate grave numbers in the Report.<sup>7</sup> When inputting them into the database, I labelled them as ancillary pits and not as graves. The only double niche grave found on Terrace III (IIM76) belongs to a later period and was not always included from the analyses, while the double niche grave north of Terrace I (2006TSYI IM4) was excluded altogether. A maximum of 519 graves were thus considered for analysis. The new grave numbering from the Report, rather than the old numbering, was used in this dissertation.

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<sup>6</sup>Tulufan Diqu Wenwuju et al. forthcoming.

<sup>7</sup>Tulufan Diqu Wenwuju et al. forthcoming, 323.

# 13 Analysis of the grave architecture

## 13.1 Introduction

Analysing variability in grave architecture required an initial assessment of grave typology (§ 13.2) and spatial distribution (§ 13.3) as a basis upon which such parameters as grave orientation (§ 13.4), width-to-length ratio of the grave mouth (§ 13.5), and variability in niche structure (§ 13.6) could be analysed.

Variability in surface structures was addressed in Part IV, as it was considered more relevant to study this in comparison with other sites in the Turfan Basin. The parameter set discussed here is not exhaustive and does not reflect the actual scope of data collected (see § 3.3). They are nevertheless considered as major indicators of change in burial architecture.

## 13.2 Grave typology

In order to assess change in burial practice at Yanghai, I adopted a grave typology, which is a synthesis of four existing typologies (TYPO I–IV) shown in Tab. 13.1, with minor adaptations. Its validity was further tested in the subsequent analyses of the present and following chapters. The adapted typology and its main types are presented in Tab. 13.2.

Type A is an oval shaft grave, similar to descriptions of A in TYPO I–IV (Tab. 13.1). Ledges – if present – are situated close to the bottom, and crossbeams to support the roof are common, two observations I support but which are only present in TYPO IV.

Type B is a rectangular shaft grave with 1 to 4 ledges, similar to B in TYPO I, II and IV, though TYPO III does not mention the rectangular form nor shaft graves with three ledges.

Type C is a rectangular shaft grave (without ledges), as in TYPO I–IV, though some-

times named differently (Tab. 13.1). A division into subtypes, based on the size of the bottom versus the mouth, is present in TYPO I (C and D), TYPO III (C and D) and TYPO IV (C), but not in TYPO II. I do not support a differentiation of Type C based on this feature, as I found it rather subjective. However, the need for a further differentiation of Type C is supported in my analysis of the – measurable – WL-ratio (§ 13.5).

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#### TYPO I

(Xinjiang Wenwu Kaogu Yanjiusuo 2004a, 35 and 52.)

- |   |  |
|---|--|
| A | Oval shaft grave (with or without ledges).   |
| B | Rectangular shaft grave with ledges [at one, two, three or four sides of the shaft].   |
| C | Rectangular shaft with straight walls with a level floor.  |
| D | Rectangular shaft with the mouth larger than the bottom. Pocket-shaped.  |
| E | (Old definition) Niche grave, linear distribution, ring-shaped mound with depression and embedded circular mud brick wall. North of the grave ancillary pit with one or two complete horses.                         |
| E | (Rev. definition) Niche grave with relatively long and narrow mouth, one or two lateral niches, often with a side ledge spared out from the floor. Niche sealed with roundwood, branches and hay. Back-filled shaft. |

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#### TYPO II

(Xinjiang Tulufanxue Yanjiuyuan and Xinjiang Wenwu Kaogu Yanjiusuo 2011, 145–146.)

- |   |  |
|---|--|
| A | Oval shaft grave with a ledge spared out from the floor along the shaft walls and a mouth larger than the bottom of the shaft. Two horizontal holes in two opposite walls used for inserting beams to support the roof. The ledges are deep inside the shaft and serve to support smaller roundwood, branches and hay. |
| B | Rectangular shaft grave with ledges at one, two, three or four sides of the shaft.   |
| C | Rectangular shaft grave.   |
| D | Niche grave, with a niche dug from the bottom of one of the long walls of the shafts.  |

---

#### TYPO III

Guo Wu 2012, 65, Table 2-1.)

- |    |   |
|----|---|
| A  | Oval shaft grave.   |
| B  | Shaft grave with ledges at respectively one (B.I), two (B.II) or four sides of the shaft (B.III). |
| C  | Shaft grave with straight walls.  |
| D  | Rectangular pocket-shaped shaft grave.  |
| Ea | Niche grave with stone mound and mud brick ringwall.  |
| Eb | [Single] niche grave.   |
| Ec | Double niche grave.   |

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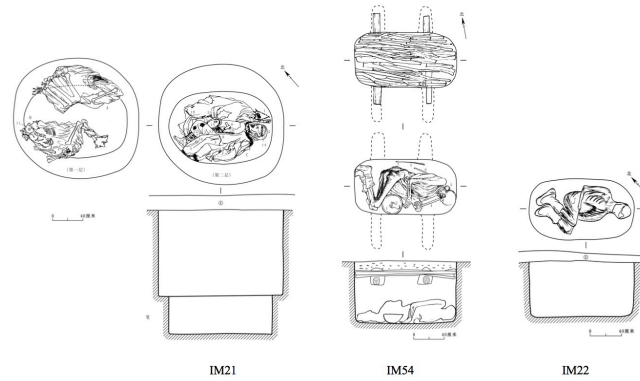
#### TYPO IV

(Tulufan Diqu Wenwuju et al. (forthcoming), Chapt. 7.)

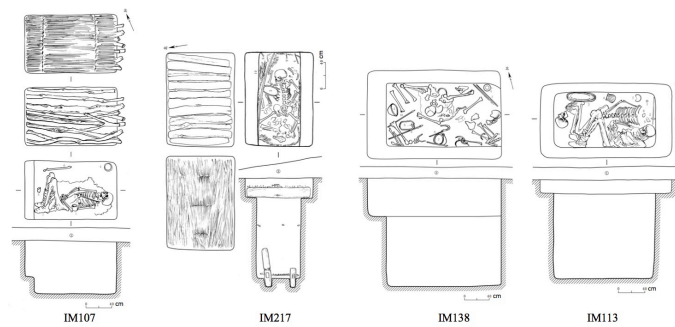
- |   |  |
|---|--|
| A | Oval shaft grave with ledges.  |
| B | Rectangular shaft graves with ledges.  |
| C | Shaft grave of which the mouth is either of the same size as, larger or smaller than the bottom. |
| D | Single niche grave.  |
| E | Double niche grave.  |
- 

**Table 13.1** – Different grave typologies suggested for Yanghai.

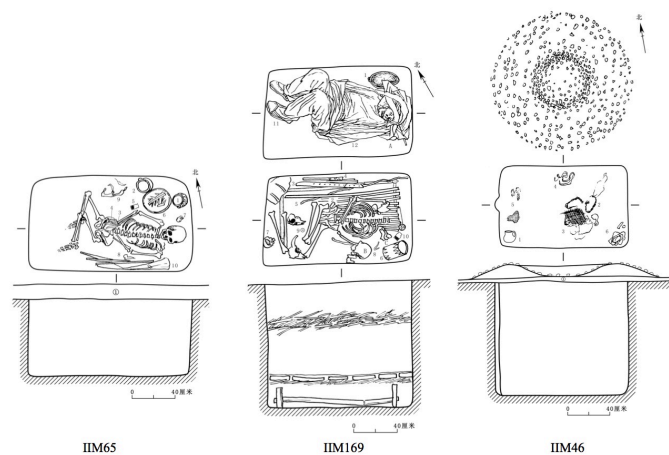
**TYPE A:** Oval shaft grave with or without a ledge around the circumference. When such a ledge is present it occurs nearer to the bottom than to the mouth of the shaft. The wooden roof is often supported by two beams inserted into the opposing long walls of the shaft.



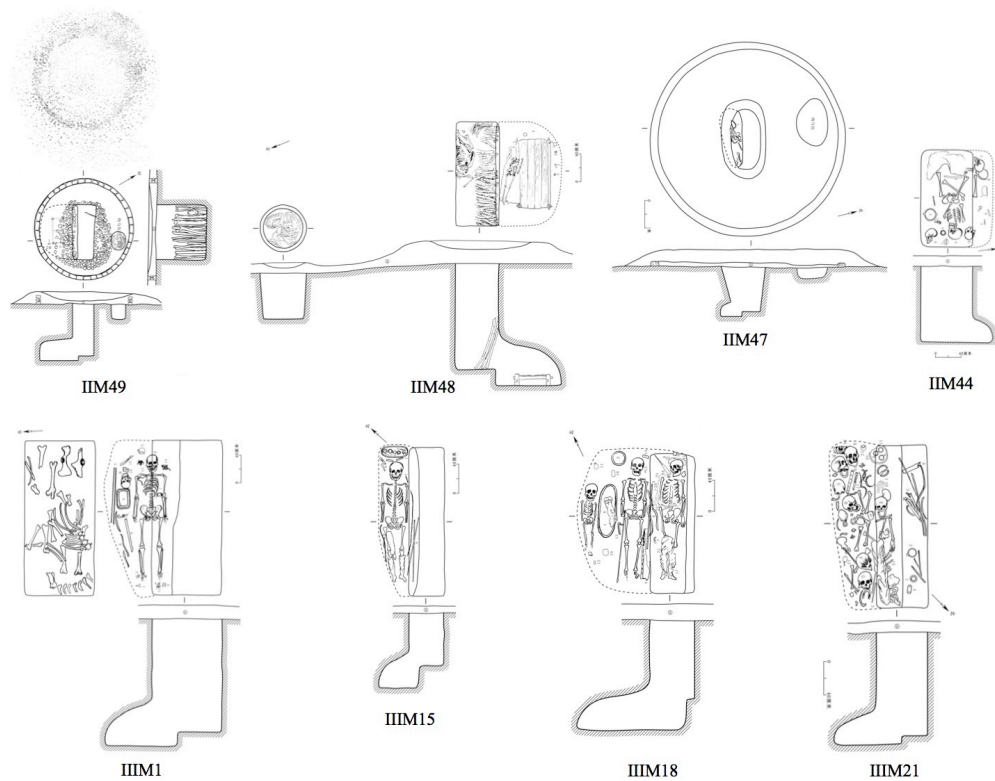
**TYPE B:** Rectangular shaft grave with 1, 2, 3 or 4 side-ledges, supporting a wooden roof and located closer to the mouth than to the bottom of the shaft. The latter is rarely supported by two beams inserted into the opposing long walls of the shaft.



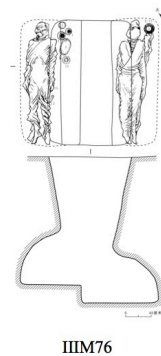
**TYPE C:** Shaft grave without side-ledges.



**TYPE D:** Niche grave with one niche positioned laterally to the entry shaft.



**TYPE E:** Niche grave with one or two niches positioned laterally to the entry shaft. This grave type is in fact a continuation of the grave type D, but belongs to a later period than D.



**Table 13.2** – Grave typology used in this dissertation (Images from Tulufan Diqu Wenwuju et al., (forthcoming), Figs. 477, 475, 474, 792, 819, 825, 831).

Type D consists of a shaft with one lateral niche, corresponding to E (old and revised definition) in TYPO I, D in TYPO II, Eb in TYPO III, and D in TYPO IV. TYPO III sees niche graves with mounds and mud brick ringwalls as a subtype of the niche graves (Ea, TYPO III). I agree with TYPO I (E, old definition) that the linear distribution and mound with embedded mud brick wall are distinct features, setting some niche graves apart from



others (§ 21.2). However, since surface structures are insufficiently documented for Yanghai (§ 21.2), and also include ancillary horse pits, which are not exclusively present in mounded niche graves with mud brick ringwall (§ 15.4), I decided to exclude surface features from my grave typology. Besides, I added the explicit mentioning that niches are positioned *laterally* to the shaft in Tab. 13.2, as I consider it a crucial attribute (§ 2.1; § 10.5).

Type E consists of a shaft with a double lateral niche, but does not necessarily constitute a different type as in TYPO IV (E). As it probably developed from Type D, it would better fit as a subtype as in TYPO III (Ec). However, it can be questioned whether a grave form represented by two samples, chronologically and spatially relatively isolated, should be included in the present typology.

None of the grave typologies in Tabs. 13.1 or 13.2 rely on mutually exclusive categories, so there is always overlap. This is because the identification of some features is less objective than others. It is straightforward to determine the presence of a niche, or to count the number of ledges, though shaft form (oval, rectangular) is more subjective. The boundaries between types A and B, and between A and C are thus fluid (Tab. 13.2).

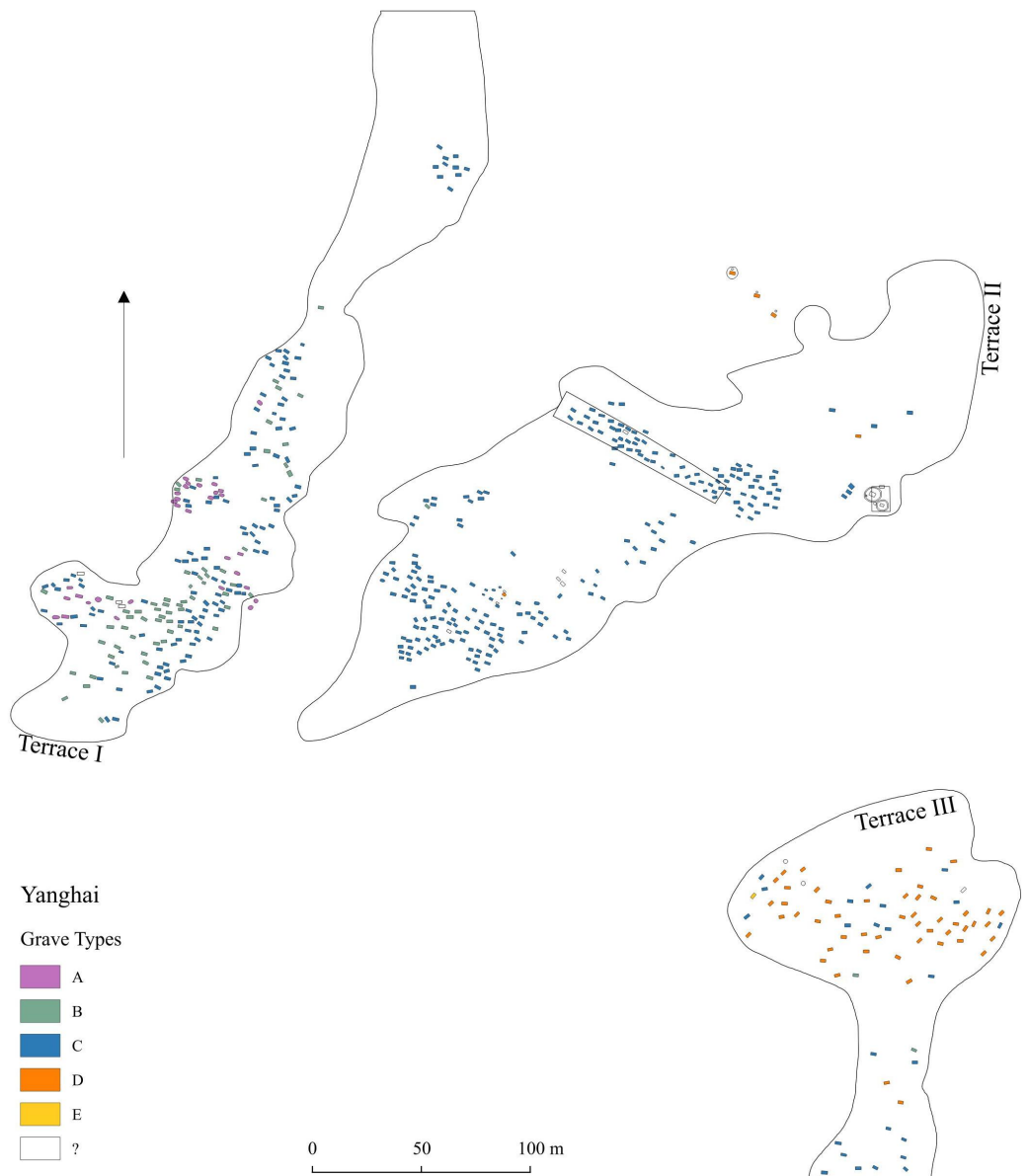
### 13.3 Spatial distribution of the graves

The vertical stratigraphy of Yanghai is simple. All graves cut the same layer of quaternary loess covered with gravel sand and do not overlap. The horizontal stratigraphy of the cemetery in combination with raw radiocarbon dates obtained from the graves, nevertheless give a preliminary idea about the expansion of the cemetery.

Five different grave types A–E (§ 13.2) are distributed over terraces I, II and III. The radiocarbon data in Fig. 17.11 (251) – discussed in more detail in § 17.3 – corroborate that all dates extracted from Terrace III, as well as Type D and E graves, are situated at the end of the sequence. The differentiation between grave types A, B and C, as well as between terraces I and II is less evident. An early outlier for one Type A grave, and at least one date from a Type B grave, come at the start of the sequence suggesting that types A and B represent the earliest grave types at Yanghai.

To visualise grave distribution, I digitised the cemetery plan and plotted the five grave types on it (Fig. 13.1 (overview); and Figs. 13.2, 13.3 and 13.4 (detail)).<sup>1</sup> The ratios of the different grave types I calculated for each terrace are shown in Tab. 13.3.

<sup>1</sup>Double grave nos. I communicated to the editors of the Report, resulted in deleting IM148, IM155 and IM159 in the southwest of Terrace I; and IIM91 in the central excavation trench, and the southernmost IIM114, IIM115, IIM120, on Terrace II. These late changes were not integrated here.



**Figure 13.1** – Distribution of grave types on georeferenced map of the site Yanghai.

	Terrace I		Terrace II		Terrace III		Total	
Type A	31	14.2%	0	0%	0	0%	31	6%
Type B	64	29.4%	1	0.4%	2	2.6%	67	12.9%
Type C	123	56.4%	217	97.3%	24	30.8%	364	70.1%
Type D	0	0%	5	2.2%	51	65.4%	56	10.8%
Type E	0	0%	0	0%	1	1.3%	1	0.2%
Total	218	100%	223	100%	78	100%	519	100%

**Table 13.3** – Ratio of grave types per terrace at Yanghai, Turfan Basin.

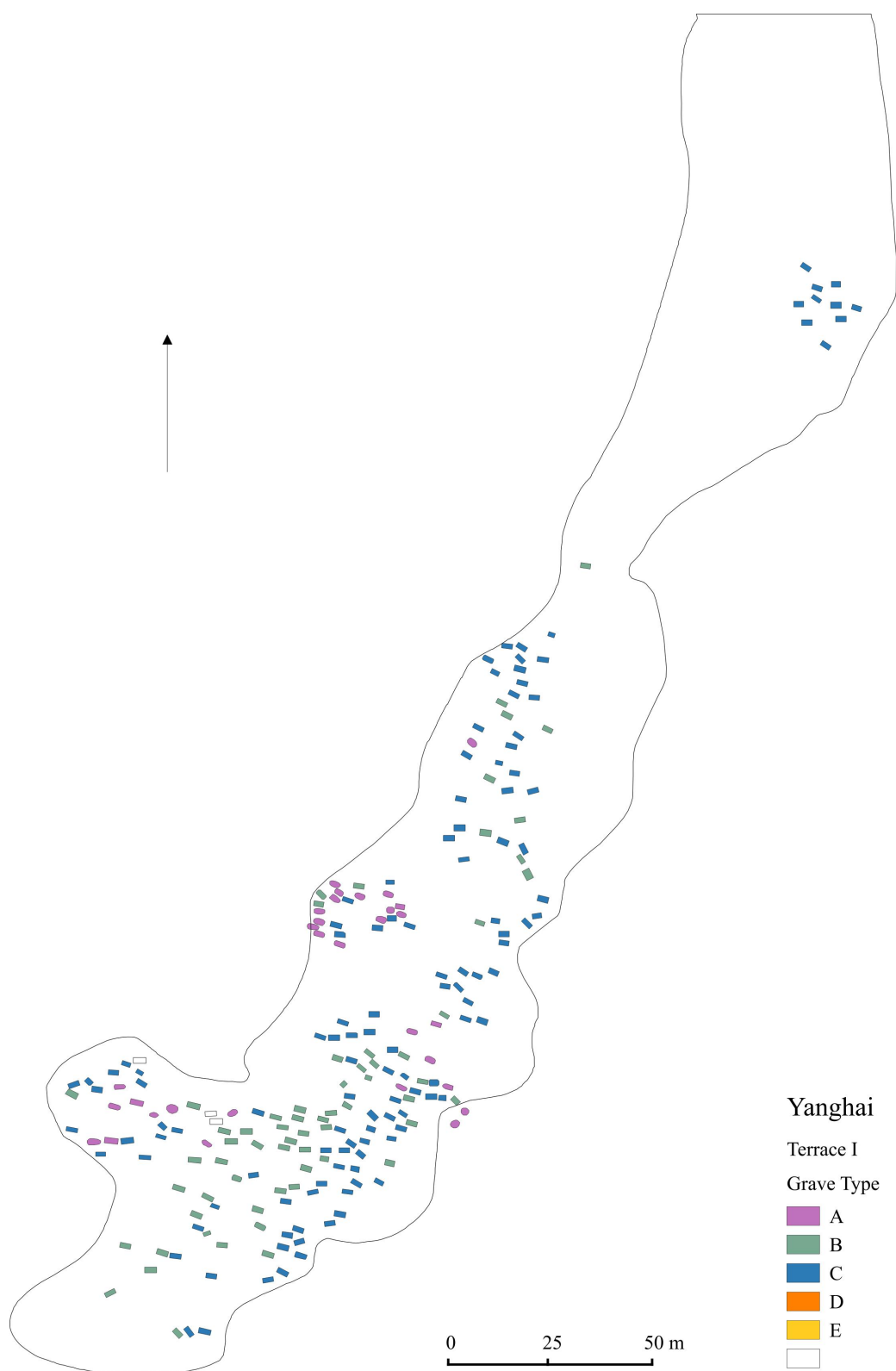


Figure 13.2 – Plan of Terrace I, Yanghai (drawing by the author)

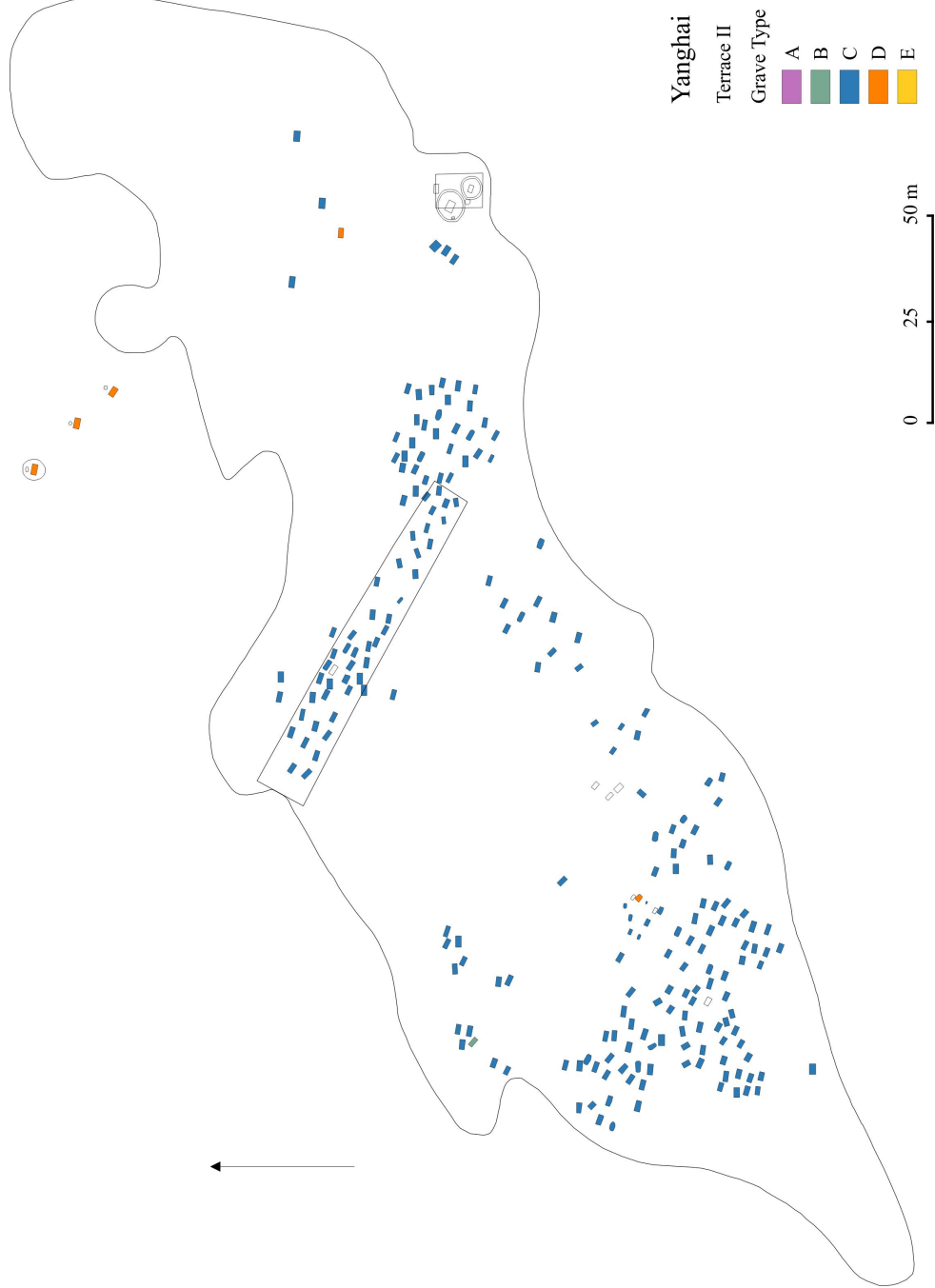


Figure 13.3 – Plan of Terrace II, Yanghai (drawing by the author)

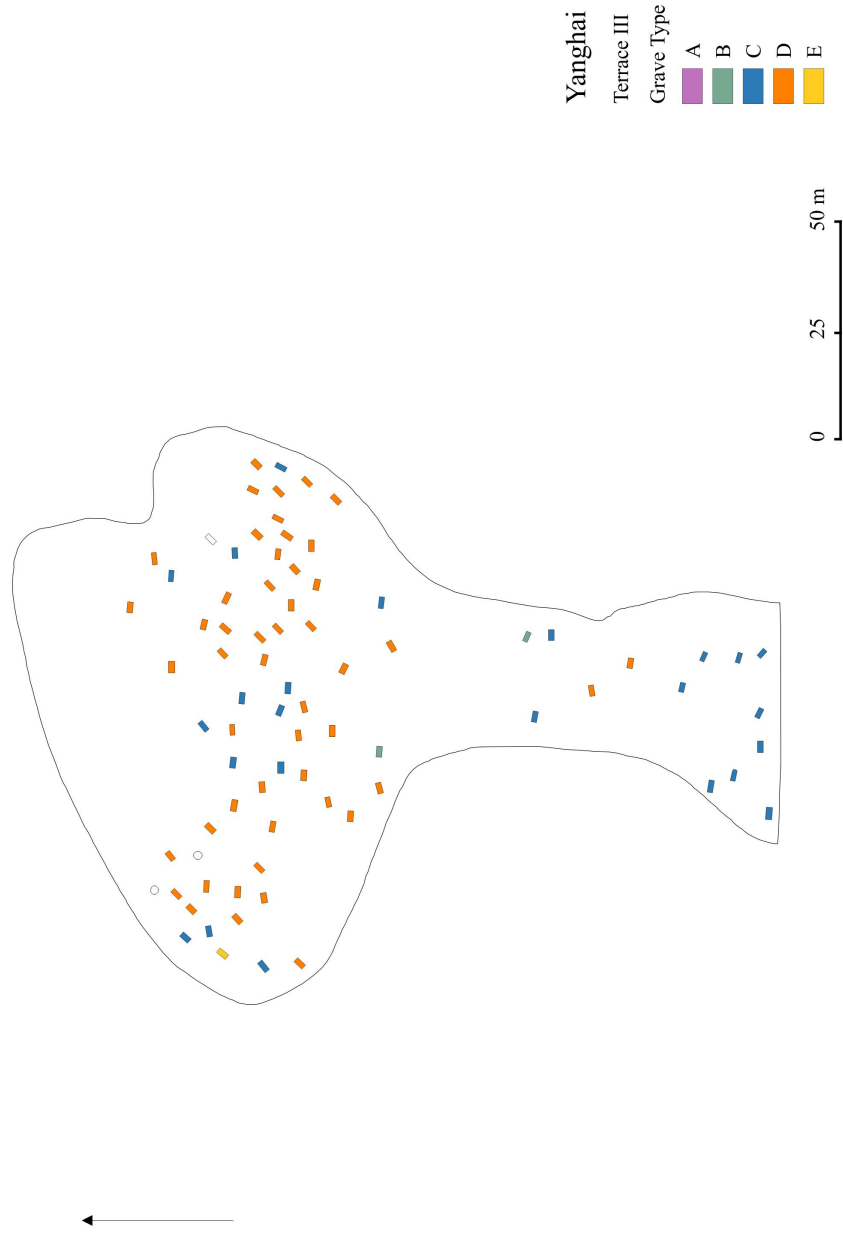


Figure 13.4 – Plan of Terrace III, Yanghai (drawing by the author)

Both the table and the distribution map – in combination with the raw radiocarbon data – give us some preliminary indications how the occupation of the cemetery shifted through time from one terrace to the other. It can thus be seen that Type C lies central in the sequence in all terrace phases. Put otherwise, it is the most common grave type and can be found on all three terraces. In Terrace Phase I, types A and B occur next to Type C, but not yet D. Type A seems to cluster in the west of the cemetery possibly because it is the oldest. On Terrace Phase III, Type C is quickly followed and dominated by Type D, but there is a strong overlap as the latter also occurs on Terrace II.

The distribution map further shows that, out of a total of five Type D graves found on Terrace II, three of these are situated north of the Terrace in a linear distribution, and clearly separated from the rest of the graves. Possibly another batch with similar graves existed along the eastern edge of Terrace II, though this cannot be confirmed as they were not properly excavated (182, Fig. 13.3)

On Terrace III, Type C and Type D are randomly distributed side-by-side without any spatial segregation. Type E, represented by only one grave on Cemetery III, is a separate case, appearing at the end or even after the cemetery *sensu strictu*.

It is acknowledged that Type E, represented by only one grave, can hardly constitute an independent type. However, it is clear from the inventory that this grave was younger than most Type D graves. It is possible that it was contemporary with another example of Type E found north of Terrace I, dated 433 CE, and/or contemporary with examples found elsewhere in the Turfan Basin (174).

In summary, the horizontal stratigraphy of the cemetery in combination with the raw radiocarbon dates, provide a workable but preliminary chronological framework to assess variability in burial customs at Yanghai. They suggest that grave types A–B–C–D–E as well as terrace phases I, II and III represent chronological sequences, even though the degree of overlap is currently not well understood. Analyses of other variables in the present and subsequent chapters (13–16) enabled to test and complement this preliminary chronology. In Chapt. 17, I assessed the relative and absolute chronology (of both internal and external data) of Yanghai in more detail against the background of these analyses, providing a more fine-grained picture of the chronology of the cemetery.

## 13.4 Grave orientation

Assessing variability of grave orientation has the advantage over body orientation (see § 14.3) that no known body postures are required to carry out the analysis. All 518 graves could thus be included. The exact orientations recorded in degrees in the Report, were fed into the database. To investigate whether the orientation was grave type specific, I regrouped and recoded the variables under ‘grave orientations’ into four groups of each two opposite sectors of 45°:

- NN/SS (NN=337.5°–360° and 0°–22.5°; SS=157.5°–202.5°)
- NE/SW (NE=22.5°–67.5°; SW=202.5°–247.5°)
- EE/WW (EE=67.5°–112.5°; WW=247.5°–292.5°)
- SE/NW (SE=112.5°–157.5°; NW=292.5°–337.5°)

Orientation	Type A		Type B		Type C		Type D		Total	
NN/SS	0	0%	0	0%	0	0%	0	0%	0	0%
NE/SW	2	6.5%	3	4.5%	5	1.4%	23	41.1%	33	6.4%
EE/WW	19	61.3%	42	62.7%	223	61.3%	27	48.2%	311	60%
SE/NW	10	32.3%	22	32.8%	136	37.4%	6	10.7%	174	33.6%
Total observations	31	100%	67	100%	364	100%	56	100%	518	100%

**Table 13.4** – Variability of grave orientation per grave type at Yanghai

Tab. 13.4 shows that out of a total of 518 graves at Yanghai, 60% are aligned along a EE-WW axis, and 0% along a NN-SS axis. Grave types A, B and C hardly show any variability, the dominant orientation being along the EE-WW axis (61.3%, 62.7%, resp. 61.3%), followed by the SE-NW axis (32.3%, 32.8%, 37.4%). The most abrupt change occurs when Type D emerges, triggering a decrease in orientations along the EE-WW and SE-NW axes (48.2% resp. 10.7%) and a step increase in the previously almost nonexistent orientations along the NE-SW axis (41.1%). This innovative NE-SW almost gains the same importance as the EE-WW orientation. Assessment of variability of body orientation in § 14.3, offers a complementary perspective to the present analysis.

## 13.5 Width-to-length ratio of the grave mouth

The Report states that similarities in grave goods show that Type C and B graves co-existed for a considerable period and that the width-to-length ratio (WL-ratio) of the grave mouth of both grave types in this period was smaller than 1:1.5 [ $< 0.67$ ]. They further claim that, after C became an independent type and finally co-existed with Type D, the WL-ratio of the grave mouth resembled that of Type D, i.e. larger than 1:2 [ $> 0.5$ ].<sup>2</sup> The analyses I carried out here offer a more fine-grained picture of developments in shaft mouth ratio with respect to grave type and cemetery phase, as discussed below.

Length (L) and width (W) of the grave shaft mouth are two parameters in grave architecture, which are largely unaffected by grave looting or surface erosion. Therefore I considered these – next to grave orientation – as important variables to study (dis)continuity in grave architecture. A total of 518 excavated graves could thus be considered. To facilitate comparative analysis (§ 21.5), I also calculated and assessed WL-ratio.<sup>3</sup> As I was interested in form and layout rather than absolute size, I preferred this above assessing area.

The WL-ratio of the shaft mouth was assessed against three parameters. Firstly, this was done in relation to grave type, to understand if narrow shaft mouths were diagnostic of Type D. Secondly, I investigated whether the minimum number of individuals (MNI) affected variability of the WL-ratio. Thirdly, I tested whether variability could not be explained by a chronological development as reflected in the horizontal stratigraphy of the graves (i.e. terrace phases), independent of grave type.

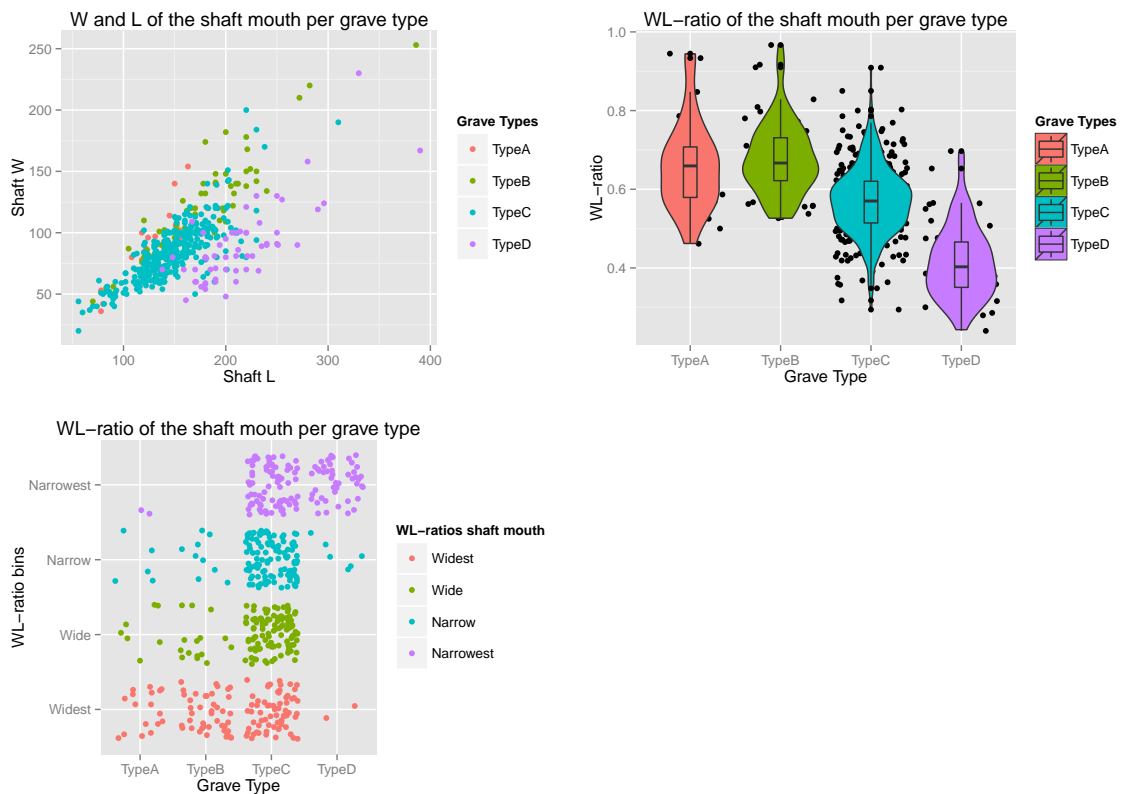
Firstly, I investigated whether WL-ratio was grave type specific. A simple scatterplot, showing the distribution of L and W against grave type, demonstrated that Type D, and to a limited degree Type C, showed longer and narrower shafts than types A and B (Fig. 13.5, upper left plot). To investigate this further, I calculated WL-ratio, and looked at the distribution of this variable against grave type, using a violin plot (Fig. 13.5, upper right plot). This way of plotting, shown here as an overlay on top of individual box plots, has the advantage of providing a more detailed picture of all the observations and ‘gravity points’ in the distribution of the data. This gives a better idea of the probability density of the data at different values. It could thus be confirmed that the shaft mouth of Type D, and part of Type C graves, were characterised by a narrower rectangular shape than the majority of

<sup>2</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt. 7, 418–419.

<sup>3</sup>I only considered WL-ratios of the shaft mouth, and not the bottom. The latter is less reliable, especially when niches are involved. In the overview table in the Report, measurements of the bottom are given, while the full text report includes both those of shaft mouth and bottom or just one. In case measurements of the two short or two long sides did not correspond, I took the maximum.



Type A, B and C graves.



**Figure 13.5** – UPPER LEFT: Scatter plot of W and L against grave type. UPPER RIGHT: Violin plot showing WL-ratio of the shaft mouth against grave type. BOTTOM: Scatter plot showing binned WL-ratios (Narrowest, Narrow, Wide, Widest) against grave type. All three plots are based on a total of 518 graves of Yanghai.

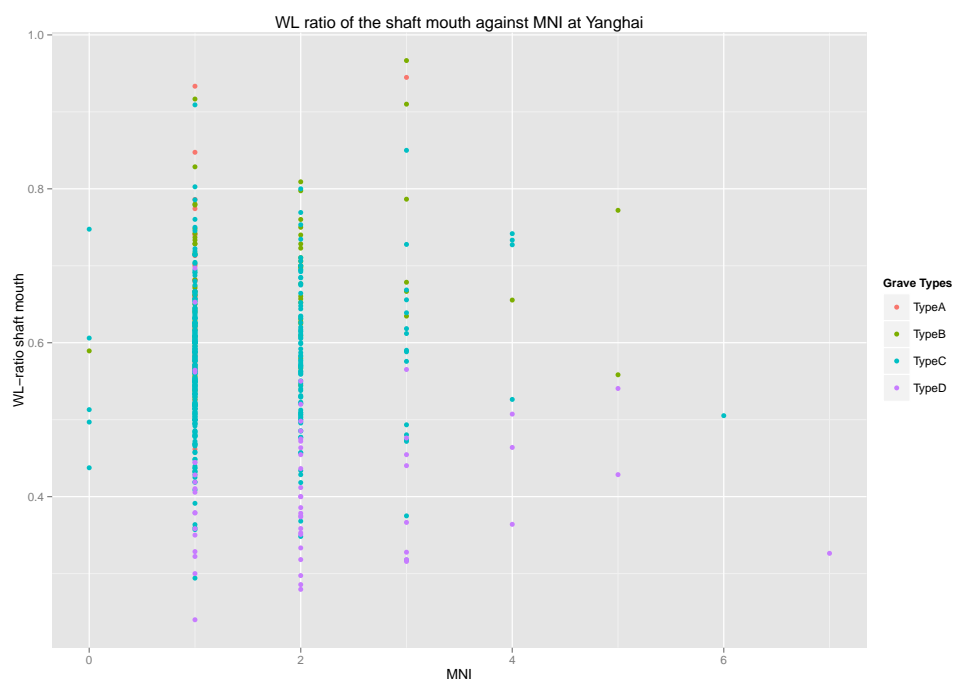
While a narrow rectangular shape of the shaft mouth is prevalent in Type D, it is far from the only or dominant shape for Type C graves. I thus became interested in understanding the overlap in the WL-ratios of both grave types. To investigate this further, I binned the WL-ratio into categories based on the quartiles. This was done because of the skewed distribution, in which it is better to neglect the mean and use the median and quartiles instead, since these give a maximum variance.

The plot at the bottom of Fig. 13.5 shows that the great majority of Type D graves fall into the category 'Narrowest' ( $\leq 0.5075$ ), a few in 'Narrow' ( $\leq 0.5743$ ) and 2 in 'Widest' ( $\leq 0.9667$ ). Type C graves are represented in all WL-ratio categories. Types A and B are most strongly represented in the ratio categories 'Wide' ( $\leq 0.6382$ ) and 'Widest' ( $\leq 0.9667$ ).

WL-Ratio	Type A		Type B		Type C		Type D	
Widest	17	54.8%	43	64.2%	68	18.7%	2	3.6%
Wide	7	22.6%	15	22.4%	107	29.4%	0	0%
Narrow	5	16.1%	9	13.4%	109	29.9%	6	10.7%
Narrowest	2	6.5%	0	0%	80	22%	48	85.7%
Total	31	100%	67	100%	364	100%	56	100%

**Table 13.5** – WL-ratio of shaft mouth per grave type, Yanghai

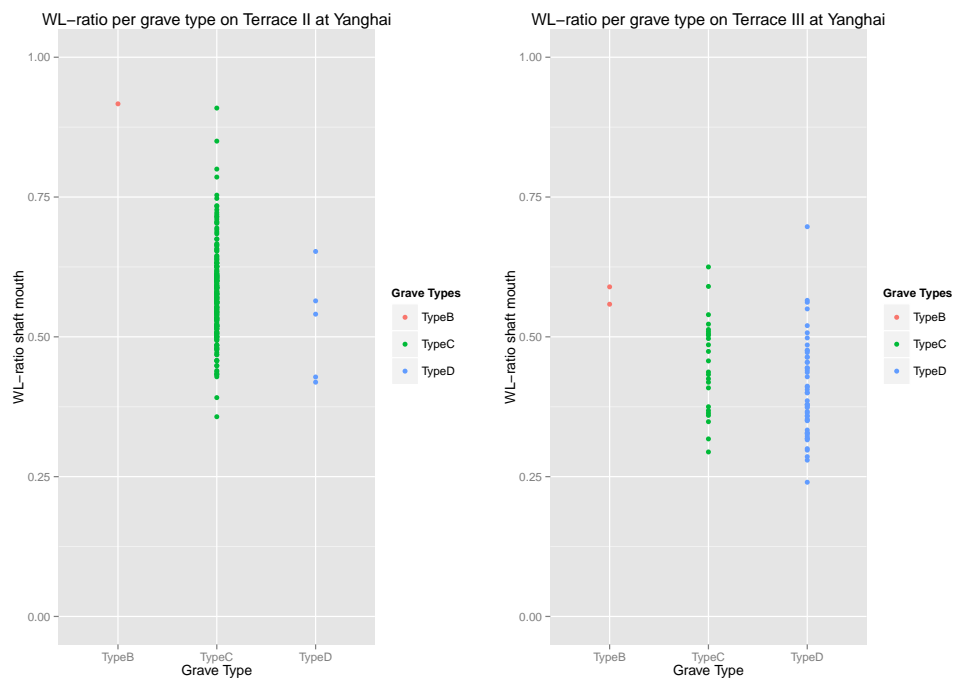
The exact percentages of grave types in each ratio category are shown in Tab. 13.5. Type A and B graves predominantly fall in the categories ‘Wide’ (22.6% resp. 22.4%) and ‘Widest’ (54.8% resp. 64.2%). For Type B graves which are furnished with side ledges, this is not surprising. Nearly two thirds of Type C graves fall into the categories ‘Wide’ (29.4%) and ‘Narrow’ (29.9%), while the rest is almost equally spread over ‘Widest’ and ‘Narrowest’ (18.7% and 22%). Finally, a majority of 85.7% of Type D graves falls within the category ‘Narrowest’ and 10.7% in the category ‘Narrow’. This suggests Type D graves were typically represented by the category ‘Narrowest’. To confirm that the WL-ratio of the grave mouth at Yanghai correlated indeed with grave type, I also had to account for the overlap with Type C graves, as a fifth of these also fell into the category ‘Narrowest’. In the next two steps, I therefore verified if other variables than grave type, such as the number of individuals buried inside the graves and chronology, did not affect the WL-ratio.



**Figure 13.6** – WL-ratio shaft mouth versus MNI, Yanghai

Secondly, I examined whether the Minimum Number of Individuals (MNI) buried inside the graves, affected the WL-ratio of the shaft mouth. I assumed a larger number of individuals would result into a wider grave shaft. The analysis in Fig. 13.6 shows however that the MNI has only a moderate influence on the ratio. While the WL-ratio slightly increases with the MNI in Type D, it remains narrower than Type C graves. On the other hand, the size of Type C is hardly affected by a larger MNI.

Thirdly, I tested whether variability in WL-ratio could instead be explained by a chronological development independent of grave type. If so, this would probably be reflected in the horizontal stratigraphy of the cemetery, given the assumption that the terraces were progressively occupied (I<II<III, corresponding with terrace phases I–III) (§ 13.3). A certain degree of overlap should be taken into account. Surely, grave goods and other parameters are further crucial to understand the chronological development of the graves, but this will be looked at later on (Chapt. 17).

**Figure 13.7** – WL-ratio shaft mouth per grave type on Terrace II (L) resp. Terrace III (R), Yanghai

The two scatterplots in 13.7 juxtapose the WL-ratios of terraces II and III. The ratios are not binned to get a picture as detailed as possible. On Terrace II, the WL-ratios of Type D graves fall well within the range of those for Type C. On Terrace III, the WL-ratios of both Type C and D graves fall within the same range, which is now much narrower than on Terrace II.

The exact share of each grave type in the different WL-ratio categories is rendered in Tabs. 13.6 and 13.7. From this it seems that shifts in WL-ratios are most pronounced in the category ‘Narrowest’. On Terrace II graves in this category account for 18.4% in Type C and 40% in Type D graves. On Terrace III however, this share quadrupled in Type C graves (75%) while it more than doubled in Type D graves (90.2%).

WL-Ratio	TypeB		Type C		Type D	
Narrowest	0	0%	40	18.4%	2	40%
Narrow	0	0%	70	32.3%	2	40%
Wide	0	0%	71	32.7%	0	0%
Widest	1	100%	36	16.6%	1	20%
Total	1	100%	217	100%	5	100%

**Table 13.6** – WL-ratio of shaft mouth against grave type on Terrace II, Yanghai.

WL-Ratio	TypeB		Type C		Type D	
Narrowest	0	0%	18	75%	46	90.2%
Narrow	1	50%	4	16.7%	4	7.8%
Wide	1	50%	2	8.3%	0	0%
Widest	0	0%	0	0%	1	2%
Total	2	100%	24	100%	51	100%

**Table 13.7** – WL-ratio of shaft mouth against grave type on Terrace III, Yanghai.

In conclusion, shaft mouths of the category ‘Narrowest’ ( $\leq 0.5075$ ) are not only diagnostic of niche graves, but represent a chronological development affecting all grave types on Terrace III. Put otherwise, the analysis of the variability in WL-ratio demonstrated that there is an unexpected element of continuity in the subsurface structures of Types C and D on Terrace III. This also implies that there is more discontinuity between the shaft graves on Terrace II, and those on terrace III, than expected. Analysis of the WL-ratio demonstrated that the architectural dimensions of shaft graves from Terrace III departed from the same principles as the niche graves from Terrace III, and so from this perspective, they were more related to the latter than to the shaft graves on Terrace II.

## 13.6 Variability in niche grave structures

For the analysis of variability in niche grave structures, I was inspired by Akishev and Kushavey, who claimed an evolution from shaft graves, to shaft graves with a slanting separation of wood or stone to demarcate the space of the deceased, and subsequently boot-shaped niche graves without a side-ledge, and finally niche graves with a side-ledge (15, Fig. 2.2). I thus investigated whether such an evolution held for the Yanghai sample, i.e. if niche graves with side-ledges are younger than those without. I also examined whether the presence of a side-ledge, coincided with a specific grave orientation or WL-ratio of the shaft mouth, and spatial distribution in the cemetery, suggesting different chronologies.

Tab. 13.8 suggest that niche graves with a side-ledge prevailed (45) over those without (11). The former favoured orientation along the NE-SW axis (46.7%), closely followed by the EE-WW axis (44%), but rarely the SE-NW axis (8.9%). The latter favoured a EE-WW grave orientation (63.6%), followed by a NE-SW and SE-NW orientation (each 18.2%). To conclude niche graves with a side-ledge had a stronger preference for the more innovative orientation NE-SW (see § 13.4). Put differently, based on variability grave orientation, it could be argued that niche graves with a side-ledge are later than those without. However, the small sample of niche graves without a side-ledge warns us to be cautious with these results.

Grave orientation	Niche graves with ledge		Niche graves without ledge	
NN-SS	0	0%	0	0%
NE-SW	21	46.7%	2	18.2%
EE-WW	20	44.4%	7	63.6%
SE-NW	4	8.9%	2	18.2%
Total	45	100%	11	100%

**Table 13.8** – Niche graves with(out) side-ledge versus grave orientation, Yanghai

Tab. 13.9, shows both niche graves with and without side-ledges predominantly fall into the category of ‘Narrowest’ shaft mouth (86.7% resp. 81.8%), followed by the category ‘Narrow’ (11.1% resp. 9.1%). Both have 1 grave in the category ‘Widest’ (2.2% resp. 9.1%).

LW-ratio shaft mouth	Niche graves with ledge		Niche graves without ledge	
Widest	1	2.2%	1	9.1%
Wide	0	0%	0	0%
Narrow	5	11.1%	1	9.1%
Narrowest	39	86.7%	9	81.8%
Total	45	100%	11	100%

**Table 13.9** – Niche graves with(out) side-ledge versus WL-ratio of the grave mouth, Yanghai

It was further observed that niche graves with a side-ledge accounted for 3 out of a total of 5 niche graves on Terrace II, and 43 out of 51 on Terrace III. Furthermore, niche graves without ledges are mostly distributed in the north of Terrace III. The fact that they cluster at the centre of the northern part, could indicate they are earlier than those further away from the centre, but the pattern is too vague to be significant.

In conclusion, while assessing grave orientation gave some indication that niche graves with side-ledge were later than those without, no such chronological significance could be attributed based on variability in WL-ratio.

## 13.7 Conclusion

This chapter set off with an assessment of grave typology (§ 13.2) and spatial distribution (§ 13.3) as a basis upon which different aspects of grave architecture could be investigated.

The analysis in § 13.4 demonstrated that grave orientation remained almost unchanged in grave types A, B and C, while an abrupt change followed the appearance of grave type D. While types A, B and C favoured an orientation along the EE/WW, followed by the SE/NW axis, Type D still favoured the EE/WW axis, but the innovative NE/SW orientation almost gained equal importance. The analysis of *body* orientation in § 14.3 gives a different and complementary perspective to the present one.

Assessment of the WL-ratio of the shaft mouth (§ 13.5) demonstrated an unexpected high degree of continuity between the structure of Type C and D graves on Terrace III, precisely there, where the grave typology *in se* could not provide significant and measurable differentiation. This implies that there is a formal distinction between Type C on Terrace II and Type C on Terrace III, and that terrace location will need to be considered in all subsequent analyses.

Furthermore, apart from the obvious difference between single and double niche graves (Tab. 13.2), other variations, like the presence or absence of a ledge in niche graves, seemed hardly chronologically relevant (§ 13.6). The presence of mounds with embedded mud brick on some of the niche graves, on the other hand, arguably sets it apart as a different type (178), though surface structures are only discussed in § 21.2.

The validity of the grave typology ‘A–E’ (Tab. 13.2) and three terrace phases (I–III) as chronological parameters to assess change in burial practice, was further tested in the analyses of the subsequent chapters (14–17). Since terrace location seemed significant too in assessing variability, as demonstrated by the analysis of WL-ratio, all further analyses of parameters were consistently carried out against both grave type and terrace location.

# 14 Analysis of the human remains

## 14.1 Introduction

This chapter assessed a set of parameters related to the treatment of human remains, to understand patterns of (dis)continuity in burial practices at Yanghai. Variability in body treatment and posture (§ 14.2), body orientation (§ 14.3), mixed body postures and orientations (§ 14.4) and single, double and multiple burial practices (§ 14.5) was successively assessed against grave type and terrace phase.

An excavation summary made the following statements on burial practice at Yanghai. The majority is buried flexed on the back, a posture mainly distributed on terraces I and II. Flexed burials on the side are relatively early and mostly used for single burials. Extended burial on the back was mainly found on Terrace III, rarely on terraces I and II. Furthermore, it was claimed that single, double and multiple burial occur, that double burials mostly involved a man and a woman, and members of multiple burials probably belonged to the same household.<sup>1</sup>

I wanted to move beyond these generalisations and map changes related to the treatment of the human body more precisely and from multiple perspectives. The analyses are based on a total MNI of 755 human individuals.

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<sup>1</sup>Xinjiang Tulufanxue Yanjiuyuan et al. 2011, 142.



## 14.2 Body treatment and posture

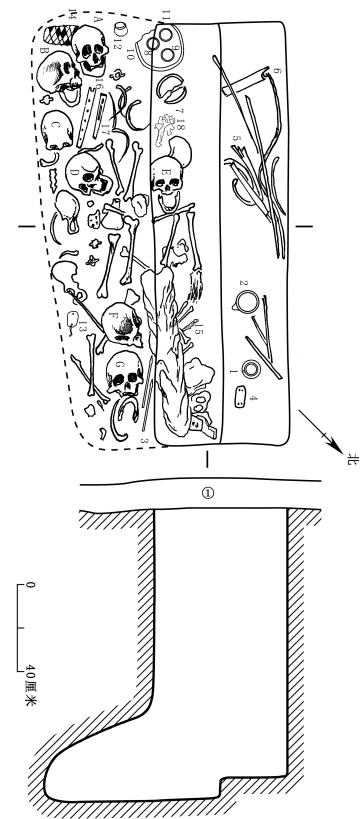
Inhumation was common at Yanghai, and no evidence of other practices such as cremation or exposure was found. In this section, variability of body posture was analysed to investigate its relation with grave type.

Since body posture is only known for primary burials, I first assessed the ratio of primary versus secondary burials. It is known that determination of primary burials is much easier than secondary ones.<sup>2</sup> In some graves at Yanghai, secondary burial is strongly suggested, as in grave IIIM21. Although this grave was looted and the bones displaced, the niche was too small to house six adults and one infant in primary position (Fig. 14.1). Probably earlier burials were moved aside to make place for new depositions, and/or disarticulated bones from individuals buried elsewhere were added.

Many burials were disturbed due to looting and water seepage, causing displacement of bones of both primary and – sometimes orderly piled – secondary burials. Multiple depositions at various time slots further disturbed the original position of the bones. This made it hard to distinguish true secondary, disturbed secondary, and disturbed primary burials. Therefore, I decided not to assess the ratio of primary against secondary burials, as this would require a separate study.

With these shortcomings in mind, I focussed on three aspects in the present analysis. Firstly, I wanted to get a general idea of the distribution or placement of the human bones per grave type as found during excavation, and how this affected the study of body posture. Secondly, I wanted to investigate variability in body posture in relation to grave type, and thirdly, terrace phase.

Body posture was inserted in the database precisely as it was recorded in the (text) Report. The data were collected and inserted at the lowest possible level, i.e. specifying the



**Figure 14.1** – Grave IIIM21, Yanghai (Tulufan Diqu Wenwuju et al. forthcoming, Fig. 8.3.1.)

<sup>2</sup>For an overview of literature on secondary burial as well as the complexities of interpretation, see Chénier 2009, 27–40.

posture of the upper body, lower body, arms or hands, and head or face in case this was specified. These data could then be aggregated to the level needed in the analysis. A total MNI of 755 human individuals was assessed.

### Distribution of human bones

To assess the distribution of bones, the variables were first grouped to form new categories as shown in Tab. 14.1 (see also 30, Fig. 3.3). Given the inconsistent reporting of the position of the hands and orientation of the face, I excluded these from the analysis.

Disturbed	Type A		Type B		Type C		Type D		Total	
Unkn. posture or N/A	0	0%	1	0.9%	6	1.2%	4	3.4%	11	1.5%
Bones disorderly	1	3%	73	65.2%	275	56%	81	68.1%	430	57%
Bones piled up	2	6.1%	5	4.5%	8	1.6%	0	0%	15	2%
Disturbed articulated	0	0%	1	0.9%	9	1.8%	2	1.7%	12	1.6%
Extended on the abdo.	1	3%	0	0%	0	0%	0	0%	1	0.1%
Extended on the back	0	0%	2	1.8%	19	3.9%	30	25.2%	51	6.8%
Flexed	5	15.2%	0	0%	15	3.1%	0	0%	20	2.6%
Flexed on the back	2	6.1%	14	12.5%	118	24%	2	1.7%	136	18%
Flexed on the side	22	66.7%	16	14.3%	41	8.4%	0	0%	79	10.5%
Total observations	33	100%	112	100%	491	100%	119	100%	755	100%

**Table 14.1** – Distribution of human bones per grave type, Yanghai (in MNI and %).

The table shows that the bones of a considerable share of the total MNI of 755 human individuals were left in disorderly fashion: 65.2% in Type B, 56% in Type C and 68.1% in Type D, with ignorable quantities of orderly piled up bones. This is no surprise, since a large number of graves at Yanghai has been disturbed.<sup>3</sup> These results reminds us of the importance of studying secondary burial practices as well as post-depositional processes, even though this is outside the ambition of the present dissertation. The figures for types B–D contrast with the situation in Type A, where only 3% of the bones were found in disorderly fashion – probably due to the popularity of single burial (207, Tab. 14.7) – and 6.1 % were piled up.

<sup>3</sup>It makes no sense here to calculate the number of disturbed graves, as even this parameter can be assessed in different ways. For example, body posture can be disturbed, but its orientation still intact, or vice versa (desiccated bodies which have been displaced).

### Known body postures per grave type

In the next step, I filtered out and regrouped all known and complete body postures, to assess their variability in relation to grave type (Tab. 14.2). Only 267 observations with known body postures were counted, which is 35.4% of the total excavated MNI of 755.

Out of 25 observations (100%) in Type A, 88% are buried ‘flexed on the side’, 2 individuals or 8% ‘flexed on the back’, and 1 individual or 4% ‘extended on the abdomen’. Out of 32 observations (100%) in Type B, 16 or 50% are buried ‘flexed on the side’, 14 individuals or 43.8% ‘flexed on the back’, and only 2 individuals or 6.2% ‘extended on the back’. Out of 178 observations in Type C, 118 individuals or 66.3% are buried ‘flexed on the back’, 41 or 23% ‘flexed on the side’, and a minority of 19 or 10.7% ‘extended on the back’. Out of 32 observations in Type D, 30 individuals or 93.8% are ‘extended on the back’ and only 2 individuals or 6.2% ‘flexed on the back’.

Body Posture	Type A		Type B		Type C		Type D		Total	
Extended on the abdo.	1	4%	0	0%	0	0%	0	0%	1	0.4%
Extended on the back	0	0%	2	6.2%	19	10.7%	30	93.8%	51	19.1%
Flexed on the back	2	8%	14	43.8%	118	66.3%	2	6.2%	136	50.9%
Flexed on the side	22	88%	16	50%	41	23%	0	0%	79	29.6%
Total observations	25	100%	32	100%	178	100%	32	100%	267	100%

**Table 14.2** – Known body postures per grave type at Yanghai (in MNI and %).

These figures imply that new body postures first appeared as a minority practice in a certain grave type, after which they gradually increased in number to form the dominant practice in the next new grave type. While ‘flexed on the side’ was the main posture in Type A, it is so too in Type B but here its share had decreased dramatically in favour of ‘flexed on the back’, which now almost took an equal share. This evolution continued in Type C, where ‘flexed on the back’ became the dominant practice pushing back ‘flexed on the side’ as a minority practice, while the innovative ‘extended on the back’ was introduced as a minority practice. In Type D, ‘extended on the back’ became the standard, while ‘flexed on the back’ was rare and ‘flexed on the side’ absent altogether. ‘Flexed on the abdomen’ was a deviant practice only found in one Type A grave. Possibly prone burials had a special meaning, or referred to an unusual cause of death.

In conclusion, assessment of body posture versus grave type suggests that at Yanghai, emerging minorities with innovative body postures can be seen as the precursor of changes

in grave architecture. Put differently, changes in body posture were the forebodes of new grave types, in which they eventually represented the dominant posture.

### Known body postures per grave type and per terrace phase

When assessing variability in body posture from the perspective of grave type in combination with terrace phase, I obtained a different perspective (Tab. 14.3). In general, the dominant posture on each terrace is different: on Terrace I it is ‘flexed on the side’ (49.6%); on Terrace II ‘flexed on the back’ (77.3%) and on Terrace III ‘extended on the back’ (86.7%).

Body Posture	Type A	Type B	Type C	Type D	Total					
<b>TERRACE I</b>										
Extended on the abdo.	1	4%	0	0%	0	0%	0	0%	1	0.8%
Extended on the back	0	0%	2	6.2%	4	5.9%	0	0%	6	4.8%
Flexed on the back	2	8%	14	43.8%	40	58.8%	0	0%	56	44.8%
Flexed on the side	22	88%	16	50%	24	35.3%	0	0%	62	49.6%
Total observations	25	100%	32	100%	68	100%	0	0%	125	100%
<b>TERRACE II</b>										
Extended on the abdo.	0	0%	0	0%	0	0%	0	0%	0	0%
Extended on the back	0	0%	0	0%	2	2.2%	4	80%	6	6.2%
Flexed on the back	0	0%	0	0%	74	80.4%	1	20%	75	77.3%
Flexed on the side	0	0%	0	0%	16	17.4%	0	0%	16	16.5%
Total observations	0	0%	0	0%	92	100%	5	100%	97	100%
<b>TERRACE III</b>										
Extended on the abdo.	0	0%	0	0%	0	0%	0	0%	0	0%
Extended on the back	0	0%	0	0%	13	72.2%	26	96.3%	39	86.7%
Flexed on the back	0	0%	0	0%	4	22.2%	1	3.7%	5	11.1%
Flexed on the side	0	0%	0	0%	1	5.6%	0	0%	1	2.2%
Total observations	0	0%	0	0%	18	100%	27	100%	45	100%

**Table 14.3** – Known body postures per terrace and grave type at Yanghai (in MNI)

On Terrace I, the most frequent and probably earliest body posture ‘flexed on the side’ represents 88% of the individuals in Type A, followed by 50% in Type B and 35.3% in Type C. ‘Flexed on the back’, the second most frequent posture on Terrace I accounts for 58.8% of the individuals in Type C, followed by 43.8% in Type B, and 8% in Type A. ‘Extended on the back’ is a minority practice in types B and C. On Terrace II, the most frequent posture of ‘flexed on the back’ accounts for the great majority of individuals in Type C (80.4%), but only for 20% in Type D. While the share of individuals buried ‘flexed on the side’ has now shrunk to 17.4% and only figures in Type C, those ‘extended on the back’ now account for 80% of the individuals in Type D, with an occasional one found in Type C (2.2%). On Terrace III, ‘Extended on the side’ is the majority posture in both Type C (72.2%) and Type D (96.3%) graves. Apart from this, ‘flexed on the back’ becomes a minority practice in Type C (22.2%) and only shows up in one case in Type D graves (3.7%). ‘Flexed on the side’ almost disappeared and is only present in 1 Type C grave (5.6%).

In other words, we see the same interesting pattern as in the previous analysis (197 ff.), that changes in body posture announced the advent of new grave types in which this innovative posture became dominant. ‘Flexed on the side’ probably represented the oldest posture at Yanghai. It existed exclusively on Terrace I, and was the main body posture (88%) in types A and B. Furthermore, the minority posture of ‘flexed on the back’ (8%), also found in grave Type A, announced the advent of two new grave types on Terrace I, first Type B, quickly followed by Type C, in which this eventually became the majority posture (43.8% resp. 58.8%). The innovative minority posture ‘extended on the back’ present in both types B and C (6.2% resp. 5.9%), announced the advent of Type D on Terrace II, and eventually Terrace III, where this type and this posture prevailed.

In conclusion, body posture at Yanghai was determined first by its location on a specific terrace, and subsequently by its attribution to a specific grave type. Type C was the only grave type that underwent all the changes from ‘flexed on the side’ to ‘flexed on the back’ and finally ‘extended on the back’, a development which took place as the graves gradually occupied Terrace I, II and finally III. The most surprising result of the analyses, is that they suggest that changes in body postures were the forebodes for changes in grave type.

## 14.3 Body orientation

Body orientation was assessed both versus grave type and body posture. In the Report, body orientation is recorded in approximate cardinal directions: N, E, S or W. I derived a more exact body orientation from the grave orientation as specified in degrees ( $^{\circ}$ ) in the same report and verified this with the line drawings. Data were streamlined before starting the analysis. Two inconsistencies that were corrected in consultation with excavation leader Lü Enguo need mentioning. The north arrow in the line drawing of the disturbed niche grave IIM48 is wrong, and a western body orientation ( $292^{\circ}$ ) should be assumed. Another error relates to IIM37 where the north arrow on the drawing was wrong, and where the correct body orientation of all three individuals is  $103^{\circ}$ .

I only assessed the body orientation for known body postures. All the others, including also one case of a desiccated corpse found in niche grave IIM216 where the body posture was known but not in original position due to grave looting, were excluded from the analysis. In some cases where the text report gave with apparent certainty a specific body orientation despite the partly disarticulated skeleton, I have followed this.

Different from assessing grave orientation where only four categories were considered (§ 13.4), eight sectors of  $45^{\circ}$  were used to analyse body orientation, since directionality of the body could be assessed too. These included: 1) NN orientation ( $337.5^{\circ}$ – $0^{\circ}$  and  $0^{\circ}$ – $22.5^{\circ}$ ); 2) NE orientation ( $22.5^{\circ}$ – $67.5^{\circ}$ ); 3) EE orientation ( $67.5^{\circ}$ – $112.5^{\circ}$ ); 4) SE orientation ( $112.5^{\circ}$ – $157.5^{\circ}$ ); 5) SS orientation ( $157.5^{\circ}$ – $202.5^{\circ}$ ); 6) SW orientation ( $202.5^{\circ}$ – $247.5^{\circ}$ ); 7) WW orientation ( $247.5^{\circ}$ – $292.5^{\circ}$ ); 8) NW orientation ( $292.5^{\circ}$ – $337.5^{\circ}$ ). It is unlikely that the Yanghai people considered more than eight different orientations, and the organisation of the graves does further not suggest that focal points other than cardinal directions motivated the choice of specific body orientations.

### Body orientation vs grave type and terrace phase

Analysing variability of body orientation versus grave type (Tab. 14.4) and terrace phase (Tab. 14.5), was based on a total of 266 observations or known body postures.

Tab. 14.4 shows that an EE body orientation prevailed in grave types A, B, and C (56%, 59.4%, resp. 56.2%), followed by the SE (32%, 34.4%, resp. 29.8%). A significant minority of 8.4% WW body orientations in Type C is noteworthy. Clear differences can be observed between Type C and D graves, whereby the dominant body orientation in the latter changes into the NE (54.8%), followed by the EE (32.3%).

Orientation	Type A		Type B		Type C		Type D		Total	
NN	1	4%	1	3.1%	0	0%	0	0%	2	0.8%
NE	1	4%	1	3.1%	3	1.7%	17	54.8%	22	8.3%
EE	14	56%	19	59.4%	100	56.2%	10	32.3%	143	53.8%
SE	8	32%	11	34.4%	53	29.8%	0	0%	72	27.1%
SS	0	0%	0	0%	0	0%	0	0%	0	0%
SW	0	0%	0	0%	0	0%	0	0%	0	0%
WW	1	4%	0	0%	15	8.4%	3	9.7%	19	7.1%
NW	0	0%	0	0%	7	3.9%	0	0%	8	3%
All	25	100%	32	100%	178	100%	31	100%	266	100%

**Table 14.4** – Body orientation per grave type at Yanghai (in MNI).

Tab. 14.5 shows further that body orientation was extremely consistent during terrace phases I and II. The main body orientation was towards the EE, followed by the SE, independent of grave type. On Terrace I, this ratio was 64%/30.4%, and on Terrace II 54.2%/35.4%. Body orientations formed a minority and increase slightly from 1.6% on Terrace I to 5.2% on Terrace II where it shared its position with the NW orientations (5.2%). The only two niche graves with known body posture point to the east.

Abrupt changes take place on Terrace III, where the most popular body orientation suddenly changes towards the NE, previously not seen in terrace phases I and II. It is followed by two groups, one oriented towards the WW (26.7%) and another towards the EE (22.2%). A minority is oriented towards the NW orientation (6.7%). The three niche grave complexes IIM47, IIM48 and IIM49 with mud brick surface structures, show three different body orientations towards the EE, WW, and SE. This inconsistency is noteworthy and can currently not be explained (see also 200).

On Terrace III, the NE orientation is the dominant orientation in Type D, followed by the EE (29.6%) and a minority to the WW (7.4%). This is very different from Type C graves on Terrace III, where the dominant orientation is towards the WW, followed by NE and NW orientations (16.7% resp. 16.7%) and a minority towards the EE (11.1%).

In conclusion, assessment of variability against both grave type and terrace phase provides a more reliable picture than assessment against grave type alone. Body orientation is very stable on terraces I and II, regardless grave type, and shows that over half of the population was buried towards the EE, followed by the SE.

Orientation	Type A		Type B		Type C		Type D		Total	
<b>TERRACE I</b>										
NN	1	4%	1	3.1%	0	0%	0	0%	2	1.6%
NE	1	4%	1	3.1%	0	0%	0	0%	2	1.6%
EE	14	56%	19	59.4%	48	70.6%	0	0%	81	64.8%
SE	8	32%	11	34.4%	19	27.9%	0	0%	38	30.4%
SS	0	0%	0	0%	0	0%	0	0%	0	0%
SW	0	0%	0	0%	0	0%	0	0%	0	0%
WW	1	4%	0	0%	1	1.5%	0	0%	2	1.6%
NW	0	0%	0	0%	0	0%	0	0%	0	0%
All	25	100%	32	100%	68	100%	0	0%	125	100%
<b>TERRACE II</b>										
NN	0	0%	0	0%	0	0%	0	0%	0	0%
NE	0	0%	0	0%	0	0%	0	0%	0	0%
EE	0	0%	0	0%	50	54.3%	2	50%	52	54.2%
SE	0	0%	0	0%	34	37%	0	0%	34	35.4%
SS	0	0%	0	0%	0	0%	0	0%	0	0%
SW	0	0%	0	0%	0	0%	0	0%	0	0%
WW	0	0%	0	0%	4	4.3%	1	25%	5	5.2%
NW	0	0%	0	0%	4	4.3%	1	25%	5	5.2%
All	0	0%	0	0%	92	100%	4	100%	96	100%
<b>TERRACE III</b>										
NN	0	0%	0	0%	0	0%	0	0%	0	0%
NE	0	0%	0	0%	3	16.7%	17	63%	20	44.4%
EE	0	0%	0	0%	2	11.1%	8	29.6%	10	22.2%
SE	0	0%	0	0%	0	0%	0	0%	0	0%
SS	0	0%	0	0%	0	0%	0	0%	0	0%
SW	0	0%	0	0%	0	0%	0	0%	0	0%
WW	0	0%	0	0%	10	55.6%	2	7.4%	12	26.7%
NW	0	0%	0	0%	3	16.7%	0	0%	3	6.7%
All	0	0%	0	0%	18	100%	27	100%	45	100%

**Table 14.5** – Body orientation per grave type and per terrace at Yanghai (in MNI)



The abrupt change in body orientation in Terrace III, is a strong argument for discontinuity in burial practices. The change toward a NE orientation, previously not seen on terraces I and II and especially significant for Type D graves, is noteworthy, just as the sudden importance of WW orientation for shaft graves on Terrace III. The meaning of the sudden shift is not clear, but could reflect ideological, ethnic, political changes and shifting allegiances.

### Body orientation vs body posture

After assessing body orientation against grave type (§ 14.3), I assessed it against body posture, also based on a total of 266 individuals with known postures. One individual was excluded from the analysis (IIM216-A). Despite the undisturbed body posture of this desiccated body, its position and orientation was disturbed resulting from body displacement.

Orientation	Flexed				Extended				Total Post.	
	on side	on back	on abdomen	on back	on back	on back	on back	on back		
NN	0	0%	0	0%	0	0%	0	0%	0	0%
NE	0	0%	1	0.7%	1	100%	20	40%	22	8.3%
EE	49	62%	80	58.8%	0	0%	14	28%	143	53.8%
SE	24	30.4%	45	33.1%	0	0%	3	6%	72	27.1%
SS	0	0%	0	0%	0	0%	0	0%	0	0%
SW	0	0%	0	0%	0	0%	0	0%	0	0%
WW	4	5.1%	5	3.7%	0	0%	10	20%	19	7.1%
NW	0	0%	5	3.7%	0	0%	3	6%	8	3%
All	79	100%	136	100%	1	100%	50	100%	266	100%

**Table 14.6** – Body orientation per body posture at Yanghai (in MNI).

‘Body orientation’ was recoded into eight sectors as in § 14.3. The results in Tab. 14.6 show that, out of a total of 79 individuals buried in flexed posture on the side, the majority or 62% are oriented towards the EE, followed by 30.4% towards the SE, and a minority of 5.1% towards the WW. This ratio is largely maintained for individuals buried in flexed posture on the back, with 58.8% towards the EE, 33.1% towards the SE, and minorities of 3.7% respectively 2.9% towards the WW and NW.

Out of 50 individuals buried ‘extended on the back’, a majority of 40% are oriented towards the NE, followed by 28% towards the EE, 20% towards the WW, and two minorities

of each 6% towards the SE and NW. There is only 1 example of an extended burial on the abdomen, and it is oriented towards the NE. Such prone burials were a deviant posture within the practice ‘extended on the back and oriented to the NE’, and probably had a special meaning (197).

In conclusion, there is a strong homogeneity between the body postures ‘flexed on the side’ and ‘flexed on the back’ on the one hand, and a body orientation towards the EE followed by the SE on the other. Furthermore, the latter show a strong discontinuity with the posture ‘extended on the back’, in which the innovative NE body orientation prevailed, followed by an EE and – unexpectedly – WW orientation.

## 14.4 Mixed body postures and orientations

Postures and orientations are largely consistent within the same grave. Nevertheless, at least four exceptions could be identified:

- IM198 (Type C)
  - flexed on the back (F) (WW)
  - flexed on the side (M) (WW)
- IIM205 (Type C)
  - Top layer: flexed on the side (F) (SE)
  - Bottom layer:
    - flexed on the back (M) (NW)
    - secondary burial (F)
    - secondary burial (subadult)
- IIM64 (Type C)
  - Top layer:
    - extended on the back (F) (WW)
  - Bottom layer:
    - flexed on the side (F) (WW)
    - flexed on the back (M) (WW)
- IIM154 (Type C)
  - Top layer:
    - flexed on the back (F) (EE)
  - Bottom layer:

flexed on the back (F) (EE)  
secondary burial subadult  
flexed on the back (M) (WW)

The first example (IM198), is a double burial of a woman in flexed posture on the back next to a man flexed on the side. Both are buried in a single-layered shaft grave with EE body orientation.

The second example (IIM205) is a two-layered shaft grave. The top layer holds a woman flexed on the side, with SE body orientation. The bottom layer holds a man flexed on the back with NW body orientation, as well as a woman and a child, which are probably secondary depositions.

The third example (IIM64) is a two-layered shaft grave. The top layer holds a woman in extended posture on the back with WW body orientation and a horse and ox skull. In the bottom layer, a woman in flexed posture on the side lies next to a man flexed on the back, both with WW body orientation.

The fourth example (IIM154) is a two-layered shaft grave. The top layer holds a woman flexed on the back with EE body orientation. The bottom layer holds three individuals: one woman flexed on the back with EE body orientation; a secondary burial of a subadult; and a man flexed on the back with WW body orientation.

As discussed later in § 15.5, some of these graves, including IM130 and IIM64, enjoyed relative rich animal sacrifice (223–223).

To summarise, the first two examples show mixed postures and orientations within the same grave. The other two show either a mixture of postures or a mixture of body orientations. There is a remarkably high occurrence of WW body orientation in all these examples, i.e. more than half of the individuals with known postures (6 out of 10). At Yanghai, WW body orientations only represented 7.1% of all the assessed individuals with known body posture (201, Tab. 14.4). As to the mixed postures, these include either a combination of flexed burials on the back and flexed burials on the side, or a combination of flexed burials on the back, flexed burials on the side, and extended burials on the back.

Probably more examples exist of graves with mixed postures or orientations, which could not be assessed due to disturbance, so that no known postures could be included in the analysis. Furthermore, only those examples were included for which at least two fully documented postures were recorded. This is the reason why graves as IM21, with two levels and mixed orientations (NW and SE) dropped out because all its occupants were recorded as ‘flexed’ without specifying whether this was on the side or on the back (196, Tab. 14.1).

In conclusion, out of the 4 examples with mixed postures and/or orientations, all 4 concern Type C graves. In addition, 3 out of 4 of these graves are organised in two layers. Multi-layered graves were possibly designed as a solution for burying people with different ideologies or different status, expressed in different body postures and/or orientations. These variables are normally largely consistent within graves or burial groups, and deviating practices most likely bear information on different identities. Dividing the burial space into separate levels would thus provide a confined space for all the deceased, while also accommodating for their ideological needs or social status, and expressing their close association with the other people inside the grave, without having to dig separate graves.

## 14.5 Single, double and multiple burial practice

In this section, I assessed variability in single, double and multiple burial practices or, put differently, the custom of depositing one, two and three or more individuals. This was done against grave type (207 ff.), gender (208, ff.), and against grave type in combination with terrace phase (210 ff.). The deceased counted in Minimum Number of Individuals (MNI) were fed into the database, and then recoded in variables defined as MNI=1, MNI=2 and MNI $\geq$  3. The analyses are based on a total MNI of 755.

Since graves were frequently re-opened to add new individuals, the choice for three categories (MNI=1, MNI=2 and MNI $\geq$  3) seems rather arbitrarily. Multiple burials can indeed be seen as an extension of double burials, and the latter as an extension of single burials. At Yanghai, multiple burials were mostly the result of multiple depositions at different time slots. The construction of the grave, whereby the entry shaft was not backfilled, facilitated frequent re-opening.

How to defend these categories then? In case of random distribution, the ratios of all three categories should be comparable in all grave types. That the ratios from Yanghai show significant differences, is one good argument. Moreover, single, double and multiple burials are categories commonly used in the literature. Finally, there is no need to divide the multiple burials into subgroups. Since the maximum number does not surpass 8 individuals, mass burials –which could be considered a separate category –are not an issue here.

The MNI counts are based on the number of individuals as mentioned in the Report, either retrieved from the text or from various static and unrelated overview tables.<sup>4</sup> In some cases looting was so severe that very few human bones were recovered and that the MNI

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<sup>4</sup>Tulufan Diqu Wenwuju et al. forthcoming.

could not be established. Here, the MNI was set to ‘1’. In cases where no bones were recovered, the MNI was set to ‘0’. A total of 6 graves were empty, including 1 Type B grave (IIM66) and 5 Type C graves (IIM120, IIM198, IIM212, IIM45 and IIM65). These are likely the result of severe looting, and should not be considered as cenotaphs.

Further inconsistencies were streamlined in consultation with excavation leader Lü Enguo. In general, where the text report was more complete, the overview tables were updated and vice versa. Where doubts on the exact MNI existed, the drawings of the individual graves were also consulted.

Small differences between the present analyses and those I published earlier, are the result of an incomplete streamlining of these data or of different decisions made.<sup>5</sup> For example, the double niche grave IIM76 as well as the individual buried in a small pit adjacent to the main grave pit of IM157 were excluded in the former analysis but included in the present one. Furthermore, a small error in the MNI of IIM205 was adjusted from 3 to 4. Finally, in a few cases it was decided to adjust the MNI from ‘0’ to ‘1’ where a minimum of human bone fragments was present, like in the case of grave IIM41. These changes resulted in a different total MNI for Yanghai: i.e. 755 for the present analysis i.s.o. 750 in the earlier analyses. Despite these differences, this did not contradict earlier conclusions.

### MNI per grave type

Tab. 14.7 shows the assessment of MNI including ratios per grave type. Single burials were by far the dominant practice found in Type A (90.9%), while hardly a tenth of the population enjoyed multiple burials, and double burials did not occur at all.

MNI	Type A		Type B		Type C		Type D		Total MNI	
MNI=1	30	90.9%	34	30.4%	255	51.9%	18	15.1%	337	44.6%
MNI=2	0	0%	46	41.1%	166	33.8%	48	40.3%	260	34.4%
MNI≥ 3	3	9.1%	32	28.6%	70	14.3%	53	44.5%	158	20.9%
Total MNI	33	100%	112	100%	491	100%	119	100%	755	100%

**Table 14.7** – Single, double and multiple burial per grave type at Yanghai (in MNI counts and %).

In Type B, double burials represented a new and dominant practice used for 41.1% of the population, followed by single burials and multiple burials representing each about a

<sup>5</sup>Timperman 2015.

third of the population (30.4% resp. 28.6%). Single burial regained popularity in Type C representing about half of the population (51.9%) while a third enjoyed double burial (33.8%) and multiple burials dropped to 14.3%. In Type D single burials became a minority practice (15.1%), while double and multiple burials were common practices (40.3% resp. 44.5%).

### MNI in relation to gender

Gender was considered too when assessing variability in single, double and multiple burials. Sex determination was done by Han Kangxin, and used as a basis for the counts in the analyses.<sup>6</sup> Han determined the sex of adults and part of the subadults. Since sex determination of subadult bones is usually not reliable – unless Han relied on secondary sex characteristics of desiccated corpses or on gender-specific grave goods – I opted to run the analysis from two different perspectives: one based on the reported sex determinations as put forward by Han (Tab. 14.8), and another based on corrected sex determination, whereby I considered all subadults (<18 y) as having an unknown sex (Tab. 14.9). The results of both analyses are comparable and are summarised below. Variability in gender in multiple burials was not analysed.

	Type A		Type B		Type C		Type D	
Single M	19	57.6%	16	14.3%	106	21.6%	15	12.6%
Single F	8	24.2%	8	7.1%	95	19.3%	2	1.7%
Single ?	3	9.1%	10	8.9%	54	11%	1	0.8%
Double MF	0	0%	26	23.2%	104	21.2%	26	21.8%
Double MM	0	0%	4	3.6%	22	4.5%	10	8.4%
Double FF	0	0%	0	0%	10	2%	0	0%
Double M?	0	0%	6	5.4%	6	1.2%	8	6.7%
Double F?	0	0%	4	3.6%	16	3.3%	4	3.4%
Double ??	0	0%	6	5.4%	8	1.6%	0	0%
Multiple	3	9.1%	32	28.6%	70	14.3%	53	44.5%
Sum MNI	33	100%	112	100%	491	100%	119	100%

**Table 14.8** – Single, double and multiple burials including sex representation per grave type at Yanghai (in MNI counts and percentages). Based on *reported* sex determination.

<sup>6</sup>See vol. ‘Xinjiang Yanghai gu mudi tougu de yanjiu baogao’, in Tulufan Diqu Wenwuju et al. forthcoming, 1–14.

	Type A		Type B		Type C		Type D	
Single M	18	54.5%	15	13.4%	99	20.2%	14	11.8%
Single F	8	24.2%	8	7.1%	86	17.5%	2	1.7%
Single ?	4	12.1%	11	9.8%	70	14.3%	2	1.7%
Double MF	0	0%	24	21.4%	96	19.6%	22	18.5%
Double MM	0	0%	4	3.6%	12	2.4%	8	6.7%
Double FF	0	0%	0	0%	10	2%	0	0%
Double M?	0	0%	8	7.1%	16	3.3%	12	10.1%
Double F?	0	0%	4	3.6%	20	4.1%	2	1.7%
Double ??	0	0%	6	5.4%	12	2.4%	4	3.4%
Multiple	3	9.1%	32	28.6%	70	14.3%	53	44.5%
Sum MNI	33	100%	112	100%	491	100%	119	100%

**Table 14.9** – Single, double and multiple burials including sex representation per grave type at Yanghai (in MNI counts and percentages). Based on *corrected* sex determination.

In the single burials with known sex, over half of the individuals in Type A belong to males, and a quarter to females. In Type B too, there are twice as many males than females. In Type C, they take an equal share, and in Type D, single burials are almost exclusively males.

In the double burials with known sex, roughly a fourth/fifth of the total MNI in grave types B, C and D, enjoyed double burial of one man and one woman. Joint burials of two woman or two men are not very significant, except in Type D where the joint burial of males involved 8.4% of the people buried in this type. Double burials are absent in Type A graves.

In conclusion, when analysing MNI in relation to gender, Type D distinguishes itself from the rest in the almost exclusive use of single burial for males, which may perhaps be explained, as I argued earlier, by the emergence of a small male elite in this type.<sup>7</sup> This can be interpreted as an element of discontinuity. On the other hand, the popularity of double and multiple burials in Type D graves suggests continuity with earlier practices originating in Type B graves. However, as argued below, the assumption that grave type was decisive in understanding the variability in MNI at Yanghai is misleading.

<sup>7</sup>Timperman 2015, 4–6.

### MNI per terrace

When looking at the same data from another angle and at a slower pace, i.e. terrace phase, some interesting developments in Type C and D graves can be observed, suggesting an alternative explanation than the one above. Tabs. 14.10 and 14.11 show the changes in the number of human individuals (MNI) in grave Type C respectively Type D, on terraces II and III.

	Type C						MNI total	
	MNI=1		MNI=2		MNI $\geq$ 3			
Terrace II	160	56.7%	86	30.5%	36	12.8%	282	100%
Terrace III	11	26.8%	12	29.3%	18	43.9%	41	100%
Total	171	52.9%	98	30.3%	54	16.7%	323	100%

**Table 14.10** – Distribution of single, double and multiple burials in Type C graves on terraces II and III.

	Type D						MNI total	
	MNI=1		MNI=2		MNI $\geq$ 3			
Terrace II	4	44.4%	0	0%	5	55.6%	9	100%
Terrace III	14	12.7%	48	43.6%	48	43.6%	110	100%
Total	18	15.1%	48	40.3%	53	44.5%	119	100%

**Table 14.11** – Distribution of single, double and multiple burials in Type D graves on terraces II and III.

Type C shows the following changes (Tab. 14.10). On Terrace II, more than half (56.7%) of the individuals enjoyed single burial, followed by a third (30.5%) who enjoyed double burial and slightly more than a tenth (12.8%) multiple burial. This ratio changes considerably on Terrace III, where single burials drop to only a quarter (26.8%) of the Type C occupants, and the share of multiple burials rises to 43.9%. The number of double burials (30.3%) remains roughly the same as on Terrace II.

Type D shows a slightly different development (Tab. 14.11). On Terrace II, more than half (55.6%) of the occupants of grave Type D enjoyed multiple burial, and the rest (44.4%) single burial. Double burials in niche graves do not exist on this terrace. This changes on Terrace III, where both double and multiple share the leading position each representing 43.6%, while only 12.7% of the individuals was buried singly. In other words, while multiple



burials lost more than ten percent in popularity, double burials in Type D appear as a new phenomenon on Terrace III and single burials become a minority.

This implies that, when terrace phase is considered, we obtain an alternative perspective on changes in single, double and multiple burial practices, which could be interpreted as follows. On Terrace II, the occupants of the innovative Type D graves seem to follow single burial practices common in Type C graves (C=56.7% vs D=44.4%), while at the same time renouncing to double burials altogether (C=30.5% vs D=0%) and encouraging multiple burials (C=12.8% vs D=55.6%). On Terrace III however, there is sudden popularity of double burials in Type D graves, now rising from 0% to 43.6%. The practice of single burials is now applied to a minority (12.7%) while multiple burials drop slightly to the popularity rate of double burials (43.6%).

In conclusion, double and multiple burial practice became much more popular during Terrace Phase III than Phase II, while single burials decreased in number. Furthermore, multiple burial was particularly significant in Type D graves. This was already the case on Terrace II where they formed the majority in this grave type, while on Terrace III they shared this dominant position with double burial practice.

The popularity of double and multiple burial practice in Terrace Phase III, especially in Type D, cannot easily be explained. Throughout Inner Asia, lateral niche grave practices are mostly associated with single burial (Part II), except for Heigouliang in the eastern Tianshan mountains, where double and multiple burial practices also occurred (§ 8.5).

Social changes such as a growing importance of the nuclear family, or an increase in intermarriage between different groups are possible explanations. Alternatively, practical considerations rather than social changes accounted for the changes. Insufficient burial space on Terrace III could have been compensated with a restriction on single burial and an encouragement of multiple burial. In fact, Terrace III, on which the majority of niche graves was found, is considerably smaller than the other two terraces (Yanghai III = 15000 m<sup>2</sup> against Yanghai II = 15750 m<sup>2</sup> and Yanghai I = 25800 m<sup>2</sup>). In case practical considerations were decisive in the preference for multiple burials, then a similar development in MNI ratios should be visible on Terrace III, regardless grave type. In Type C, double and multiple burials increase jointly from 43.3% on Terrace II, to 73.2% on Terrace III. This is similar as in type D, where there is a rise from 55.6% on Terrace II to 87.2% on Terrace III. However, why did single burial remain a rather common practice in Type C on Terrace III, or was this a certain continuity with Terrace II? In other words, the practical argument can neither be dismissed nor confirmed.

## 14.6 Biological variability of the Yanghai population

Biological variability constitutes strictly speaking not an aspect of the *social persona* discussed in § 3.1. However, if pitfalls such as racial or ethnic discourses are avoided (see § 2.7), biological data are still useful in exploring the identity of the Yanghai niche grave occupants.

To better understand (dis)continuity in burial practices and intra-cemetery kinship relations at Yanghai, I prepared investigating non-metric variation in the teeth by assessing about 30 traits based on the ASU dental anthropology system.<sup>8</sup> This would enable defining if and how Type C and D occupants were related, using a simple and low-cost method to investigate (dis)continuity within well defined groups.<sup>9</sup>

An initial assessment of the available sample (c. 300/489 skulls) made me realise that the unusual bad condition of the teeth, the very high degree of postmortem and antemortem tooth loss, and the large number of mandibles and skulls which were not labelled with corresponding numbers of graves or individuals, would not suffice to obtain significant results. Fortunately, later on, I was given access to the physical anthropological report of Yanghai, which constitutes a separate volume in the forthcoming Report.

This report focused on an assessment of the skulls, including age and sex determination, estimation of life expectancy and palaeopathology, and included also a non-metric dental analysis based on the ASU dental anthropology system.<sup>10</sup> The analysis was based on a sample of 489 skulls (complete or broken) and 82 isolated tooth elements from mandibles or maxillae. A total of 27 dental non-metric traits were assessed. The analysis also suffered from antemortem and postmortem tooth loss and incomplete marking of the bones, which resulted in the decision to carry out the analysis dissociated from all information regarding location or grave number. In other words, all dental material from c. 2000 BCE to 200 CE was analysed without reference to grave number, and thus grave type or phase.<sup>11</sup>

The conclusions of this non-metric dental analysis were thus of limited use to my research, stating that the whole Yanghai sample was largely consistent with the western

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<sup>8</sup>Turner et al. 1991.

<sup>9</sup>I am much indebted to the Turfan Academy and the Turfan Archaeological Institute for facilitating such research, and to Raphaël Panhuysen from the University of Amsterdam for helping me prepare the forms and reference documentation.

<sup>10</sup>Turner et al. 1991; for further references, see ‘Xinjiang Yanghai gu mudi tougu de yanjiu baogao’, in Tulufan Diqu Wenwuju et al. forthcoming, 99–128.

<sup>11</sup>‘Xinjiang Yanghai gu mudi tougu de yanjiu baogao’, in Tulufan Diqu Wenwuju et al. forthcoming.

Eurasian complex, while exhibiting some regional differences.<sup>12</sup> Elsewhere in the Report it was argued that the morphological traits of the skulls from Yanghai (for the same sample of c. 2000 BCE–200CE), were clearly inclined towards the Caucasoid type, with two thirds belonging to the Europoid subtype and one third to the Mediterranean subtype. It was further claimed that the population from the first three phases (c. 2000 BCE–200 BCE) was rather stable showing little change, while that of the fourth phase (c. 200 BCE–200 CE) showed a clear increase of Mongoloid features but not enough to represent a fundamental change in composition.<sup>13</sup>

Furthermore, stable carbon and nitrogen isotope analysis of human bone collagen from the 12<sup>th</sup> c. BCE to the 2<sup>nd</sup> c. CE, carried out by Si et al., demonstrated that from the 2<sup>nd</sup> c. BCE onward, the diet of the Yanghai people consisted of a larger proportion of animal protein than in earlier periods. They inferred from this that from the 2<sup>nd</sup> c. BCE onward stockbreeding was core to the subsistence activities of the Yanghai people – even more so than in previous periods – and that crop farming was less important. They claimed this was consistent with the grave goods from Yanghai which confirmed the growing importance of pastoralism.<sup>14</sup>

In conclusion, the Yanghai population shows a marginal biological discontinuity from Terrace Phase III onward, but we don't know whether this only took place in niche graves or in all grave types. Based on the present physical anthropological research, there are no indications that an entire new population replaced the local population between c. 200 BCE and 200 CE, the period niche graves emerged. After c. 200 BCE, the Yanghai people increasingly depended on animal proteins in their diet.

## 14.7 Conclusion

The body posture of 267 out of 755 human individuals or 35.4% of the total MNI at Yanghai could be assessed. The high disturbance of skeletal material was due to frequent re-opening of the graves for multiple depositions, water seepage and looting. Secondary burial was possibly practiced too, but its scope could not be investigated here (195).

Body posture, analysed in § 14.2, depended mainly on two variables. The first and most important was terrace location: 'flexed on the side' was most common on Terrace I; 'flexed on the back' on Terrace II; and 'extended on the back' on Terrace III. Nevertheless, there

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<sup>12</sup>Tulufan Diqu Wenwuju et al. forthcoming, 99–128.

<sup>13</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt. IV, 421.

<sup>14</sup>Si Yi et al. 2013.

was considerable overlap. Grave type was the second most important variable determining body posture. ‘Flexed on the side’ was most common in types A and B, ‘flexed on the back’ in Type C, and ‘extended on the back’ in Type D. Again, considerable overlap existed. Changes in body posture seemed to predict the advent of new grave types.

Assessment of body orientation (§ 14.3) had the advantage over grave orientation (§ 13.4) that directionality of the head could be considered too. Body orientation was stable in types A, B and C on terraces I, II and III, favouring a EE followed by SE orientation. An abrupt change came with the emergence of niche graves on Terrace III. Whereas the few niche graves on Terrace II showed no consistency in body orientation, a NE body orientation was diagnostic of niche graves on Terrace III applied to over half of the niche grave occupants, followed by the EE orientation. Interestingly, NE orientations were virtually absent in Type C graves, regardless terrace location. The main body orientation for Type C occupants on Terrace III was towards the WW, while a minority was oriented towards the NW, NE and EE. Analyses of body orientation thus generated strong arguments for discontinuity between Type D and C occupants, as well as between terraces II and III.

Body orientation was also assessed against body posture (203 ff.). The advantage of the latter was that less ambiguity is involved in determining body posture than grave type. Both postures ‘flexed on the side’ and ‘flexed on the back’ co-occurred with an EE body orientation, followed by a SE body orientation, while ‘extended on the back’ co-occurred with a NE body orientation, followed by EE, WW, and a minority of NW body orientations.

Four graves with mixed body postures and orientations constituted unique cases at Yanghai (§ 14.4). All are Type C graves found on terraces I, II and III. They suggest possible chronological overlap of different body orientations and postures, or alternatively, different identities or special status attributed to their occupants. This status was also ascribed to woman and children. Three of the four graves are two-layered shaft graves, a solution accommodating people with different beliefs or status. Status is also reflected in the relatively rich animal sacrifice (223). I suggest the possibility that these grave occupants negotiated or mediated change in burial rituals. Alternatively, these graves provide a cross-section of change in burial practice over time, or simply illustrate the existence of different but co-existing burial rituals.

Assessing single, double and multiple burial practices in § 14.5 demonstrated that with the advent of Type D graves, single burial practices dropped to a minimum, while double and multiple burials became the dominant practices. Single burial was almost exclusively applied to males, suggesting restricted access. Double burial involved mostly one man and

one woman, and may reflect social changes originating in Type B graves.

The analysis of single, double and multiple burial practices from the perspective of grave type, suggest there was discontinuity in single burial practices in Type D graves, perhaps due to the emergence of a small male elite. Continuity could be claimed on the other hand, by referring to double and multiple burial practices, which were initiated in Type B graves, but gained importance in Type D graves. However, when analysing the variability in MNI from the perspective of terrace phase, it seemed change in MNI was more easily explained by chronology than grave type.

Finally, biological variability discussed in § 14.6, suggest minor discontinuity in the Yanghai population after the mergence of niche graves. Non-metric analysis of the teeth for the period c. 2000 BCE–200 CE, was done without reference to terrace phase, grave number or grave type. It showed the Yanghai population belonged mainly to the western Eurasian complex, exhibiting some regional differences. Morphological traits of the skulls belong predominantly to the Caucasoid type, with a clear increase of Mongoloid features between c. 200 BCE and 200 CE, though not enough to assume a considerable change in population.<sup>15</sup> Stable carbon and nitrogen isotope analysis of human bone collagen demonstrated a stronger reliance on animal protein from c. 200 BCE onward.<sup>16</sup>

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<sup>15</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt. IV, 421.

<sup>16</sup>Si Yi et al. 2013.

# 15 Analysis of the animal remains

## 15.1 Introduction

This chapter analysed animal remains from Yanghai to investigate if the emergence of niche grave practices co-occurred with changes in animal sacrifice and, to a lesser degree, in subsistence practices. I successively assessed presence and type of animal bones (§ 15.2), ratio of completeness (§ 15.3), the location where horse remains were deposited (§ 15.4), and the relation between animal sacrifice and gender (§ 15.5).

Since the Report provided only detailed information on sacrificed and domesticated animals, only these were used in the analyses.<sup>1</sup> Nevertheless, wild animals were probably hunted, as suggested by depictions on artefacts of wild goat, wolf, tiger, dog, deer and boar.<sup>2</sup>

Understanding subsistence practices also requires assessing the importance of crop farming. The latter probably played a minor role at Yanghai, as suggested by the scarce evidence, including an ear of wheat and four food items made of millet. These were only found on Terrace I (in one Type A and one Type C grave) and Terrace II (only in Type C graves), but not on Terrace III. Cannabis was also identified as a crop on Terrace I, and phytochemical and genetic analyses demonstrate it was possibly used for its medicinal or psychoactive qualities.<sup>3</sup>

## 15.2 Presence and type of animal bones

Assessment of presence and type of animal bones versus grave type and terrace phase, highlighted the scope and nature of animal practice. A total of 518 graves were considered. Two horse pits (IIIM69 and IIIM70), wrongly labelled as graves in the Report, were treated as satellite pits (Chapt. 11).

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<sup>1</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt. 4–6; Tab. 5.

<sup>2</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt. 7, Sect. 3.2.

<sup>3</sup>Jiang et al. 2006; Russo et al. 2008.

Tab. 15.1 shows that on Terrace I, animal sacrifice is present in one third of Type A and B graves (32.3% resp. 28.1%) and in one fourth of Type C graves (26.8%). On Terrace II, the share of animal remains slightly increases to over a third of the Type C graves (35.9%). Furthermore, 80% or 4 out of 5 of the newly emerged Type D or niche graves have animal remains. On Terrace III, animal remains were found in more than a tenth of the Type C graves (12.5%), and in about one fifth of Type D graves (19.6%).

	Type A		Type B		Type C		Type D		Total	
<b>TERRACE I</b>										
Yes	10	32.3%	18	28.1%	33	26.8%	0	0%	61	28%
No	21	67.7%	46	71.9%	90	73.2%	0	0%	157	72%
All	31	100%	64	100%	123	100%	0	0%	218	100%
<b>TERRACE II</b>										
	Type A		Type B		Type C		Type D		Total	
Yes	0	NaN%	0	0%	78	35.9%	4	80%	82	36.8%
No	0	NaN%	1	100%	139	64.1%	1	20%	141	63.2%
All	0	NaN%	1	100%	217	100%	5	100%	223	100%
<b>TERRACE III</b>										
	Type A		Type B		Type C		Type D		Total	
Yes	0	NaN%	0	0%	3	12.5%	10	19.6%	13	16.9%
No	0	NaN%	2	100%	21	87.5%	41	80.4%	64	83.1%
All	0	NaN%	2	100%	24	100%	51	100%	77	100%

**Table 15.1** – Presence of animal remains versus grave type and terrace at Yanghai

Tab. 15.2 investigated change in animal type sacrificed on the different terraces. A total MNI of 182 animals were assessed. Terraces I and II, show a similar pattern, with 93.2% respectively 90.9% of the sacrificed animals being ovicaprids. Horse represents only 2.7% on Terrace I, and slightly increases to 9.1% on Terrace II. An abrupt change is seen on Terrace III, where ovicaprids drop to 42.9% and horses jump to 52.4%. Cattle only represents 2.7% on Terrace I and 4.8% on Terrace III. Dog is only represented on terrace I with 1.4%.

	Terrace I		Terrace II		Terrace III	
Horse	2	2.7%	8	9.1%	11	52.4%
Ovicaprid	68	93.2%	80	90.9%	9	42.9%
Cattle	2	2.7%	0	0%	1	4.8%
Dog	1	1.4%	0	0%	0	0%
Total	73	100%	88	100%	21	100%

**Table 15.2** – Ratio of animal type per terrace at Yanghai (in MNI)

These changes are more pronounced, when animal type is assessed against grave type (Tab. 15.3). Almost all animal remains found in types A, B, and C are ovicaprids (100%, 92.6%, 93%). Cattle and dog or absent or exceptions here. A small minority of 7 individuals or 5.5% in Type C graves are horse remains. Horses are the main animal type found in Type D, accounting for 14 individuals or 77.8%, while the share of ovicaprids drops to 22.2% in this grave type. This strongly suggests that Type D occupants not only favoured the sacrifice of horses over that of sheep, but also that horse burial was twice as common in Type D than in Type C graves.

	Type A		Type B		Type C		Type D	
Horse	0	0%	0	0%	7	5.5%	14	77.8%
Ovicaprid	10	100%	25	92.6%	118	92.9%	4	22.2%
Cattle	0	0%	1	3.7%	2	1.6%	0	0%
Dog	0	0%	1	3.7%	0	0%	0	0%
Total	10	100%	27	100%	127	100%	18	100%

**Table 15.3** – Ratio of animal type per grave type at Yanghai (in MNI)

In Tab. 15.4 animal type was assessed against grave type and terrace phase, to confirm that horse sacrifice was indeed more diagnostic of Type D graves.

Animal sacrifice in grave types A, B and C on terraces I and II existed almost exclusively of ovicaprids. Next to the occasional presence of dog, cattle and horse on Terrace I, horse made a more significant presence on Terrace II, where it was still rare in Type C graves (3 individuals or 3.6 %), but became the only animal type sacrificed in Type D graves (5 or 100%).



	Type A		Type B		Type C		Type D	
<b>TERRACE I</b>								
Horse	0	0%	0	0%	2	5.6%	0	0%
Ovicaprid	10	100%	25	92.6%	33	91.7%	0	0%
Cattle	0	0%	1	3.7%	1	2.8%	0	0%
Dog	0	0%	1	3.7%	0	0%	0	0%
Total	10	100%	27	100%	36	100%	0	0%
<b>TERRACE II</b>								
Horse	0	0%	0	0%	3	3.6%	5	100%
Ovicaprid	0	0%	0	0%	80	96.4%	0	0%
Cattle	0	0%	0	0%	0	0%	0	0%
Dog	0	0%	0	0%	0	0%	0	0%
Total	0	0%	0	0%	83	100%	5	100%
<b>TERRACE III</b>								
Horse	0	0%	0	0%	2	25%	9	69.2%
Ovicaprid	0	0%	0	0%	5	62.5%	4	30.8%
Cattle	0	0%	0	0%	1	12.5%	0	0%
Dog	0	0%	0	0%	0	0%	0	0%
Total	0	0%	0	0%	8	100%	13	100%

**Table 15.4** – Ratio of animal type per grave type and terrace, Yanghai

On Terrace III, horse sacrifice remained the dominant practice in Type D graves (9 individuals or 69.2%), followed by that of ovicaprids (4 or 30.8%). Sheep sacrifice in Type C graves dropped to 5 individuals or 62.5% on Terrace III, while horse sacrifice increased significantly to 25%. Despite the increase of horse burial in both grave types, the share of horse sacrifice in Type D graves nearly tripled that in Type C graves on Terrace III. This suggests that on Terrace III, niche graves were not only the dominant grave type, but also controlled access to horse sacrifice.

### 15.3 Ratio of completeness of the animal bones

When investigating patterns of continuity and discontinuity in sacrificial practices, I also assessed variability in completeness of the animal bones. Which part of which animal was deposited? Which practice was common among niche grave occupants?

Data were inputted into the database as detailed as possible, including every known bone or part of the skeleton. For the analysis and easier comparison with other sites, these were lumped into three categories (31, Fig. 3.5): 1) ‘Complete’, meaning the complete or roughly complete animal; 2) ‘Skull+’, meaning the skull occasionally accompanied with other bones; and 3) ‘Rest’, meaning all the rest without skull.

Tab. 15.5 shows that sacrificing the head was common in most ovicaprids (89.8%), and in all dog and cattle. Only in 10.2% of the ovicaprids, other bones than skulls were deposited. Furthermore, only horses were buried as a whole. Whole horse skeletons accounted for 47% of the horse remains. In 28.6% cases, only the head was sacrificed, and in another 23.8%, only part of the skeleton excluding the skull.

	Dog		Cattle		Ovicaprid		Horse	
Complete	0	0%	0	0%	0	0%	10	47.6%
Skull+	1	100%	3	100%	141	89.8%	6	28.6%
Rest	0	0%	0	0%	16	10.2%	5	23.8%
Total	1	100%	3	100%	157	100%	21	100%

**Table 15.5** – Ratio of completeness per animal type at Yanghai (in MNI).

Since only horses were deposited as a whole (Tab. 15.5), and horse sacrifice only occurred in grave types C and D (Tab. 15.4), I wanted to investigate the relation between these two grave types further. This was done by assessing completeness of horse remains versus grave type and terrace phase (Tab. 15.6).

On Terrace I, only two graves had horse remains and both belonged to Type C. A tibia was unearthed from grave IM1, and a mandible from M41.

On Terrace II, a total MNI of 8 horses were found. Of these, 6 or 75% represented complete skeletons. All 5 individuals found in Type D graves were buried in this way, while only 1 complete horse skeleton was recovered from Type C graves. The other two instances in Type C graves included a front leg from grave IIM118, and a skull from grave IIM121.

Horse	Type C		Type D		All	
<b>TERRACE I</b>						
Comp	0	0%	0	0%	0	0%
Skull+	0	0%	0	0%	0	0%
Rest	2	100%	0	0%	2	100%
Total	2	100%	0	0%	2	100%
<b>TERRACE II</b>						
Comp	1	33.3%	5	100%	6	75%
Skull+	1	33.3%	0	0%	1	12.5%
Rest	1	33.3%	0	0%	1	12.5%
Total	3	100%	5	100%	8	100%
<b>TERRACE III</b>						
Comp	0	0%	4	44.4%	4	36.4%
Skull+	2	100%	3	33.3%	5	45.5%
Rest	0	0%	2	22.2%	2	18.2%
Total	2	100%	9	100%	11	100%

**Table 15.6** – Ratio of completeness of horse remains per terrace and grave type at Yanghai.

On Terrace III, a total MNI of 11 horses were found. Of these, 4 individuals or 36.4% represented complete skeletons, all found inside Type D graves. Almost half of the horse bones on this terrace (5 individuals or 45.5 %) were buried as a skull+, including 2 individuals in shaft graves and 3 in niche graves. In two instances, a few bones without skull were deposited into niche graves, including a mandible in IIIM68, and a right front leg and vertebrae in IIIM6.

In conclusion, while horse sacrifice at Yanghai occurred only in Type C and Type D graves, it seemed that whole horse sacrifice was in all but one case reserved for niche grave occupants on terraces II and III.

## 15.4 Location of horse remains within the grave

Assessing changes in the location where animal remains were deposited, further exposed patterns of (dis)continuity in sacrificial practices. Depositing the head of ovicaprids near the feet of the deceased was very common for those enjoying animal sacrifice in grave types A, B, and C on terraces I and II (Fig. 15.1).

Horse	Type C		Type D		All	
<b>TERRACE I</b>						
Main shaft	2	100%	0	0%	2	100%
Niche	0	0%	0	0%	0	0%
Satellite pit	0	0%	0	0%	0	0%
Total	2	100%	0	0%	2	100%
<b>TERRACE II</b>						
Main shaft	2	66.7%	0	0%	2	25%
Niche	0	0%	1	20%	1	12.5%
Satellite pit	1	33.3%	4	80%	5	62.5%
Total	3	100%	5	100%	8	100%
<b>TERRACE III</b>						
Main shaft	2	100%	5	55.6%	7	63.6%
Niche	0	0%	1	11.1%	1	9.1%
Satellite pit	0	0%	3	33.3%	3	27.3%
Total	2	100%	9	100%	11	100%

**Table 15.7** – Location of horse remains per terrace and grave type at Yanghai.

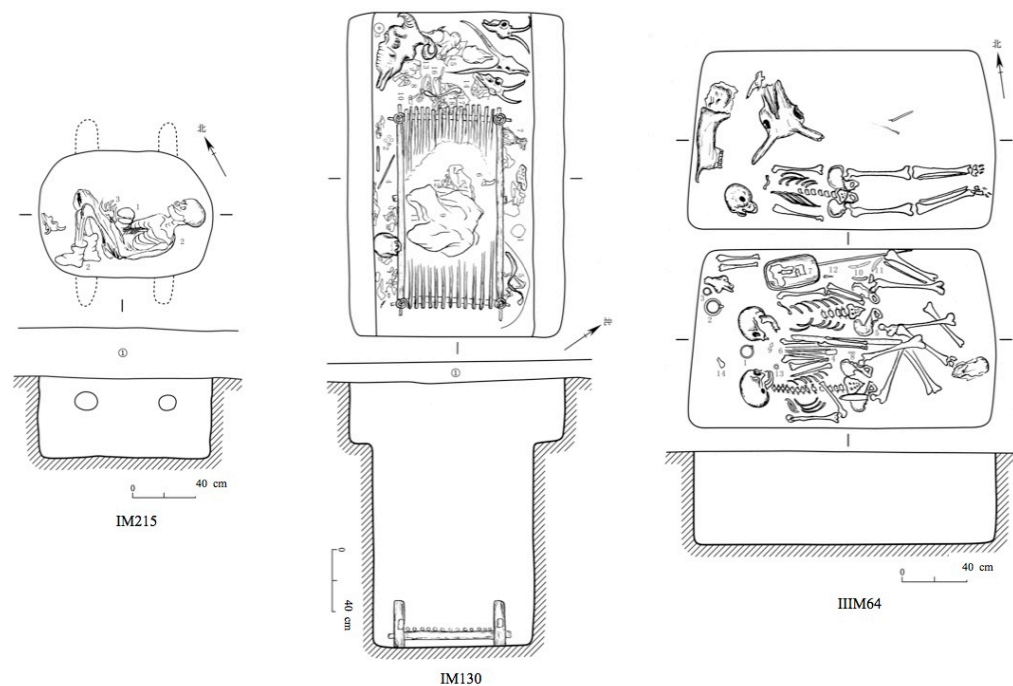
The introduction of horse sacrifice did not only lead to a sharp drop in the number of sheep sacrifice (see 219, Tab. 15.4), but also to a change in the location where animal remains were deposited.

Tab. 15.7 shows that on Terrace I, the few horse bones (MNI=2) were all located in the main shaft of Type C graves. On terraces II and III, horse remains were deposited in the main shaft, niche, or satellite pits of Type C and D graves. On Terrace II, deposition in satellite pits was popular in Type D graves (MNI=5), but rare in Type C graves (MNI=1). Deposition in the shaft only occurred twice (MNI=2) in Type C. On Terrace III, deposition

in the main shaft (MNI=5) was more popular than in satellite pits (MNI=3) in Type D graves, but deposition in the main shaft was the only solution in Type C graves (MNI=1).

## 15.5 Animal sacrifice and gender

Variability in animal remains was also assessed with respect to gender. Deposition of one or occasionally two sheep/goat skulls near the feet was common in one third of the Type A, B, and C graves on terraces I and II, and occurred in association with both men and women (Fig. 15.1, IM215).

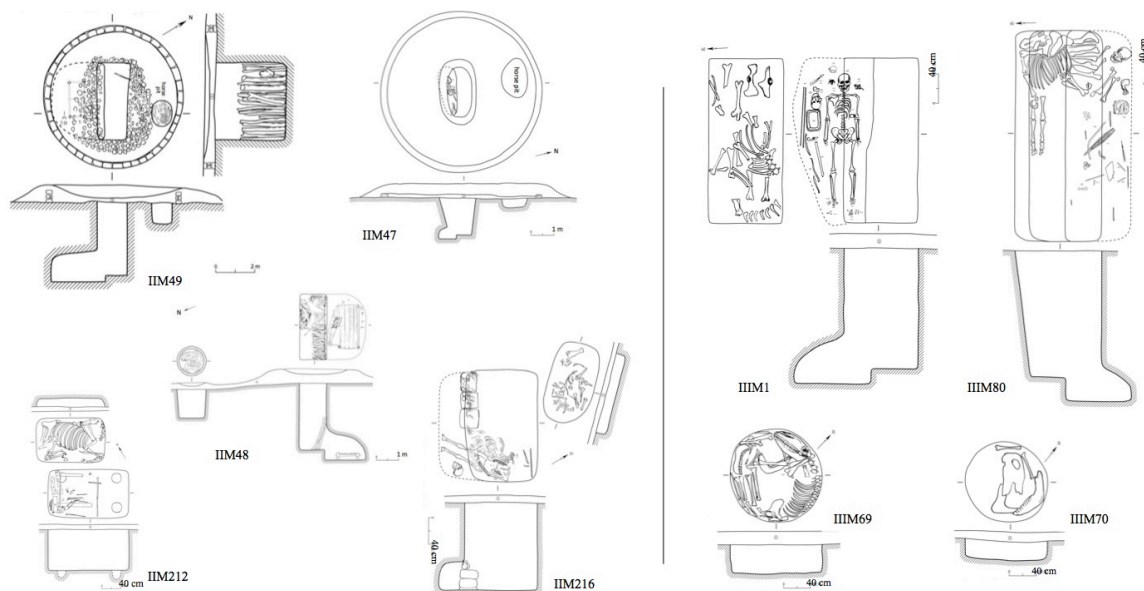


**Figure 15.1** – Graves IM215, IM130 and IIM64. Plan and section drawings (After Tulufan Diq Wuwenju et al. forthcoming, Figs. 474, 475, 477).

Two graves, IM130 and IIM64, showed a richer animal assemblage (Fig. 15.1). The first is a Type B grave on Terrace I with 6 individuals: 1 cattle skull and 5 goat skulls, buried with a 6-7 years old child. Grave goods include cowries, arrow shafts, a leather bow string, a cow horn, a dairy bag, a leather bridle, leather and woollen clothing, woollen belts, rug, a painted drinking cup and vessel.

The second example is a Type C grave on Terrace III with 5 skulls from 1 horse, 1 cattle, 1 goat and 2 sheep. The top layer holds a woman in extended posture on the back with WW orientation and a horse and ox skull near the head. In the bottom layer lies another woman flexed on the side next to a man flexed on the back. Both show a WW body orientation and are buried with 2 sheep and 1 goat skull, deposited near the feet, head and shoulder.

The rich and diverse animal assemblages in both graves refer to the special status of their occupants. That young children and women were granted elaborate animal sacrifice, suggests a gender and age-related aspect in their identity or status. The mix of different body postures and WW body orientation in the latter grave confirm their special status or different identity (see § 14.4).



**Figure 15.2** – Different solutions for horse deposition, Yanghai Terrace II (L) and III (R). (After Tulufan Diqu Wenwuju et al. forthcoming, Figs. 474, 475, 477, 769, 776, 792, 939, 919, 920).

With the introduction of horse sacrifice, the number of individuals, which had access to animal sacrifice dropped significantly, especially on Terrace III (216, Tab. 15.2).

Tab. 15.8 provides a detailed picture of change in horse sacrifice. On Terrace I, 1 tibia and 1 mandible were deposited into the shaft of Type C graves. Whole horse sacrifice only figured on terraces II and III. Fig. 15.2 shows different solutions for whole horse burial, including deposition into a shaft or satellite pit.

On Terrace II, out of 7 graves with horse remains, 4 are niche graves and 3 shaft graves. Out of 8 human individuals associated with horse remains, 6 are male, 1 is female, and 1 is unknown. Out of a total MNI of 8 horses associated with them, 6 are complete, of which 4 are associated with males, 1 with a female, and 1 with 0 individuals (IIM212). Out of 6 complete horses, 5 are associated with niche graves, and 1 with a shaft grave. 1 horse skull is associated with two males and one individual of unknown sex. One front leg bone(s) is associated with 1 male. Furthermore, 5/6 complete horses were deposited in ancillary pits and 1/6 inside a niche. Individual horse bones were directly deposited into the shaft.

Grave No.	Grave Type	Sex grave occupants	Completeness horse remains	Location horse remains
<b>TERRACE I</b>				
IM1	Type C	F?	Partial	Shaft
IM41	Type C	MF	Partial	Shaft
Total	2	4	2	
<b>TERRACE II</b>				
IIM118	Type C	M	Partial	Shaft
IIM121	Type C	MM?	Skull+	Shaft
IIM212	Type C	0	Complete	Ancillary Pit
IIM47	Type D	M	Complete	Ancillary Pit
IIM48	Type D	M	Complete	Niche
			Complete	Ancillary Pit
IIM49	Type D	M	Complete	Ancillary Pit
IIM216	Type D	F	Complete	Ancillary Pit
Total	7	8	8	
<b>TERRACE III</b>				
IIM61	Type C	M	Skull+	Shaft
IIM64	Type C	MFF	Skull+	Shaft
IIM1	Type D	MF?	Complete	Shaft
IIM6	Type D	M	Partial	Shaft
IIM10	Type D	MM	Skull+	Shaft
IIM48	Type D	M	Skull+	Shaft
IIM68	Type D	MF	Partial	Niche
IIM69	Type D	NA	Complete	Ancillary Pit
			Complete	Ancillary Pit
IIM70	Type D	NA	Skull+	Ancillary Pit
IIM80	Type D	M	Complete	Shaft
Total	10	14	11	

**Table 15.8** – Completeness and location horse remains versus grave type and sex of grave occupants, Yanghai (totals of human and animal remains in MNI counts).

On Terrace III, out of 10 graves associated with horse remains, 8 are niche graves and 2 shaft graves. Out of 14 humans associated with horse remains, 9 are male, 4 are female, and 1 is unknown. Out of a total MNI of 11 horses, only 4 are complete, while the rest concern bones including the skull (5) or excluding it (2). Horse bones are mostly deposited into the shaft (7), sometimes into ancillary pits (3), and occasionally inside the niche (1).

Out of 19 graves associated with horse sacrifice at Yanghai, 8 concerned single burials of males, 1 concerned a single burial of a female, while the rest involved individuals of both male and female (4), or unknown (combinations of) sex (5). Out 10 whole horses, at least 5 were buried in association with single males and 1 with a single female.

In conclusion, while sheep/goat sacrifice was accessible to both men and women in Type A, B C graves on terraces I and II, horse sacrifice and especially of whole horses, was almost exclusively reserved for Type D occupants. In the individuals buried with horse remains, there is a bias towards males, especially those buried singly. Burying horses into satellite pits was more common on Terrace II, while burial into the (entry) shaft was more common on Terrace III.

## 15.6 Conclusion

Analysis of animal remains from Yanghai, led to the following observations about change in animal sacrifice and subsistence practices. About one third of the occupants in Type A, B and C graves on terraces I and II enjoyed animal sacrifice (217, Tab. 15.1). These almost exclusively took the form of goat/sheep heads deposited near the feet of the deceased (223, Fig. 15.1, IM251).

Abrupt changes in animal sacrifice took place with the transition from Terrace II to Terrace III. Animal sacrifice as a whole dropped on Terrace III, where only 16.9% of the graves enjoyed animal sacrifice, in comparison with Terrace II, where 36.8% enjoyed animal sacrifice (217, Tab. 15.1). In Type C graves, the share of ovicaprids dropped with a third (96.4% > 62.5%), while horses gained importance (3.6% < 25%). Type D graves held exclusively horse remains on Terrace II (100%), retaining a share of 69.2% on Terrace III, while ovicaprids rose from 0% to 30.8% (219, Tab. 15.4).

While no more than a horse mandible and a tibia were found in two graves of Terrace I, horse sacrifice gained significance on terraces II and III (218, Tab. 15.2). Horse remains only occurred in Type C and D graves. They became the majority practice in Type D, while sheep/goat sacrifice remained the majority practice in Type C (219, Tab. 15.4). Burying



whole horses became particularly popular in Type D graves. 5 out of 6 burials of complete horses on Terrace II, and all 4 complete horse skeletons on Terrace III were excavated from Type D graves (221, Tab. 15.6).

With the practice of burying complete horses, satellite pits became fashionable, as suggested by 7 out of 10 animals being deposited in this way. Such practices were enjoyed by a niche grave elite thus highlighting restricted access to animal resources. Only one shaft grave, located on Terrace II, was accompanied of a satellite pit in which a whole horse was buried. The apparent shift in preference from burying whole horses in satellite pits on Terrace II to burying them in the (entry) shaft on Terrace III could be interpreted as a difference in chronology or status (222, Tab. 15.7).

Investigating animal remains from a cemetery allows understanding change in animal sacrifice, but does not provide a full picture of change in subsistence practices. Although the prominence of sheep/goat herding and significance of horses from the late Terrace Phase II onward was observed, the unexcavated settlement could yield additional information. Besides, objects such as residues and tools related to dairy products, walking sticks related to herding activities, and artefacts made of animal bone, hides, intestines, and woollen textiles provide additional information on the pastoralist lifestyle of the Yanghai community. The significance of hunting was already acknowledged (216), though the role of mounted hunting could be further investigated.

The value of cattle should not be underestimated either (Tab. 15.1). As I argued earlier, *the underrepresentation of cattle (MNI = 3) probably does not reflect its actual contribution in the livestock of the Yanghai people. On the contrary, the abundant use of leather, cow sinew, cow horn and other material in the production of many grave goods shows its economic importance.*<sup>4</sup>

In conclusion, animal sacrifice showed little change in grave types A, B and to a large degree also C, and existed almost exclusively of sheep/goat sacrifice, accessible to both men and women. With the emergence of Type D graves on Terrace II, there was a significant discontinuity in type, location, completeness, and number of animals sacrificed. While Type C occupants often stuck to more modest or earlier practices of burying sheep and goat, even on Terrace III, whole horse sacrifice now served to enhance the status of Type D or niche grave occupants, with a bias towards males buried singly. (Whole) horse sacrifice became an integral part of the identity of the niche grave elite at Yanghai, and this was probably related to the increasing importance of horse riding (see 273).

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<sup>4</sup>Timperman 2015, 7–8.

# 16 Analysis of the grave goods

## 16.1 Introduction

Grave goods were analysed to understand (dis)continuity versus grave type and terrace phase at Yanghai. Terraces I, II and III yielded a total of 3048 grave goods, which were all entered into the database. Out of a total of 518 graves, 488 graves have grave goods and 30 don't have any at all, mostly due to looting.

For each object, a set of attributes was assigned, including material, form, size, techniques, and decoration. The amount of data and the way they were collected allowed for a wide range of research possibilities. Because of the scope of this dissertation, a limited number of analyses were carried out related to pottery (§ 16.2), metal objects (§ 16.3), and horse tack (§ 16.4).

## 16.2 Pottery

Pottery was present in 383 of all excavated graves at Yanghai, numbering 887 items in total.<sup>1</sup> The tables below show the absolute numbers of pottery vessels and their means per grave, versus terrace (Tab. 16.1) respectively grave type (Tab. 16.2).

It was observed that an increase took place from a mean of 2.1 pottery items per grave on Terrace I, to 2.2 on Terrace II, and 3.2 on Terrace III. A similar increase was noticed from 1.3 pottery vessels per grave in Type A, to 2.3 in Type B, 2.2 in Type C and 3.3 in Type D. Since both tables give the mean calculated per grave and not per human individual, and since many graves were looted, these figures may be biased. That the mean increased in Terrace III and particularly Type D, could indeed also be related to the popularity of double and multiple burials here. Despite this bias, we can nonetheless conclude that pottery remained important after the emergence of niche graves.

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<sup>1</sup>These figures represent 'minimum number of pottery items'.

	Terrace I		Terrace II		Terrace III	
Pottery	306	2.1	364	2.2	217	3.2

**Table 16.1** – Number of pottery items expressed in absolute numbers and mean per grave and per Terrace at Yanghai.

	Type A		Type B		Type C		Type D		Type E	
Pottery	17	1.3	110	2.3	595	2.2	161	3.3	4	4

**Table 16.2** – Number of pottery items expressed in absolute numbers and mean per grave type at Yanghai.

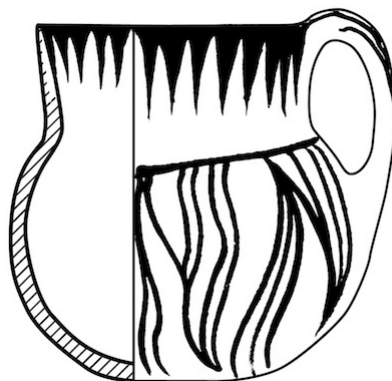
The next two tables show the share of painted pottery per terrace (Tab. 16.3) and per grave type (Tab. 16.4). Out of a total of 887 pieces of pottery, 328 are painted. Tab. 16.3 shows that the share of painted versus unpainted pottery was reversed with the shift from Terrace I (62.4%/37.6%) to Terrace II (37.4%/62.6%). On Terrace III, painted pottery was abandoned and is only represented by one piece. Alternatively, Tab. 16.4 shows that this inversion takes place gradually from Type A (64.7%/35.3%) over Type B (59.1%/40.9%) to Type C (42.4%/57.6%), and culminates in Type D and E graves where not a single piece of painted pottery was found. The only grave with painted pottery from Terrace III, was unearthed from a shaft grave. It is a jug decorated with saw-tooth pattern on the rim, and a pattern of inverted wavy triangles on the body (Fig. 16.1).

Pottery	Terrace I		Terrace II		Terrace III	
Painted	191	62.4%	136	37.4%	1	0.5%
Unpainted	115	37.6%	228	62.6%	216	99.5%
Total	306	100%	364	100%	217	100%

**Table 16.3** – Painted pottery vs. terrace, Yanghai

Pottery	Type A		Type B		Type C		Type D		Type E	
Painted	11	64.7%	65	59.1%	252	42.4%	0	0%	0	0%
Unpainted	6	35.3%	45	40.9%	343	57.6%	161	100%	4	100%
Total	17	100%	110	100%	595	100%	161	100%	4	100%

**Table 16.4** – Painted pottery vs. grave type, Yanghai



**Figure 16.1** – Painted pottery jug IIM53-02, Yanghai (After Tulufan Diqu Wenwuju et al., (forthcoming), Fig. 893-02.)

The virtual disappearance of painted pottery on Terrace III and its entire absence in grave Type D, is a clear argument for discontinuity. At Cemetery III only one grave, belonging to Type C, contained a painted pottery item (Fig. 16.1). Despite the sudden lack of interest in painted pottery on Terrace III, this did not imply a lack of interest in pottery altogether. On the contrary, pottery was still very common in this phase (Tab. 16.1).

### 16.3 Metal objects

Yanghai counts a total of 144 metal finds. Tab. 16.5 shows the distribution of different metal types and their combinations on terraces I, II and III at Yanghai.

	Terrace I		Terrace II		Terrace III	
Bronze	60	90.9%	13	61.9%	3	11.1%
Iron	1	1.5%	7	33.3%	17	63%
Silver	1	1.5%	0	0%	0	0%
Gold	2	3%	0	0%	5	18.5%
Bronze + Gold	0	0%	1	4.8%	1	3.7%
Gilt Bronze	0	0%	0	0%	0	0%
Bronze + Iron	1	1.5%	0	0%	0	0%
Iron + Gold	0	0%	0	0%	1	3.7%
Undefined	1	1.5%	0	0%	0	0%
Total	66	100%	21	100%	27	100%

**Table 16.5** – Metal types per Terrace at Yanghai (in absolute item numbers and %

On Terrace I, 60 items or 90.9% of all metal excavated items were made of bronze, next to occasional finds of iron (1), gold (1) and silver (1). On Terrace II, bronze items dropped to 13 or 61.9% (plus 1 gilded bronze item), while the share of iron rose to 7 objects or 33.3%. On Terrace III, 3 bronze items accounted for 11.1%, while iron rose to 17 items or 63%. Besides, there was 1 item of gilded bronze, and 1 composite of bronze and iron. Gold took the second place with 5 items or 18.5%.

The number of gold and silver items has no doubt been affected by serious looting. Nevertheless, it can be concluded that bronze dropped significantly in importance from Terrace Phase I over II to III, while the opposite was true for iron. When Terrace III was opened at c. 200 BCE, iron became the dominant metal followed by gold.

The distribution of different metal types in relation to grave type provides a different perspective (Tab. 16.6). Bronze is almost the sole metal used in grave types A and B (93.8% resp. 93.3%), dropping to two thirds in Type C (62.5%), and one tenth in Type D (12.5%).

Iron appears for the first time in Type B in the south of Terrace I. This composite item made of bronze and iron can be considered the oldest iron object at Yanghai, dated c. 1000–700 BCE. Iron objects increase to 25% of all metal finds in Type C, and take the majority share in Type D (62.5%). To conclude, the differences in metal finds are more pronounced from the perspective of grave types than from that of terrace phases.

	Type A		Type B		Type C		Type D		Type E	
Bronze	30	93.8%	14	93.3%	30	62.5%	2	12.5%	0	0%
Iron	0	0%	0	0%	12	25%	10	62.5%	3	100%
Silver	0	0%	0	0%	1	2.1%	0	0%	0	0%
Gold	2	6.2%	0	0%	3	6.2%	2	12.5%	0	0%
Bronze + Gold	0	0%	0	0%	1	2.1%	1	6.2%	0	0%
Gilt Bronze	0	0%	0	0%	0	0%	0	0%	0	0%
Bronze + Iron	0	0%	1	6.7%	0	0%	0	0%	0	0%
Iron + Gold	0	0%	0	0%	0	0%	1	6.2%	0	0%
Undefined	0	0%	0	0%	1	2.1%	0	0%	0	0%
Total	32	100%	15	100%	48	100%	16	100%	3	100%

**Table 16.6** – Share of different metal type items per grave type at Yanghai

	Type B		Type C		Type D		Type E	
Bronze	0	0%	1	11.1%	2	13.3%	0	0%
Iron	0	0%	5	55.6%	9	60%	3	100%
Silver	0	0%	0	0%	0	0%	0	0%
Gold	0	0%	3	33.3%	2	13.3%	0	0%
Bronze+ Gold	0	0%	0	0%	1	6.7%	0	0%
Gilt +Bronze	0	0%	0	0%	0	0%	0	0%
Bronze + Iron	0	0%	0	0%	0	0%	0	0%
Iron + Gold	0	0%	0	0%	1	6.7%	0	0%
Undefined	0	0%	1	11.1%	0	0%	0	0%
Total	0	0%	9	100%	15	100%	3	100%

**Table 16.7** – Share of different metal type items per grave type at Terrace III, Yanghai

Tab. 16.7 shows the ratios of different metal types found per grave type on Terrace III only. A total of 27 metal items was found on Terrace III, distributed over types C, D and E, while metal finds in Type B were absent.

The results show little difference in the ratios of bronze, iron and gold between Type C (1/5/3) and D graves (2/9/2). The latter also had 1 gilded bronze, and 1 iron/gold item. No differential access to specific metal types was observable between Type C and D occupants.

## 16.4 Horse tack

The first settlers of Yanghai knew how to ride horse, as evidenced by bridle sets, cheekpieces, horse bits, stock whips, and a saddle blanket in Terrace Phase I. Such equipment was continuously improved and adapted for different uses, as illustrated by the padded saddle and leather horse harness from Terrace Phase II (241).

Out of 3048 grave goods unearthed at Yanghai, 144 are horse tack, including horse bits, cheekpieces, mouthpieces, bridle sets, saddles and whips. When assessing horse tack, these variables were not weighed. In other words, a set of cheekpieces, a bridle set (with all its components), or a saddle, were all counted as ‘1’ and considered equally important. This may result in a certain bias in the analysis.

Tab. 16.8 demonstrates that burying horse tack was most popular on Terrace I, where it was present in 51 graves or 25.1% of all the graves. This dropped to 11.8% of the graves on Terrace II, and 6.8% of the graves on Terrace III.

Horse tack	Terrace I		Terrace II		Terrace III		Total	
Yes	51	25.1%	25	11.8%	5	6.8%	81	16.6%
No	152	74.9%	186	88.2%	69	93.2%	407	83.4%
Total	203	100%	211	100%	74	100%	488	100%

**Table 16.8** – Presence of horse tack vs. terrace phase, Yanghai.

Assessing variability in the presence of horse tack in relation to grave type, further allowed to make some significant observations (Tab. 16.9). Horse tack was found in no less than 23 or 38.3% of Type B graves. Types A and C had much more modest shares (14.3% resp. 14.2 %). In Type D, only 5 or 9.1% of the graves featured horse tack.

Horse tack	Type A		Type B		Type C		Type D		Type E		Total	
Yes	4	14.3%	23	38.3%	49	14.2%	5	9.1%	0	0%	81	16.6%
No	24	85.7%	37	61.7%	295	85.8%	50	90.9%	1	100%	407	83.4%
Total	28	100%	60	100%	344	100%	55	100%	1	100%	488	100%

**Table 16.9** – Presence of horse tack per grave type, Yanghai.

I further wanted to investigate whether occupants of Type C and D graves on Terrace II took a different interest in the burial of horse tack, in comparison with those on Terrace III (Tab. 16.10).

Horse tack	Type C		Type D	
TERRACE II				
Present	25	12.2%	0	0%
Absent	180	87.8%	5	100%
Total	205	100%	5	100%
TERRACE III				
Present	0	0%	5	10%
Absent	22	100%	45	90%
Total	22	100%	50	100%

**Table 16.10** – Horse tack per grave type at terraces II and III, Yanghai

On Terrace II, horse tack is absent in Type D graves, and is further only present in

12.2% of Type C graves. On Terrace III, horse tack is absent in Type C graves and present in only 10% of the Type D graves. Burying horse tack, it seems, was not important in the burial rituals of the Type C and D population.

In conclusion, the practice of burying horse tack was most popular with Type B occupants on Terrace I. This does not imply that they involved more in horse riding than the occupants of other grave types. The drop in horse tack in Type D is somewhat at odds with the presumption that the emergence of this grave type was the result of immigrating pastoralists and even pastoralist elites. It could also be that depositing horse tack into graves rather than horse riding was considered of less significance for the occupants of types C and D. Finally, it is noteworthy that this analysis revealed a significant difference in burial practice between Type A and B graves, which were for the other grave goods rather insignificant. It shows the potential of this way of data mining.

## 16.5 Conclusion

This chapter analysed grave goods to investigate patterns of (dis)continuity in burial practice between different grave types, especially Type C and D graves.

The analysis in § 16.2 showed that pottery remained important throughout the three terrace phases at Yanghai, though slightly less so in Type A, and even more so in Type D (229, Tabs. 16.2 and 16.1). The slight bias could be due to the fact that single burials prevailed in the former and double and multiple burials in the latter (§ 14.5).

That pottery was common – even though in modest numbers – throughout the three terrace phases, highlights the importance of sedentism, even after the appearance of niche graves.

The disappearance of painted pottery on Terrace III was a change affecting both Type C and D graves (229–229, Tabs. 16.4 and 16.3). However, while painted pottery was absent altogether in Type D, it was present in one single shaft grave of Type C on Terrace III in the form of a single-handled jug with inverted wavy triangles (Fig. 16.1). This type was common on Terrace II and similar to samples found in Chaiwopu and Balikun (106, Fig. 8.19).

Parallel to the disappearance of painted pottery, there was a growing importance of iron objects (§ 16.3). With the shift in occupation from Terrace I, over II to III, the share of iron items increased at the expense of bronze. While the metal assemblage existed almost exclusively of bronze at the beginning, by the time Terrace III was in use, iron made up over



half of the assemblage. In this development, no differential access to specific metal types was observed between shaft graves and niche graves occupants (§ 16.3).

Finally, the analysis in § 16.4 showed that depositing horse tack was most popular in Type B graves (38.3%), while it was a minority practice in grave types A, C and D. In general, this practice which was seen in one fourth of the graves on Terrace I, decreased to a tenth of the graves on terraces II and even had a much smaller share on Terrace III.

# 17 Discussion of chronological evidence

## 17.1 Introduction

Both grave typology (§ 13.2) and horizontal stratigraphy of the cemetery (§ 13.3) – in combination with the raw radiocarbon dates – broadly indicated that grave types A–B–C–D–E and terraces I, II, and III represented chronological sequences and could be used as preliminary chronological framework to investigate mortuary variability. This chronology was tested and complemented through the analyses of different variables, related to grave architecture, human remains, animal remains, and graves goods (Chapts. 13–16).

This chapter discusses the relative chronology by assessing existing typological evidence against the analyses of internal and external data (§ 17.2). Thereafter, this discussion is reviewed against the available radiocarbon data (§ 17.3).

## 17.2 Relative chronology

Four phases were distinguished for the Yanghai graves in the Report.<sup>1</sup> The typo-chronological scheme presented in the latter (see Fig. 17.1) has been commented and complemented here based on the analyses in Chapts. 13–16 and external data.

Phase I (c. 1200–1000 BCE) in the Report is represented by Type A graves. There is little pottery and even less painted pottery. Bronze is slightly more common and, of these, tubular shaft-hole axes and curved knives with loop handles only occur in Type A. Both are characteristic of the northern steppes and dated c. 12<sup>th</sup>–11<sup>th</sup> BCE, and thus Phase I was dated accordingly (Fig. 17.1, only the knife, not the axe is shown here).<sup>2</sup>

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<sup>1</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt.7.

<sup>2</sup>Tulufan Diqu Wenwuju et al. forthcoming, Sect. 7.1, 1.

	GRAVE TYPE	SINGLE HANDLED JUG	SINGLE HANDLE POTTERY CUP			SINGLE HANDLED POTTERY JAR	POTTERY BASIN	POTTERY POT	TRAY WITH STEM FOOT	WOODEN CONTAINER	WOODEN TRAY	WOODEN BOWL	WOODEN SPINDLE WHORL	WOODEN FIRE MAKING BOARD
		TYPE A	TYPE A (vertical handle)	TYPE B (horizontal handle)	TYPE C (standing handle)									
PHASE I														
	TYPE A (M21)	Ⅰ式(M181)	Ⅰ式(M138-4)				Ⅰ式(M138-5)	Ⅰ式(M66-1)		Ⅰ式(M181-1)	Ⅰ式(M201-1)	Ⅰ式(M211-1)	Ⅰ式(M181-19)	Ⅰ式(M113-20)
PHASE II														
	TYPE B (M90)	TYPE C (M32)	Ⅰ式(M5-10)	Ⅰ式(M148-16)	Ⅰ式(M56-1)	Ⅰ式(M136-4)	Ⅰ式(M20-5)	Ⅰ式(M62-7)	Ⅰ式(M86-3)	Ⅰ式(M8-1)	Ⅱ式(M23-8)	Ⅰ式(M94-1)	Ⅰ式(M25-5)	Ⅰ式(M90-3)
PHASE III EARLY														
	TYPE C (M14)		Ⅰ式(M74-1)	Ⅰ式(M106-12)	Ⅰ式(M186-5)	Ⅰ式(M201-1)	Ⅰ式(M195-1)	Ⅰ式(M187-5)	Ⅰ式(M154-3)	Ⅰ式(M169-2)	Ⅱ式(M80-8)	Ⅱ式(M181-8)	Ⅱ式(M81-2)	Ⅱ式(M198-3)
PHASE III LATE														
	TYPE C (M10)		Ⅰ式(M53-2)	Ⅰ式(M159-4)	Ⅰ式(M178-3)	Ⅰ式(M12-2)	Ⅰ式(M25-4)	Ⅰ式(M172-1)	Ⅰ式(M202-1)	Ⅰ式(M154-3)	Ⅲ式(M73-4)	Ⅱ式(M201-1)	Ⅱ式(M162-2)	Ⅲ式(M121-2)
PHASE IV														
	TYPE D (M39)	TYPE C (M38)	Ⅰ式(M9-2)	Ⅰ式(M30-7)		Ⅰ式(M23-1)	Ⅰ式(M46-2)	Ⅰ式(M45-1)	Ⅰ式(M47-5)	Ⅰ式(M203-3)	Ⅱ式(M49-2)	Ⅱ式(M43-1)	Ⅰ式(M65-1)	Ⅰ式(M113-20)

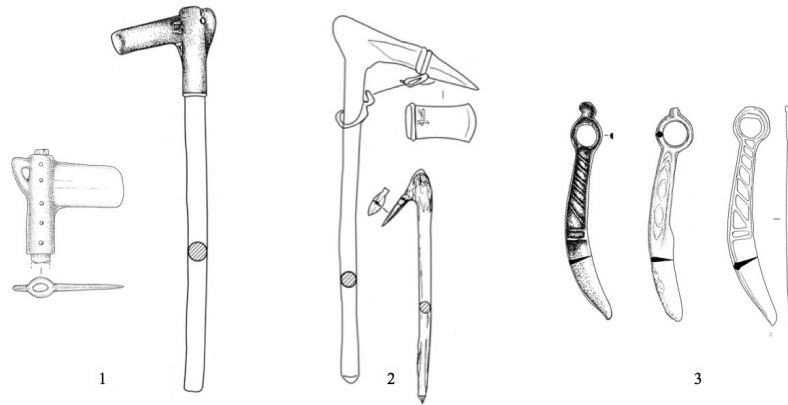
  

WOODEN COMB		HARP (konghou)	BRONZE KNIFE	HORSE BIT	CHEEK-PIECE	ARROW-HEAD	WOODEN ARROW-HEAD	BOW	WOODEN REINFORCEMENT BOARD	LEATHER BOW AND ARROW-CASE	LEATHER ARM GUARD	LEATHER BOOTS	HEADRESS ORNAMENT		TEXTILE PATTERNS	DATE
TYPE A	TYPE B												TYPE A (men)	TYPE B (women)		
																MIDDLE BRONZE AGE 13th–11th c. BCE
																LATE BRONZE AGE 10th–8th c. BCE
																EARLY IRON AGE 7th–6th c. BCE
																EARLY IRON AGE 5th–3rd c. BCE
																2nd c. BCE – 2nd c. CE

Figure 17.1 – Typo-chronological scheme Yanghai, commented in the text (Translated from Tulufan Diqu Wenwuju et al. forthcoming, Tab. 4).

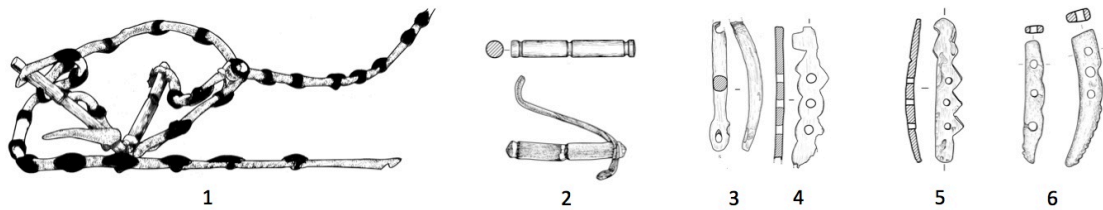
Although not mentioned in the Report, ‘northern steppe influence’ probably refers to the Karasuk culture of South Siberia. I agree the curved loop handled knives and tubular socket axes (Fig. 17.2, 1 and 3) are known from this culture, attributed to Chernykh’s Central Asian Metallurgical Province, but its date stretches from c. 1200–800 BCE and thus Phase I in Fig. 17.1 could be extended by 200 years.<sup>3</sup> The origins of socketed celts – also exclusively found in Type A graves – are unclear (Fig. 17.2, 2).

<sup>3</sup>Chernykh 1992, 270–271.



**Figure 17.2** – 1) Bronze tubular shaft-hole axes; 2) celts; and 3) knives, Yanghai, Turfan Basin (after Tulufan Diqu Wenwuju et al. forthcoming, Figs. 44, 64, 267, 39).

The fact that 88% of individuals with known body posture in Type A graves were buried ‘flexed on the side’ – the oldest body posture at Yanghai – supports this grave type first emerged (198, Tab. 14.3). Type A was further characterised by an EE and SE body orientation (202, Tab. 14.5). Burying the head of sheep/goat was common (Chapt. 15). In the latter two variables, there were no differences with grave types B and C on terraces I and II.



**Figure 17.3** – 1) Bridle with wooden cheekpiece; 2) wooden cheekpieces; 3) horn horse bit; 4–5) horn cheekpieces, Yanghai Terrace I (after Tulufan Diqu Wenwuju et al. forthcoming, Figs. 370.7 and 8; 56.5 and 7; 183.3; 386.14 and 15).

The typo-chronological scheme suggests wooden bar-shaped cheekpieces and horn horse bits first occurred in Type A during Phase I (Fig. 17.1). Similar wooden cheekpieces occur in fact in both Type A and C graves (Fig. 17.3, 1 and 2). The horn horse bit depicted in the typological scheme (Fig. 17.1, Phase I) was found together with a horn cheekpiece in a Type C grave (Fig. 17.3, 3 and 4). The latter features three perforations and is similar to cheekpieces from a Type C respectively B grave on Terrace I (Id., 5 and 6). Of all horse gear shown in Fig. 17.3, no. 1 occurred with flexed burial on the side, nos. 2 and 6 with flexed burial on the back, and nos. 3–5 with unknown body postures.

Put differently, bridles with wooden bar-shaped cheekpieces occurred in Type A associated with flexed posture on the side and Karasuk-type objects, but also in Type B graves

associated with flexed posture on the back on Terrace I. However, bone horse bits do not occur in Type A as erroneously suggested in Fig. 17.1, but only in Type C in combination with horn cheekpieces, while horn cheekpieces also figure in Type B.

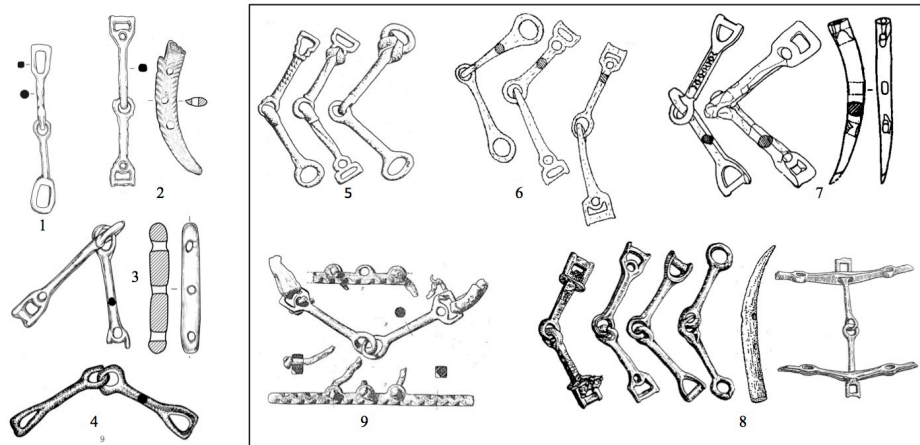


**Figure 17.4** – Individual from grave IM21, Yanghai (After Lü and Zhang 2009, 3, Fig. 2).

Grave IM21 is representative of Type A with flexed burial posture on the side, Karasuk type objects, a bridle with wooden bar-shaped cheekpieces, stockwhip, and trousers (see also § 17.3) representing the first horse-riding settlers of Yanghai (Fig. 17.4).

Phase II (c. 1000–700 BCE) in the Report is represented by Type B and C graves. Long bone cheek-pieces with three equally spaced apertures, with one end often sculpted in a horse or other animal head, are common (Figs. 17.3, 4–6). They are seen as early Scythian artefacts dated c. 10<sup>th</sup>–8<sup>th</sup> c. BCE. Bronze horse bits with double stirrup-shaped apertures, characteristic of Central Asia and dated c. 8<sup>th</sup> c. BCE, are also present.<sup>4</sup> Painted pottery was common and jars with long flat handles with elongated inverted triangles, and long-necked belly jars with vertical line decoration are characteristic of this phase (Fig. 17.1, Phase II).

<sup>4</sup>Tulufan Diqu Wenwuju et al. forthcoming, Sect. 7.1, 1.



**Figure 17.5** – Bronze horse bits and bone cheekpieces. 1–4. Yanghai (after Tulufan Diqu Wenwuju et al. forthcoming, Figs. 13.7, 291.14 and 6, 334.9, 415.4); 5. Arzhan (after Parzinger 2011, Fig. 199.13–15); 6. Chawuhugou (Wang Mingzhe 1999, 140, Fig. 98.6–9); 7. Qunbake Luntai I (after Zhongguo Shehui Kexueyuan Yanjiusuo Xinjiang Gongzuo dui et al. 1991, 693, Fig. 14.3; 694, Fig. 15.4); 8. Early Tashmola culture (after Parzinger 2011, 651, Fig. 212.3–8); 9. Eastern Pamirs (after Bernshtam 1952, 298, Figs. 128.7 and 8).

Bronze horse bits with double stirrup-shaped apertures are indeed similar to the earliest Scythian finds from Arzhan in Tuva dated c. 8<sup>th</sup> c. BCE.<sup>5</sup> They also occur – sometimes in combination with bone or horn cheek-pieces with three apertures – in the early Tashmola culture of central Kazakhstan, the eastern Pamirs, at Qunbake Luntai I in the northern Tarim Basin, and at Chawuhugou IV in the central Tianshan (Fig. 17.5, 2, 3, 5–9).<sup>6</sup> At Yanghai, they were found in one Type B grave on Terrace I and one Type C grave on Terrace II (Fig. 17.5, 3, 2), despite Fig. 17.1 giving the impression that such horse bits only occurred in the early Phase III and not Phase II.

Analysis in § 16.4 showed that Type B graves were characterised by a sudden increase of horse tack including horse bits, cheekpieces, mouthpieces, bridle sets, saddles and whips (233, Tab. 16.9), and the oldest trousers in the cemetery were found here too (250, Tab. 17.2). This suggests not only an increasing importance of horseback riding and mobility enhanced by the Type B population, but also that depositing horse tack into the grave was a popular ritual within this group, distinguishing them from occupants of other grave types. It is further noteworthy that the earliest (composite) iron was found in Type B (231, Tab. 16.6), and so is the increasing importance of ‘flexed on the back’ postures – next to ‘flexed on the side’ – here, the former eventually becoming the dominant posture in Type C (198, Tab. 14.3).

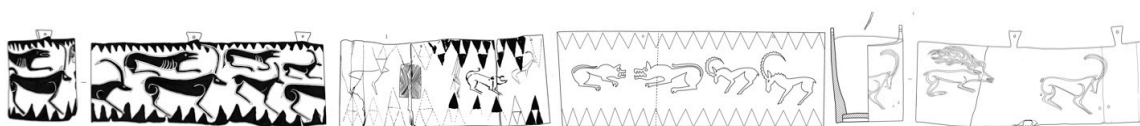
<sup>5</sup>Marsadalov 1996.

<sup>6</sup>Parzinger 2011 [2006], 610; 651; Bernshtam 1952, 298; Zhongguo Shehui Kexueyuan Yanjiusuo Xinjiang Gongzuodui et al. 1991, 693; Wang Mingzhe 1999, 140.

Phase III (c. 700–200 BCE) in the Report is represented by Type C graves. Characteristic are bronze horse bits with double and single stirrup-shaped apertures, painted pottery, and animal patterns. Two phases are distinguished. In the earlier phase the grave mouth is larger than the bottom, while in the later phase it is smaller than the bottom. There are also differences in grave goods, notably in painted decorations, and therefore two sub-phases were distinguished (Fig. 17.1).<sup>7</sup>

Analysis showed that painted pottery was numerous in Type C graves and Terrace II, though less so than in Types A and B or Terrace I (229, Tabs. 16.1–16.2). There was a great variety in painted decoration and a tendency towards more wavy and whirling patterning (Fig. 17.1).<sup>8</sup> During the late Phase III painted pottery from Yanghai Terrace II influenced the Central Tianshan Mountains and Bogda foothills (99, Fig. 8.14).

Bronze horse bits with single stirrup-shaped apertures replace those with double stirrup-shaped apertures, which still occur at the start of Phase III (Fig. 17.5, 4). Such bits are also known from the Northern Tarim Basin and Central Kazakhstan (Id., 7 and 8). In Type C on Terrace II, there is a significant increase in iron objects, though bronze still largely outnumbers the latter (§ 16.3). ‘Flexed on the back’ is almost the only body posture here (198, Tab. 14.3). Animal patterns are common, notably on wooden containers (Fig. 17.6).



**Figure 17.6** – Animal design on wooden containers, Yanghai II, Turfan Basin (after Tulufan Diqu Wenwuju et al. forthcoming, Figs. 519, 491, 633, 752).

Type C graves on Terrace II seem to have been particularly subject to influence from the classic Pazyryk culture in the Altai (c. 500–200 BCE), a trend which already started on Terrace I in some Type B and C graves. Such influence is suggested by the presence of mounds, saddles, animal patterns, harps and log chamber tombs.

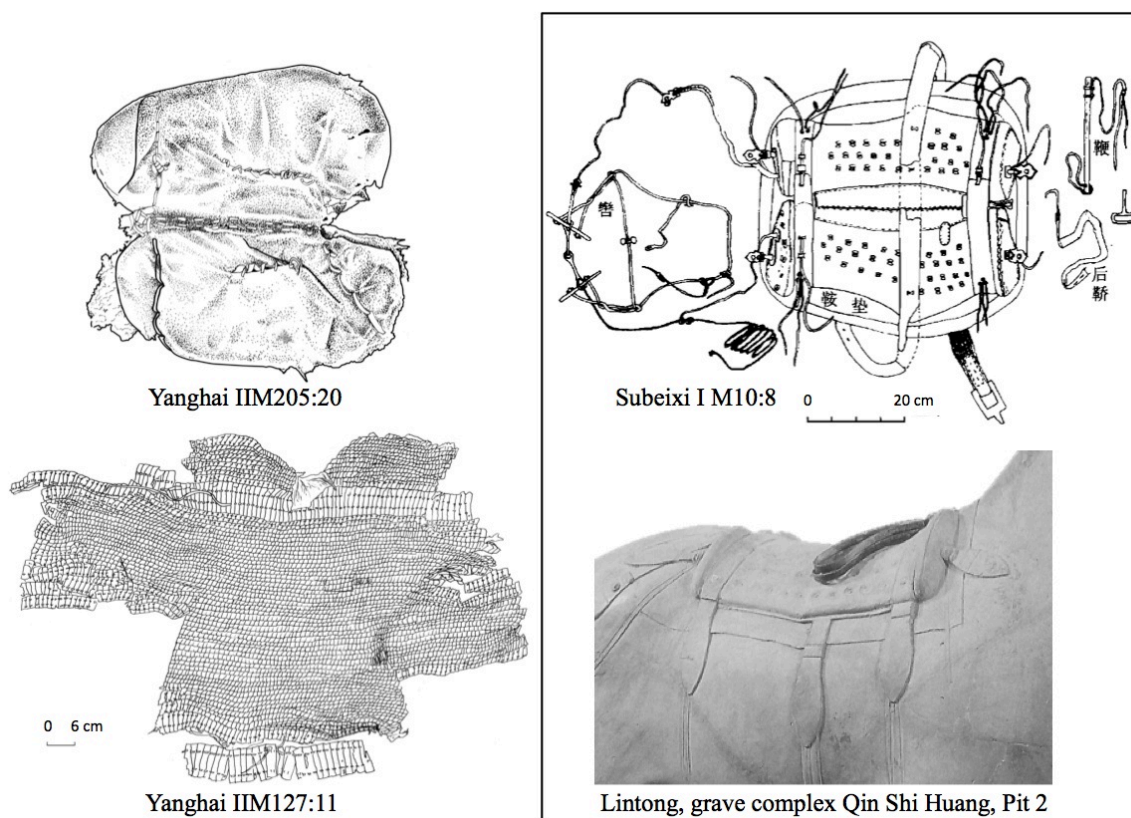
The first mounds are indeed seen in Type C on Terrace II (294, Fig. 21.2). At Yanghai, saddles padded with deer hair similar to samples from Subeixi I and III were found in two Type C graves on Terrace II. Lü Enguo argued that similar padded saddles from Subeixi I and III resemble a sample from the Pazyryk culture, next to moulded saddles on terracotta horses of emperor Qing Shi Huang’s tomb, and depictions of such saddles in the early Xiongnu culture of Noin Ula, all dated 3<sup>rd</sup> c. BCE (280).<sup>9</sup>

<sup>7</sup>Tulufan Diqu Wenwuju et al. forthcoming, Sect. 7.1, 2.

<sup>8</sup>For a pottery typology, see Tulufan Diqu Wenwuju et al. forthcoming, Chapt. 7, Sect. 2.2.

<sup>9</sup>Kiselev 1951; Lü Enguo 1999, 383–384. The Pazyryk saddle is kept at the State Hermitage Museum in Saint Petersburg. No reference number is available.

Fig. 17.7 shows indeed strong similarities between a saddle from Subeixi I, a terracotta one from Lintong dated c. 221–206 BCE, and a sample from Yanghai II (M205:20).<sup>10</sup> Very different is the leather horse harness from Yanghai II (M127:11), which strongly suggest its use in warfare. Direct evidence for leather harnesses in the 3<sup>rd</sup> century BCE is also known from Jiuliandun in Hubei.<sup>11</sup>



**Figure 17.7** – Saddles from Yanghai II, Subeixi I, and Pit no. 2 from the tomb of Qin Shi Huang, Lintong (After Tulufan Diqu Wenwuju et al. forthcoming, Figs. 755-9 and 608-1 and 2; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002, 56, Fig. 6; Bundesrepublik Deutschland GmbH 2006, 153, Cat. 33).

Harpes from Type C graves on Terrace II resemble those from the classic Pazyryk culture (Kurgan II) in the Altai, Zhagunluk I (Phase II) in the southern Tarim Basin, and Qumanhei in the eastern Pamirs.<sup>12</sup> Harpes also occurred in Type B on Terrace I and Type D on Terrace III.

It has been noted that the Pazyryk culture was stylistically influenced by Achaemenid culture.<sup>13</sup> A mixed influence of Scythian and Achaemenid influence was also observed in

<sup>10</sup>Bundesrepublik Deutschland GmbH 2006, 153, Cat. 33.

<sup>11</sup>Prüch 2009, 69, Cat. 53.

<sup>12</sup>Rudenko 1951, 67ff., Fig. 24; in Parzinger 2011 [2006], 594; Xinjiang Weiwu'er Zizhiqu Bowuguan et al. 2003, 115, Fig. 25. Thanks to Dr Wu Xinhua (CASS) for unpublished information on the Qumanhei excavations.

<sup>13</sup>Parzinger 2011 [2006], 596; This is particularly visible at Berel', see Francfort et al. 1998.



the southern Tarim Basin.<sup>14</sup> I suggest that Type C graves on Terrace II also underwent Achaemenid influence, for example in the harps or merlon design in pottery, but this needs further investigation.

Phase IV (c. 200 BCE–200 CE) in the Report is characterised by Type C and D graves, a disappearance of painted pottery, increase of iron objects, and sand-tempered red ware covered with a slip (Fig. 17.1). The Report mentions some typical Han objects for this phase including a wheel-thrown jar and a wooden *erbei* or shallow oval cup with two handles, though I consider these as later features (see below).<sup>15</sup>

Type D or lateral niche graves are almost exclusively found on Terrace III, except five examples on Terrace II of which three in linear formation and covered by mounds with an embedded mud brick ringwall (182, Fig. 13.3). On Terrace III, Type D and C graves were distributed side-by-side in a random fashion (180, Fig. 13.1). In both extended posture on the back prevailed, although a minority of Type C graves maintained the more conservative ‘flexed on the back’ posture (202, Tab. 14.5) – and a WL-ratio of  $\leq 0.5075$  (190, Tab. 13.7). Grave goods of this phase are shown in Fig. 17.8.

In § 16.2, I demonstrated that pottery was still common in Type D graves, while painted pottery was entirely absent in this grave type. Although painted pottery was diagnostic for Type C graves on Terrace II, only one Type C grave with one painted pot was found on Terrace III (230, Fig. 16.1).

Diagnostic for Phase IV are further round-bottomed long-necked jugs, often with flaring mouth (Fig. 17.8, 21). Pottery was still hand-made but coarser than previous phases. Other pottery forms included single-handled drinking cups, bowls, basins, and stem cups, sometimes with rippled surface. Wood or pottery stem cups and ripple ware show continuity between niche graves of terrace II and III (Fig. 17.8, compare such items in 23 from Terrace II with those in 24 from Terrace III).

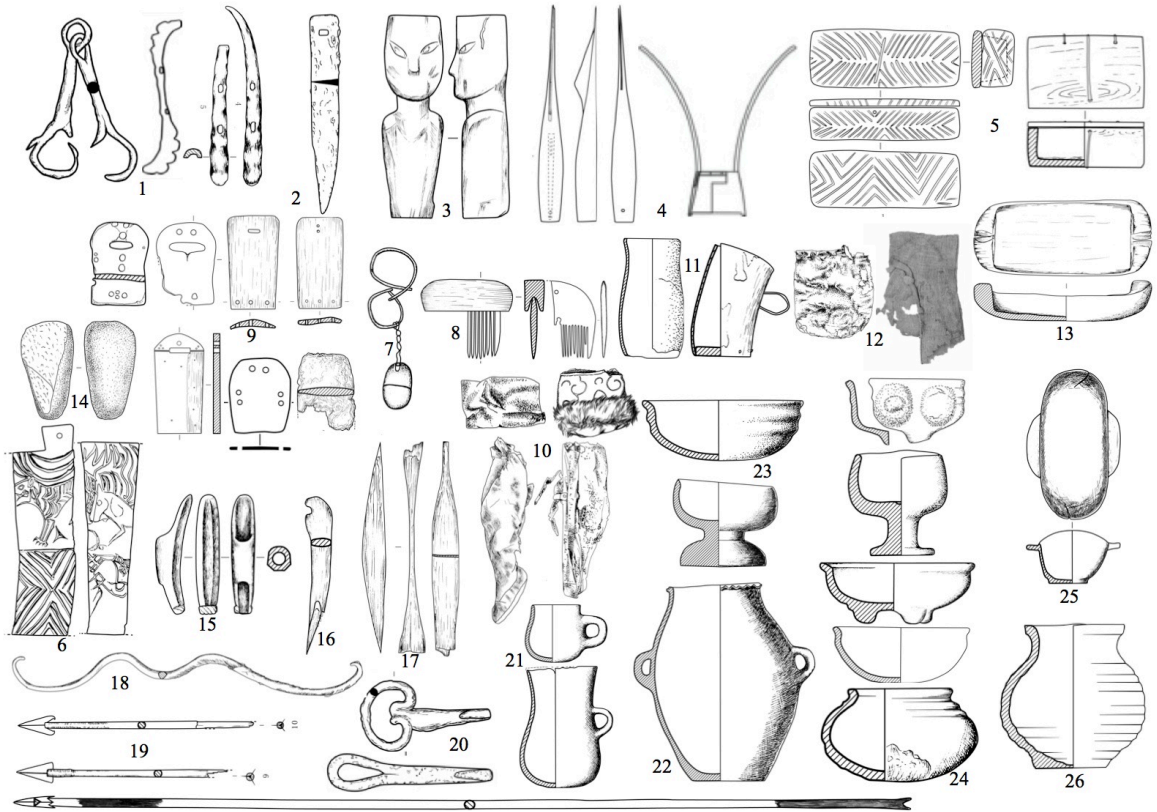
Some characteristic elements of Phase IV, like iron bits with circular endings, S-shaped cheekpieces, bone belt plaques with multiple perforations (Fig. 17.8, 1, 9), and the deposition of whole horses north of the grave occupant, could be the result of a continued influence of the classic Pazyryk culture.<sup>16</sup> Analyses in Chapt. 15 demonstrated the importance of depositing whole horses (to the north of the grave) in lateral niche grave practices at Yanghai. During this phase, horses figured for the first time on wooden containers (Fig. 17.8, 6). Caution is needed with the two iron S-shaped cheekpieces from Yanghai, as these

<sup>14</sup>Francfort 2001a.

<sup>15</sup>Tulufan Diqu Wenwuju et al. forthcoming, Sect. 7.1.

<sup>16</sup>Compare with Parzinger 2011 [2006], 586–606; 599, Fig. 195.

were collected from the surface and their original context is unknown.<sup>17</sup> Bronze S-shaped cheekpieces are also seen in a pottery horse from Qin Shi Huang's tomb complex dated late 3<sup>rd</sup> c. BCE.<sup>18</sup>



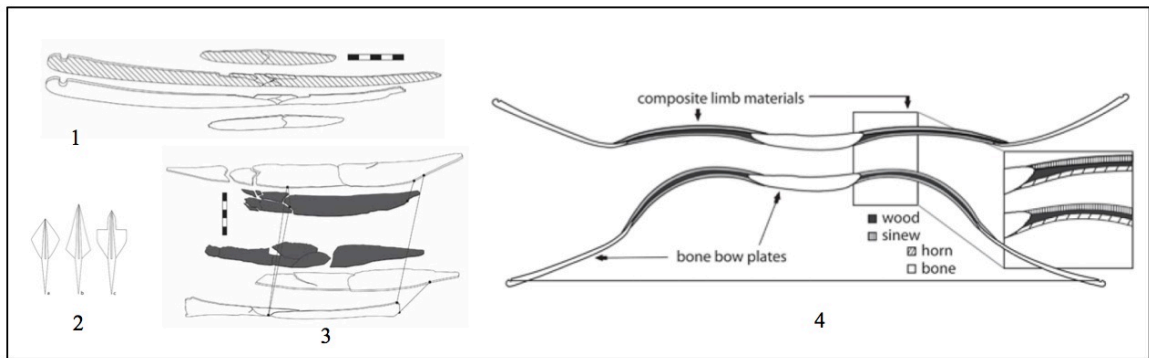
**Figure 17.8** – Assemblage from Yanghai Terrace III (exc. no. 23, which is from niche grave M48, Terrace II). 1) Iron horse bit; iron and horn cheekpiece (after Tulufan Diqū Wenwuju et al. forthcoming, Figs. 793-7; Chapt. 6, Sect. 2; 928-4,5); 2) Iron knife (Id., Fig. 867-5); 3) wooden figurine (Id., Fig. 928-1); 4) wooden headdress (Id., Figs. 826-7; 904-1); 5) wooden boxes (Id., Figs. 826-18; 938-1) ; 6) wooden container (Id., Fig. 830-1); 7) gold and clamshell earring (Id., Fig. 814-1); 8) Wooden combs (Id., Figs. 844-1; 861-7); 9) Bone, wooden, iron belt plaques (Id., Figs. 568-3; 928-2; 875-3,5; 877-3; 922-2; 888-3); 10) Leather: arm guard, purse, boot, bow and arrow case (Id., Figs. 8363; 867-2; 826-13; 824-3); 11) horn mugs (Id., Figs. 869-5; 926-1); 12) cotton purse and cap (Id., Fig. 940-1; Colour Plate 288-2); 13) wooden tray (Id., Fig. 877-8); 14) stone pestle (Id., Fig. 838-10); 15) bone tube-shaped object (Id., Fig. 877-2); 16) bone endplate (Id., Fig. 877-5); 17) bone handle laminations (Id., Fig. 877-6,9); 18) complex bow (Id., Fig. 822-8); 19) wooden arrows (Id., Figs. 832-10; 783-20); 20) iron quiver hooks (Id., Figs. 859-1; 812-1); 21) pottery jug and cup (Id., Figs. 834-3; 867-3); 22) pottery jar (Id., Fig. 838-12); 23) wooden stem cup and pottery basin; 24) pottery: pot, basin, footed basin, stem cup, jar (Id., Figs. 883-5; 795-8; 806-1; 883-7; 934-1) ; 25) wooden *erbei* cup (Id., Fig. 847-7); 26) wheel-thrown pot (Id., Fig. 932-12).

Phase IV shows fully developed composite bows with recurve, bone endplates, and handle laminations (Figs. 17.8, 16–18). Such bows resemble samples from Shombuuziinbelchir in Mongolia, although the arrow types are different (Fig. 17.9). As Michaela Reisinger argued,

<sup>17</sup>Tulufan Diqū Wenwuju et al. forthcoming, Chapt. 6, Sect. 2.

<sup>18</sup>Bundesrepublik Deutschland GmbH 2006, 153, Cat. 33.

the shorter bow-length and long draw of such composite bows, combined with a diverse range of arrows, were very much suited for mounted warfare or mounted hunting.<sup>19</sup>



**Figure 17.9** – 1. Bone endplates; 2) arrow set; 3) bone handle laminates; 4) composite bow construction; Shombuuziinbelchir, Mongolia (After Reisinger 2010, 49, Fig. 17; 54, Fig. 27; 48, Fig. 16; 44, Fig. 2).

Such equipment was advanced compared with the short self bows from Phase I, the slightly curved complex bows of phases II and III, and even the composite bows with moderate recurve and hook-shaped bow nocks of Phase III (Fig. 17.1).<sup>20</sup> Composite bows with reinforced knocks were invented by the Xiongnu and dispersed from Transbaikalia and Mongolia westward into the Eurasian steppes.<sup>21</sup> I suggest the iron quiver hooks and half-open bone tubes were also innovations related to bow-shooting (Fig. 17.8, 20 and 15).

Wooden arrowheads were common, alongside some bone and metal arrowheads. An evolution was observed from bronze bilobate flat bladed arrowheads in Phase I, added with a single barb from Phase II onward, to iron trilobate arrowheads in Phase IV (Fig. 17.1).

I consider the *erbei* cup and grey wheel-thrown pottery (Fig. 17.8, 25 and 26) – attributed to Phase IV in the Report (Fig. 17.1) – as later additions, contemporary with double niches, cotton, and Chinese inscriptions on Yanghai Terrace III. The *erbei* cup was not lacquered and could be locally made. Grave IIIM76 represents these developments featuring double niches, wheel-thrown pottery, cotton and a wooden slip inscribed with ‘代人’ (263). Grey wheel-thrown pottery and a wooden *erbei* coexist in niche grave IIIM29.

Cotton was found in niche graves on Terrace III (M29, M37, M76, and M80) and suggests contact with Gandhara or the Indian world during the 3<sup>rd</sup> and 4<sup>th</sup> c. CE, probably via the southern Tarim Basin. After its domestication in India in the 3<sup>rd</sup> mill. BCE, it took long before it spread beyond its homeland.<sup>22</sup> Cotton was well known in the Fergana Basin in

<sup>19</sup>Reisinger 2010.

<sup>20</sup>Tulufan Diqu Wenwuju et al. forthcoming, Sect. 7.2.19.

<sup>21</sup>Brosseder 2015, 226–229.

<sup>22</sup>Mallory et al. 2000, 212.

the 1<sup>st</sup> c. CE (70), when it also spread into the southern Tarim basin, where it was used together with silk at Zhagunluk.<sup>23</sup>

Double niche graves (Type E), represented by IIIM76 and 06TSYIM4, may have evolved from Type D as suggested in the report. The latter included a document dated 433 CE and miniature paper shoes also known from the Astana cemetery (c. 500–755 CE).<sup>24</sup> I suggest the simple inscription from IIIM76 may be older than that of 06TSYIM4.

In summary, the relative chronology and external data discussed here, in combination with the analyses of internal data in Chapt. 13–16, confirm that the cemetery expanded from Terrace I over II and finally III, and that grave types appeared in the order A–B–C–D–E, although there was substantial overlap (180–183, Figs. 13.1–13.4).

This ‘wandering’ of the cemetery is supported by several variables. Analysis of body posture showed a change from ‘flexed on the side’ (dominant in types A and B on Terrace I) to ‘flexed on the back’ (dominant in Type C on terraces I and II) to ‘extended on the back’ (dominant in types C and D on Terrace III) (198, Tab. 14.3). Body orientation demonstrated continuity between terraces I and II, and a break with Terrace III (§ 14.3). The boundaries between phases I–III, corresponding with terrace phases I and II, may not be as rigid as suggested in Fig. 17.1, although spatial distribution in the easternmost part of Terrace I, along with grave goods, support an earlier date for Type A and B graves.

The relative chronology of Yanghai and external data suggest that between c. 1200 and 800 BCE, the Karasuk culture of South Siberia influenced Type A occupants of Terrace I (cf. shaft-hole axes and curved loop-handled knives). Influence from Tuva in the 8<sup>th</sup> c. BCE affected the development of a horse riding community, represented by Type B occupants on Terrace I, for whom depositing horse tack into graves was a common practice (cf. Arzhan horse bits), and who introduced the first iron. The largest community of Yanghai, represented by Type C occupants on Terrace II, intensified relations with their northern neighbours and were profoundly influenced by the classic Pazyryk culture in the Altai (c. 500–200 BCE), and this probably continued after c. 200 BCE as evidenced from whole horse sacrifice north of the grave, horse bits, and bone belt plaques.

From c. 200 BCE, this N–S interaction of the Yanghai community weakened in favour of a stronger E–W interaction. Shooting equipment showed strong influence from Transbaikalia and Mongolia indicating the occupation of Terrace III was contemporary with the emerging Xiongnu power. Influence from the Eastern Han or its successors (Chinese writing and *erbei*) and the Indian world (cotton) became visible after the common era.

<sup>23</sup>Xinjiang Weiwu'er Zizhiqu Bowuguan et al. 2003, 130.

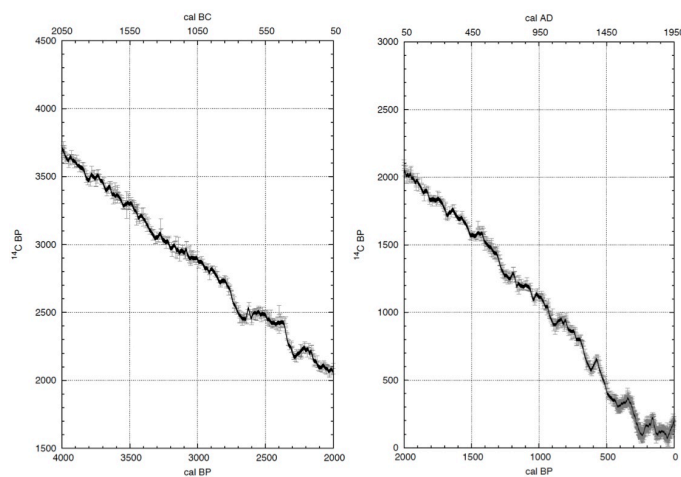
<sup>24</sup>Tulufan Diqu Wenwuju et al. forthcoming, 1–2; Fig. 946; Lu Lipeng 2000.

## 17.3 Absolute chronology

To which degree can the relative chronology of Yanghai (§ 17.2) be underpinned with absolute dates? Tab. 17.2 lists all the (un)published AMS radiocarbon dates. Of the dates generated in the Radiocarbon Laboratory of the Beijing University in 2005 and 2011, only the hemp sample from grave IM90, the caper sample from grave IIM13 as well as the grape vine sample from IIM169, have been published.<sup>25</sup> Unpublished dates generated by the latter and the Radiocarbon Laboratory of the Lanzhou University, will appear in the Report.<sup>26</sup> The AMS dates for the woollen samples from graves IM21 and IM157 generated by the Radiocarbon Laboratory at Poznan have also been published.<sup>27</sup>

Dates from the Beijing Lab have all been calibrated based on the IntCal04 calibration curve<sup>28</sup> using the Oxcal v3.10 programme.<sup>29</sup> The AMS dates from the Poznan lab are calibrated using the OxCal v4.1.5. software and atmospheric data from Reimer et al..<sup>30</sup>

All radiocarbon dates from Yanghai fall between c. 2900 and 2100 BP, except for one outlier of  $3600 \pm 20$  BP (Tab. 17.2). How fluctuations of atmospheric radiocarbon can distort dating results, is demonstrated by the calibration curve in Fig. 17.10, which indicates two C14 plateaus influencing this timeframe. One is an extensive wiggle at c. 2500 BP, corresponding with all actual ages of 750–350 cal. BC. Another, smaller wiggle can be seen at c. 2200 BP, which corresponds with an actual age between 350–150 cal. BC.



**Figure 17.10** – Calibration curve applicable for the period under discussion (Reimer et al. 2004, 1057, Fig. A12; and 1058, Fig. A13).

<sup>25</sup>Jiang et al. 2006; Jiang et al. 2007.

<sup>26</sup>Tulufan Diqu Wenwuju et al. forthcoming.

<sup>27</sup>Kramell et al. 2014.

<sup>28</sup>Reimer, Paula J. et al. 2004.

<sup>29</sup>Bronk Ramsey 2005, [www.rlaha.ox.ac.uk/orau/oxcal.html](http://www.rlaha.ox.ac.uk/orau/oxcal.html).

<sup>30</sup>Ramsey et al. 2010; Reimer, Paula J. et al. 2004.

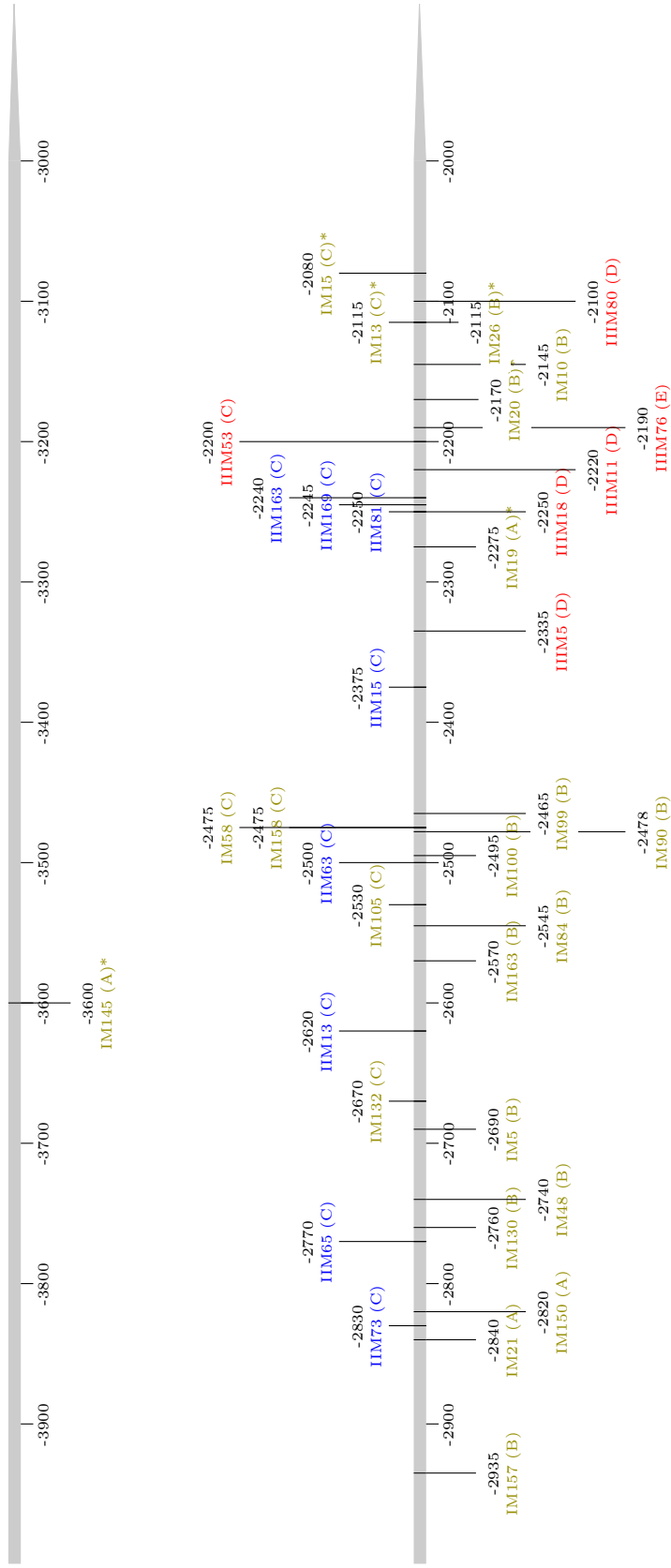
Grave No.	Sample No.	Material	Uncal. (BP)	Cal. BC		Lab. No. Year
				1 $\sigma$ (68.2%)	2 $\sigma$ (95.4%)	
IM145		Bone	3600±20	2021 (20.8%)1989 BC	1983 (79.2%)1895 BC	LZ14269 (3
IM157	20110614/12	Woollen trousers	2935±30	1212 (68.2%) 1056 BC	1261 (95.4%) 1041 BC	Poz-43696 (2011?)2
IM21	20110614/6	Wool/ poncho	2870±30	1114 (68.2%) 1003 BC	1188 (95.4%) 931 BC	Poz-43694 (2011?)2
IM21	20110614/7a	Wool/ trousers	2855±30	1056 (68.2%) 940 BC	1103 (95.4%) 938 BC	Poz-43695 (2011?)2
IM21	20110616/1	Wool/band 1 (l.leg)	2825±35	1016 (68.2%) 922 BC	1074 (95.4%) 935 BC	Poz-43708 (2011?)2
IM21	20110616/2	Wool/band 2 (r. leg)	2810±40	1009 (68.2%) 912 BC	1110 (95.4%) 843 BC	Poz-43709 (2011?)2
IM21	IM21	Wooden stick	(2550±40)	800 (34.5%) 740 BC	1038 (95.4%) 926 BC	BA05525 (2005)1
IIM73		Wood	2830±30	690 (22.9%) 660 BC	700 (54.2%) 530 BC	
IM150		Wood	2820±30	650 (20.8%) 590 BC	1082 (1.9%) 1063 BC	LZ14254 (3
IIM65	IIM265	Coarse wooden stick	2770±40	980 (48.0%) 890 BC	1052-899 BC	LZ14252 (3
IM130	IM130	Wood	2760±40	880 (20.2%) 840 BC	1010 (95.4%) 820 BC	BA05526 (2005)1
IM48		Wood	2740±25	970 (4.9%) 960 BC	1010 (95.4%) 820 BC	BA05519 (2005)1
IM5	IM5	Coarse wooden stick	2690±40	940 (63.3%) 840 BC	929(99.8%)822 BC	LZ14249 (3
IM132		Bone	2670±30	895 (21.5%) 865 BC	920BC(95.4%)790 BC	BA05531 (2005)1
IIM13	IIM213	Caper	2620±35	860 (46.7%) 805 BC	859 (84.1%)798 BC	LZ14268 (3
IM163	IM163	Wooden stick	2570±40	894 (15.9%)863 BC	850 (95.4%) 760 BC	BA07170 (200?)1
				820 (68.2%) 780 BC	690 (1.5%) 670 BC	
				810 (49.3%) 750 BC	820 (55.2%) 730 BC	BA05521 (2005)1
				690 (21.4%) 660 BC	690 (13.8%) 660 BC	
				640 (7.5%) 590 BC	650 (26.4%) 540 BC	

Grave No.	Sample No.	Material	Uncal. (BP)	Cal. BC		Lab. No. Year
				1 $\sigma$ (68.2%)	2 $\sigma$ (95.4%)	
IM84		Bone	2545 $\pm$ 30	508 (3.8%) 496 BC	645 (36.7%) 548 BC	LZ14264 (3)
IM105		Bone	2530 $\pm$ 30	690 (14.4%) 659 BC	649 (48.0%) 543 BC	LZ14267 (3)
IIM63	IIM63	Wooden stick	2500 $\pm$ 50	770 (25.2%) 720 BC	790 (89.7%) 480 BC	BA05534 (2005)1
IM100		Bone	2495 $\pm$ 25	700 (53.0%) 540 BC	470 (5.7%) 410 BC	LZ14266 (3)
IM90	IM90	Wooden stick	2480 $\pm$ 40	760 (22.7%) 680 BC	770 (87.3%) 480 BC	BA05520 (2005)1
IM90	IM90:8	<i>Cannabis sativa</i>	2475 $\pm$ 30	670 (45.5%) 520 BC	470 (8.1%) 410 BC	
				760 (23.8%) 680 BC	770 (89.4%) 480 BC	BA04538 (200?)1
				670 (21.3%) 610 BC	470 (6.0%) 410 BC	
				600 (23.2%) 520 BC		
IM158		Wood	2475 $\pm$ 35	464 (1.6%) 450 BC	445 (2.0%) 429 BC	LZ14253 (3)
IM99		Bone	2465 $\pm$ 25	462 (0.9%) 454 BC	444 (1.8%) 430 BC	LZ14265 (3)
IM58		Wood	2430 $\pm$ 30	589 (1.5%) 575 BC	570 (71.1%) 404 BC	LZ14250 (3)
IIM15		Bone	2375 $\pm$ 20	508 (3.8%) 496 BC	493 (96.2%) 396 BC	LZ14270 (3)
IIM5		Bone	2335 $\pm$ 20		408-382 BC	LZ14272 (3)
IM19		Wood	2275 $\pm$ 30		998-841 BC	LZ14247 (3)
IIM18	IIM18-17	Textile	2250 $\pm$ 30	389 (68.2%) 211 BC	398 (95.4%) 202 BC	20110615/5 (2011?)2
IIM81	IIM281	Wooden stick	2250 $\pm$ 40	390 (24.8%) 350 BC	400 (95.4%) 200 BC	BA05522 (2005)1
				300 (42.6%) 230 BC		
				220 (0.9%) 210 BC		
IIM169	IIM2069	Grape vine	2245 $\pm$ 35	390 (22.9%) 350 BC	400 (28.9%) 340 BC	BA07172 (200?)1
				300 (44.9%) 230 BC	330 (66.5%) 200 BC	
				220 (1.2%) 210 BC		
IIM163	IIM2063	Wooden stick	2240 $\pm$ 40	390 (19.7%) 350 BC	400 (95.4%) 200 BC	BA05530 (2005)1
				300 (48.5%) 210 BC		
IIM11		Wood	2220 $\pm$ 25	370 (16.9%) 334 BC	328 (83.1%) 203 BC	LZ14256 (3)
IIM53	IIM353	Wooden stick	2200 $\pm$ 40	360 (42.2%) 270 BC	390 (95.4%) 170 BC	BA05533 (2005)1
				260 (26.0%) 200 BC		

Grave No.	Sample No.	Material	Uncal. (BP)	Cal. BC		Lab. No. Year
				1 $\sigma$ (68.2%)	2 $\sigma$ (95.4%)	
IIIM76	IIIM376	Wooden stick	2190 $\pm$ 40	360 (42.0%) 280 BC 260 (26.2%) 190 BC	390 (95.4%) 160 BC	BA05532 (2005)1
IM20	M20	Leather	2170 $\pm$ 35	360 (37.3%) 290 BC 240 (30.9%) 170 BC	370 (95.4%) 110 BC	BA08020 (2008)1
IM10	M10	Wheat stalk	2145 $\pm$ 35	640 (7.5%) 590 BC 350 (17.0%) 310 BC 210 (51.2%) 110 BC	650 (26.4%) 540 BC 360 (25.6%) 280 BC 260 (69.8%) 50 BC	BA08017 (2008)1
IM26	M26	Leather	2115 $\pm$ 35	650 (20.3%) 590 BC 200 (68.2%) 90 BC	350 (5.2%) 310 BC 210 (90.2%) 40 BC	BA08018 (2008)1
IM13	M13	Wheat stalk	2115 $\pm$ 35	200 (68.2%) 90 BC	350 (5.2%) 310 BC 210 (90.2%) 40 BC	BA08019 (2008)1
IIIM80		Bone	2100 $\pm$ 25		187—49 BC	LZ14273 ( )3
IM15	M15	Food from stomach	2080 $\pm$ 30	160 (16.0%) 130 BC 120 (52.2%) 40 BC	200 (94.3%) 20 BC 10BC (1.1%) AD	BA08016 (2008)1

**Table 17.2** – AMS radiocarbon dates for the Yanghai graves, Turfan Basin. (All are accelerator mass spectrometry (AMS) dates from samples dated by the 1) Radiocarbon Laboratory from the Beijing University in China; 2) the Radiocarbon Laboratory at Poznan in Poland; and 3) the Radiocarbon Laboratory from the Lanzhou University in China (References, see text.)





**Figure 17.11** – Uncalibrated radiocarbon dates BP for graves located on Terrace I (green), Terrace II (blue) and Terrace III (red) at the site of Yanghai. Grave types are added between brackets. Dates with an asterisk (\*) are considered faulty. The sources of the dates are provided on p. 247.

Each BP date in Tab. 17.2 refers to one object from one grave, which only gives a *postquem date* for the closing of that grave after one deposition. However, many burials at Yanghai are the result of multiple depositions that took place at various time slots. Such graves were thus in use during several generations, and each BP date dates only one event within such a timespan. This problem further complicates the dating of the Yanghai graves.

Improper sampling resulting from the choice of short- or long-lived samples (4), and human errors like sample exchange, further affect reliability of radiocarbon dating. Such presumable errors have been marked with an asterisk in the timeline and are commented below.

For an easier assessment of radiocarbon dates, I only used raw BP (i.e. before 1950) dates and plotted these on a timeline (Fig. 17.11). For an easier reference to grave types and object types, I further compiled a catalogue of all radiocarbon dated graves (Tab. 17.3).

After plotting the BP dates on a timeline, it was observed that the radiocarbon wiggles mentioned above are reflected in a weak clustering around the c. 2500 BP and c. 2200 BP dates (Fig. 17.11). The clustering around c. 2200 BP is more pronounced and includes also Type E. This wiggle is particularly inconvenient as it includes the trajectory when niche graves appear.

The earliest radiocarbon date, obtained from a bone sample from Type A grave IM145, gives an outlier of  $3600 \pm 20$  BP on the timeline. Its positioning at the start of the sequence is only corroborated by its early body posture (flexed on the side, see 198). The geometric tattoos have no parallels in the region and give no chronological indication. The composite bow is rather simple and made of bone and wood (Tab. 17.3, IM145).

The outlier just mentioned lies c. 600 years apart from the next early date of  $2935 \pm 30$  BP (c. 1200–1000 BCE), attributed to a pair of woollen trousers from Type B grave IM157. As this date is situated closer to the other ones, it is a better candidate for the lower bound of the Yanghai graves. However, this assumption is again only supported by one single date. The other radiocarbon dates of types B and C, show no immediate chronological significance corroborating the existence of an earlier Type B and a later Type C. Only horizontal stratigraphy, grave goods and variables like body posture support such a claim (§ 17.2).

The pair of trousers from Type B grave IM157 provide, together with another similar sample from Type A grave IM21, the oldest radiocarbon dated evidence for this kind of garment associated with horseback riding.<sup>31</sup> It is noteworthy though, that the oldest pair

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<sup>31</sup>Kramell et al. 2014; Beck et al. 2014.

came from a Type B grave and not a Type A grave:  $2935 \pm 30$  BP or between 1212–1056 ( $1 \sigma$  or 68.2%) cal. BC and 1261 ( $2 \sigma$  or 95.4%) cal. BC (Tab. 17.2). Again, this shows the chronological overlap between both types. On the other hand, special garments as trousers, may have been passed down from one generation to the other. As I was told during my fieldwork in 2013 by a colleague archaeologist, the family of his grandmother possessed one pair of trousers, and whenever one member of the family had to travel, this pair of trousers was given to that person.

Both individuals in Type B grave IM157 were buried ‘flexed on the side’ and so were probably the three individuals in Type A grave IM21.<sup>32</sup> As this body posture can be considered earlier than ‘flexed on the back’ (197 ff.), the chronological overlap between both graves is even more justified.

Apart from the trousers in both graves there are other objects related to horseback riding, such as a stock whip in IM157, and a bridle with wooden cheek-pieces and stock whip in IM21 (see also 238). It is finally remarkable that in IM21, Karasuk-type objects as curved loop handled knives and tubular socket axes were found in association with horse-riding accessories as trousers, bridle set and whip, all indicating horseback riding was practiced by the earliest Bronze Age settlers of Yanghai, represented by IM21. A composite bow, arrow case and leather arm-guards also found in IM21 and IM157, suggest riding was possibly combined with shooting activities (Tab. 17.3, IM157 and IM21).

The dates of Type A grave IM21 put it just after the start of the sequence on the timeline. The dates from 4 wool samples fall in the same range, so I only plotted the median (2840 BP) on the timeline. A fifth date from a wood sample yielding a much younger date ( $2550 \pm 40$  BP) could be an anomaly and was excluded from calculating the median.

At a few grave lengths away from IM21 on Terrace I lies IM19 with very similar grave goods as M21, such as a loop-handled curved bronze knife, bronze bells and cowries, as well as exhibiting a similar posture ‘flexed on the side’ (Tab. 17.3, IM21 and IM19). Despite the strong resemblance, M19 yielded a much younger date of  $2275 \pm 30$  BP. To date IM19, especially as it concerns a single deposit of one individual, it is therefore better to rely on the dates from the first four samples of IM21 —yielding a calendar date between c. 1100 and 900 cal. BC. The date of c. 12<sup>th</sup>–11<sup>th</sup> BCE attributed to the bronze shaft-hole axe and curved knife from M21 based on cross-dating (236), overlaps with this date.

Type B grave IM20 ( $2170 \pm 35$  BP) falls almost at the end of the sequence, while its location on Terrace I, and the long-necked belly jars with serrated line decoration attributed

<sup>32</sup>For IM21, it was recorded that all three were buried ‘flexed’ with no reference whether that was ‘on the side’ or on the ‘back’, though the drawing in Tab. 17.3, IM21 suggest it was ‘on the side’.

to Phase II in the Report (237, Fig. 17.1), indicate a much earlier date. The body postures are unknown and do not give a chronological indication. Even assuming that the three individuals buried in this grave were deposited at various time slots cannot account for this discrepancy. The presence of painted pottery here, as well as in the graves IM13, IM15, IM26 all located on Terrace I, and the ‘flexed on the side’ posture in the latter, suggest these are all incorrect radiocarbon dates (Fig. 17.11).

Type B grave IM163 yielded a date of  $2570\pm 40$  BP (c. 800–600 cal. BC), corresponding with the date of 8<sup>th</sup> c. BCE attributed to the diagnostic bronze horse bits with double stirrup-shaped apertures found in this grave (Tab. 17.3, IM163). The latter was done through cross-dating with similar samples from Arzhan.<sup>33</sup> This was – together with even older cheekpieces – the basis for dating Type B and C graves of Phase II to c. 1000–700 BCE (239–240).

All radiocarbon dates obtained from Type D or niche graves fall within the range between  $2335\pm 20$  BP and  $2100\pm 25$  BP, corresponding with 400–50 cal. BC. That this does not correspond with the date of c. 200 BCE–200 CE attributed to Type D on the basis of its objects (§ 17.2), can partly be explained by the radiocarbon wiggle (247). The supposedly later date of the double niche grave type (E) discussed in § 13.2 and represented by grave IIM76, is not confirmed by its BP date ( $2190\pm 40$ ), as shown on the timeline.

The relatively late appearance of cotton at Yanghai, present in graves IIM76, IIM37 and IIM80, is only supported by one date in IIM80 ( $2100\pm 25$  BP), which comes at the end of the sequence but still corresponds with an early date of 187–49 cal. BC. The same applies to other presumably late features such as the burial of whole horse into the entry pit of niche graves (Tab. 17.3, IIM80; see also arguments in § 15.4).

However, the type of wheel-thrown pots without handles and wooden slips with Chinese inscription in grave IIM76 are unique for Terrace III at Yanghai, and especially the former suggests a later date than for the single niche graves (Tab. 17.3, IIM76). It can nevertheless be questioned if IIM73 can be cross-dated on the basis of the presence of a double niche and a Chinese inscription found in another double niche grave (2006TSYI IM4) north of Terrace I (246). While the inscription in the former consisted of only two characters ‘代人’, the one in the latter is more complex and could be dated rather accurately 433 CE.

In conclusion, can the terrace phases (I–III), grave typology (A–E), and object typology be underpinned by the available radiocarbon dates? The timeline shows that the first half of the BP sequence is mainly populated by graves from Terrace I (15 graves) and a few from

<sup>33</sup>For radiocarbon dates of Arzhan, see Marsadlov 1996.

Terrace II (4). Four graves with faulty dates (IM145, IM19, IM20, IM13, IM15, see above) should probably be added to this. The second half of the BP sequence is mostly populated by graves from Terrace III (6), followed by graves from Terrace II (4) and Terrace I (6–5=1 grave if the faulty dates are not included). This should be placed against the fact that the sampling of graves from Terrace I (27 samples), largely outnumbers those of Terrace II (6) and Terrace III (6). In summary, the radiocarbon dates suggest that Terrace Phase III is much more demarcated than Terrace Phase I and II, which show much more overlap.

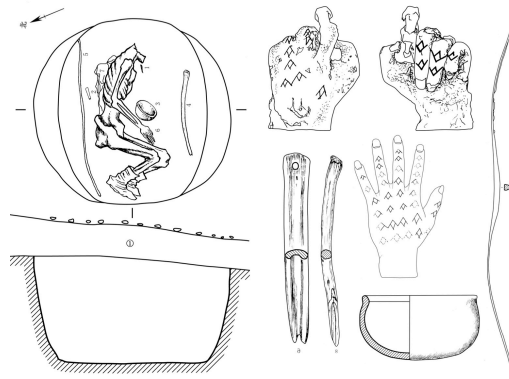
From the perspective of grave typology, the following can be said. Types A and B may have appeared as the first grave types in the sequence, but were quickly joined by Type C graves which dominated the whole sequence. In the first half of the sequence (c. 2900–2400 BP), Type C exists side-by side with Type A and even more so with Type B. In the second half of the sequence (c. 2400–2100 BP), Type C largely co-exists with Type D, occasionally joined by a Type B grave. Furthermore, Type D exclusively occurs in the second half of the sequence.

Grave N°: M145

Terrace: I

Grave Type: A

Date: 3600±20 BP



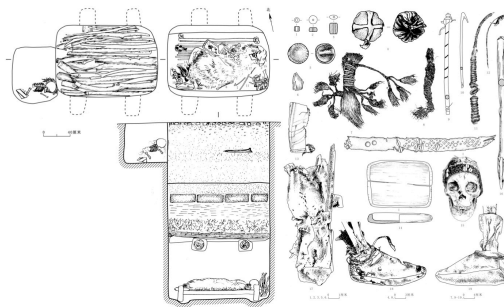
**Inventory:** Hand with tattoo, composite bow (wood, bone), red pottery ware (bowl), wooden peg, bone nail, shuttle of a loom, woollen unstitched long dress.

Grave N°: M157

Terrace: I

Grave Type: B

Date: 2935±30 BP



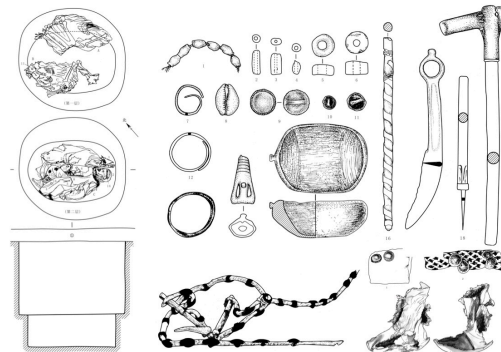
**Inventory:** Composite bow (wood, bone, horn), bow and arrow case with reinforcement board, stock whip, tassel made of horse tail, copper, wool and animal bone. Leather boots with bronze attachments, arm-guard, woollen head-band with cowries, leather purse, wooden tray, peg, bronze button, beads, (basketry) ornaments, wooden shaft, trousers, woollen belt.

Grave N°: M21

Terrace: I

Grave Type: A

Date: 2840 BP



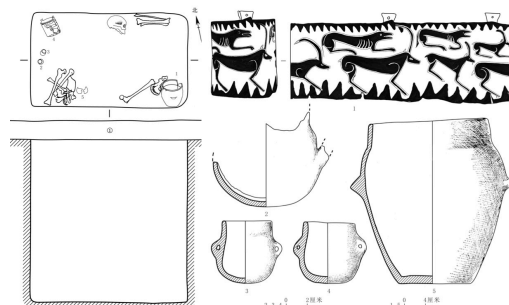
**Inventory:** Shafted bronze axe, bronze curved loop-handled knife, 2 golden earrings, bronze earring, bronze awl, bronze bell, cowries, leather arm-guard, bridle with wooden cheek-pieces, stock whip, leather boots, leg wrappings, trousers, 2 woollen belts, bronze buttons, unstitched woollen dress, 2 woollen tassels, beads (turquoise, carnelian and other material), wooden bowl.

Grave N°: M73

Terrace: II

Grave Type: C

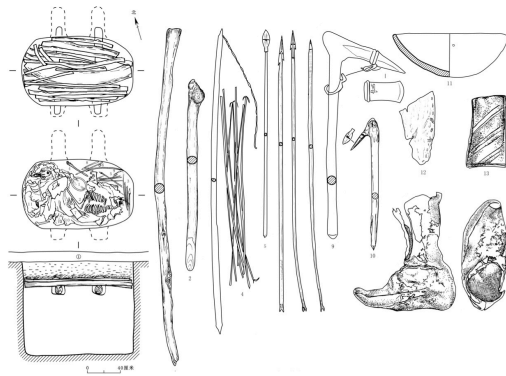
Date: 2830±30



**Inventory:** Wooden container with animal design (wolf, ibex), 2 jars with two small lugs, pot with two tab handles, single handled container.

Grave N°: M150

Terrace: I



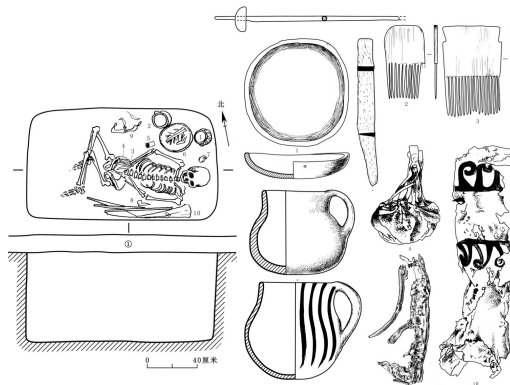
Grave Type: A

Date: 2820±30 BP

**Inventory:** Bronze axe with wooden shaft, socketed bronze blade, bow including string, bow and arrow case, wooden arrows, leather arm guard, peg, bowl, stick, leather boots.

Grave N°: M65

Terrace: II



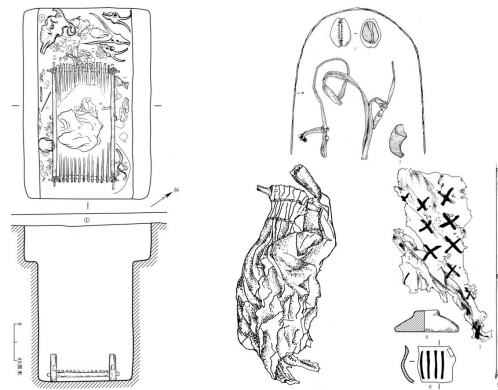
Grave Type: C

Date: 2770±40 BP

**Inventory:** Iron knife, leather bow and arrow case, leather belt, wooden spindle, wooden combs (2), wooden bowl, bag (leather and bone), 1 painted and 1 unpainted single handle jugs.

Grave N°: M130

Terrace: I



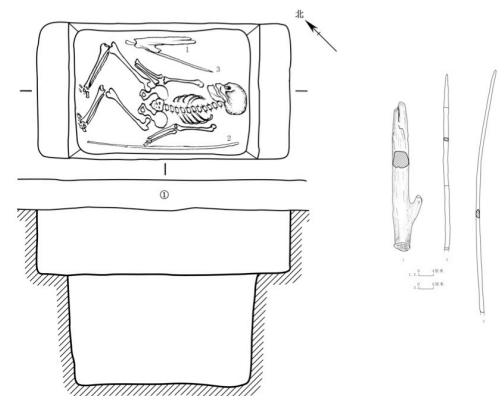
Grave Type: B

Date: 2760±40 BP

**Inventory:** Leather bow string, arrow shafts, cow horn, woolen rug, belts, shawl, tapestry and other textile fragments, leather bridle, sheep tripe dairy bag, pottery drinking cup and vessel, cowries.

Grave N°: M48

Terrace: I



Grave Type: B

Date: 2740±25 BP

**Inventory:** Wooden bow, wooden hook, wooden implement.

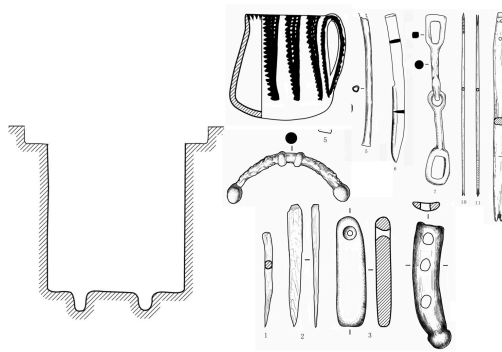
Grave N°: M5

Terrace: I

Grave Type: B

Date: 2690±40 BP

**Inventory:** Single handed painted jug with pattern of inverted saw-tooth triangles, bone cheekpiece, bone tube, bronze knife with curved back, bronze horse bit, belt buckle, 2 wooden arrows, wedge, nails, whetstone.



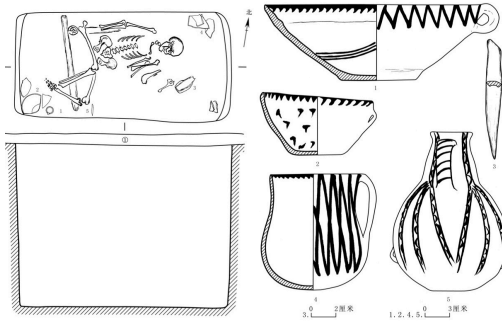
Grave N°: M132

Terrace: I

Grave Type: C

Date: 2670±30 BP

**Inventory:** Painted pottery (single handed bowl, basin, single handed jug, single handed long-necked jar with two small lugs) bone awl.



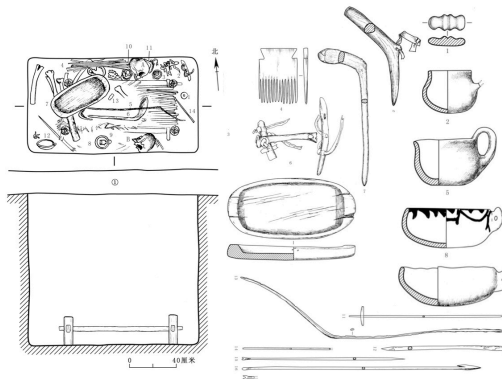
Grave N°: M13

Terrace: II

Grave Type: C

Date: 2620±35 BP

**Inventory:** Composite bow, wooden arrows, throw stick, horn awl, painted and unpainted single handed drinking cups and bowls, wooden tray, peg and comb, spindle, stone button, bone cheekpieces.



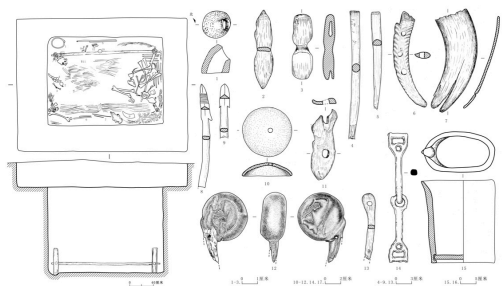
Grave N°: M163

Terrace: I

Grave Type: B

Date: 2570±40 BP

**Inventory:** Cheekpieces (antler, wood), horse bits (horn, bronze), arrows, reinforcement board for arrow case, wooden pegs, handle of walking stick with zoomorphic decoration, wooden container, bone buttons, mussel shell ornament.





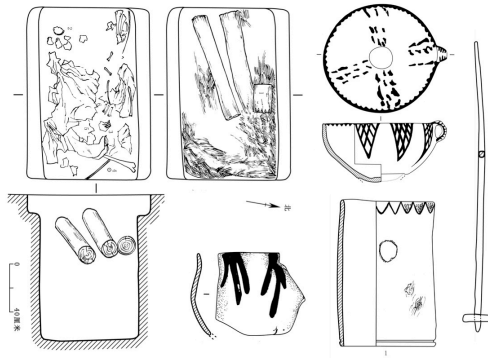
Grave N°: M84

Terrace: I

Grave Type: B

Date: 2545±30 BP

**Inventory:** Painted pottery ware (single handled tray with ring-foot and sherd, wooden container, spindle), woollen unstitched long dress and other woollen textile fragments.



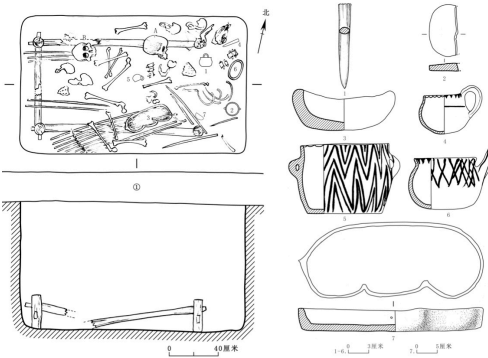
Grave N°: M105

Terrace: I

Grave Type: C

Date: 2530±30 BP

**Inventory:** Painted pottery ware (drinking cup with upturned strap handle, double handled drinking cup), wooden objects (tray, bowl, nail, plaque).



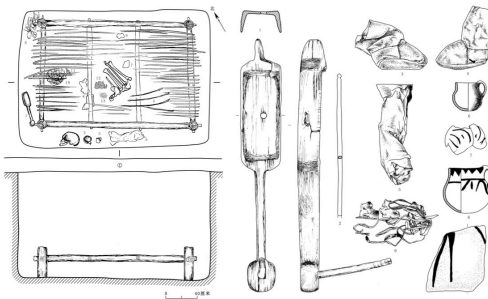
Grave N°: M63

Terrace: II

Grave Type: C

Date: 2500±50 BP

**Inventory:** Wooden bow, leather boots, leather bridle, woollen sleeve fragments, string made of wool and human hair, single handled drinking cups (painted and unpainted), harp.



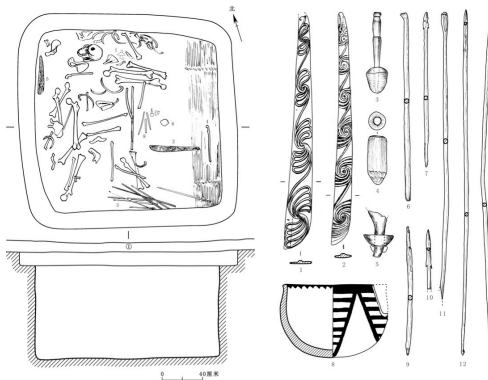
Grave N°: M100

Terrace: I

Grave Type: B

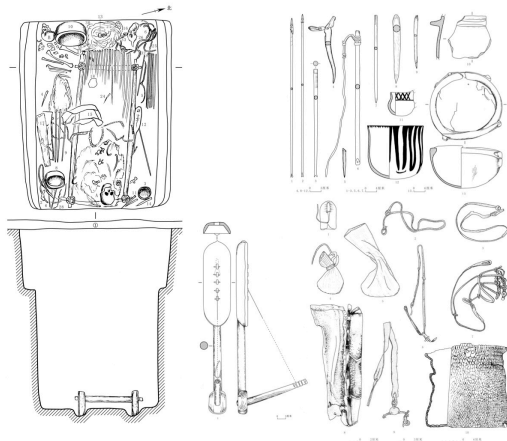
Date: 2495±25 BP

**Inventory:** Wooden reinforcement board for bow and arrow case, wooden arrows, painted pottery bowl, wooden buttons with leather from bridle set, stick, peg.



Grave N°: M90

Terrace: I



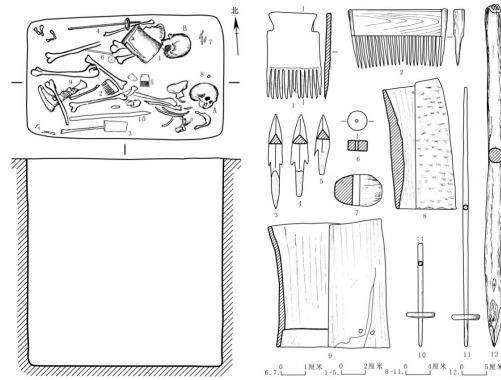
Grave Type: B

Date: 2475±30 BP

**Inventory:** Woollen belt (5), rug, unstitched long dress, wooden nails (4), peg, leather bridle sets (5) with wooden cheekpieces, bone rings and rivets, bodkin for undoing knots, bow and arrow case, whip, leather bag (2), thumb cap, harp, wooden basin, arrow, leather basket, drinking cups (2).

Grave N°: M158

Terrace: I



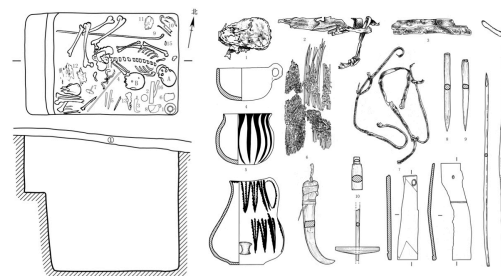
Grave Type: C

Date: 2475±35 BP

**Inventory:** Wooden objects (combs, spindles, 2 containers, peg), bone arrowheads, woollen belt, beads.

Grave N°: M99

Terrace: I



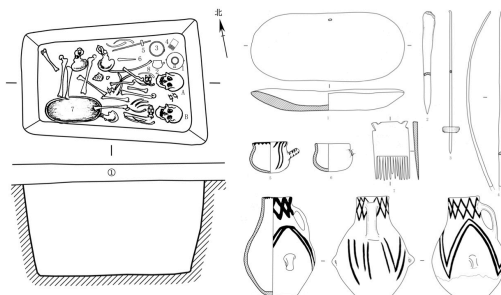
Grave Type: B

Date: 2465±25 BP

**Inventory:** Painted pottery (single handled jar with two smaller lugs, single handled jug), unpainted red ware (single handled cup), wooden objects (2 container fragments), bodkin for untying knots, arrow, nail, spindle, walking stick, handle, leather items (knife sheath, purse, belt, bridle), winnowing fan fragment made of needle grass.

Grave N°: M58

Terrace: I



Grave Type: C

Date: 2430±30 BP

**Inventory:** Painted pottery (single handled jar with two smaller lugs, drinking cup with upturned strap handle, single handled drinking cup), wooden objects (tray, comb, spindle, bow), bone awl.

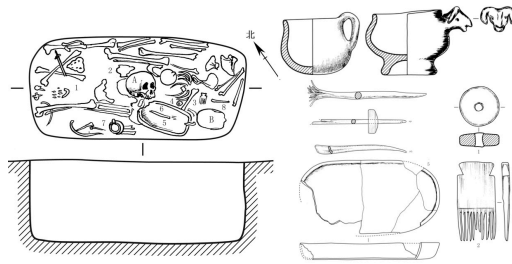
Grave N°: M15

Terrace: II

Grave Type: C

Date: 2375±20 BP

**Inventory:** Red pottery ware (single handled drinking cup, stem cup with sculpted sheep head handle, tray), wooden objects (comb, spindle, nail).



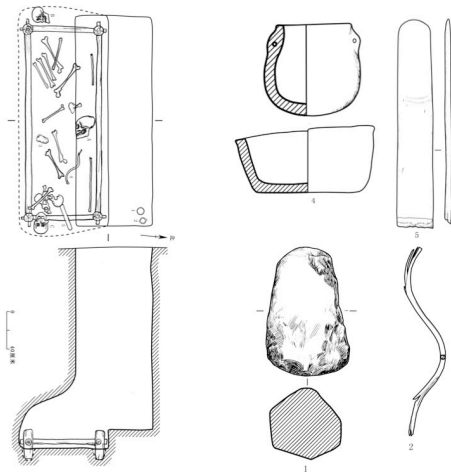
Grave N°: M5

Terrace: III

Grave Type: D

Date: 2335±20 BP

**Inventory:** Red pottery ware (jar with small lug handles, bowl), wooden composite bow, part of headdress ornament, stone pestle.



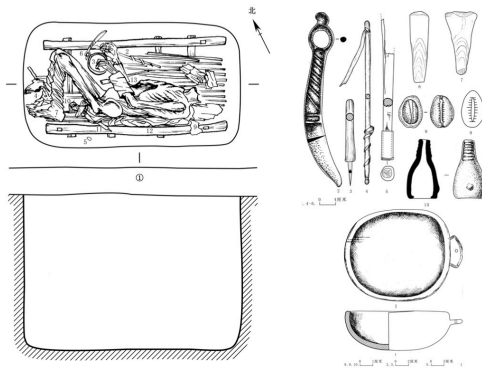
Grave N°: M19

Terrace: I

Grave Type: A

Date: 2275±30 BP

**Inventory:** Bronze curved knife with loop handle, wooden shaft with bronze upset, bronze bell, ornament, awl, leather and wood whip, wooden tray, cowries, wooden nail or needle, bronze awl with wooden shaft, woollen leg wrappings, woollen belt and textile fragments.



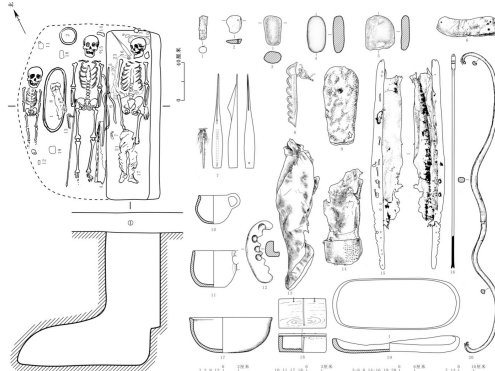
Grave N°: M18

Terrace: III

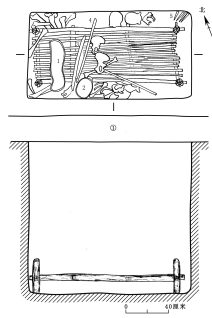
Grave Type: D

Date: 2250±30 BP

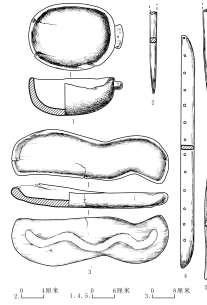
**Inventory:** 2 bow and arrow cases (1 with reinforcement board), wooden arrow, composite bow (wood, cow sinew, cow horn), bow and arrow case, scabbard with ring, turquoise ornament, gold foil ornament, pottery bowl, single handled drinking cups (2), wooden tray, board for fire making, 2 stone pestles, grinding stone, leather pillow, woollen bag, headdress (wood, human hair, wool), leather boot, belt (leather and wood), unstitched long dress, skirt.



Grave N°: M81



Terrace: II

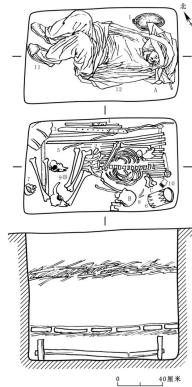


Grave Type: C

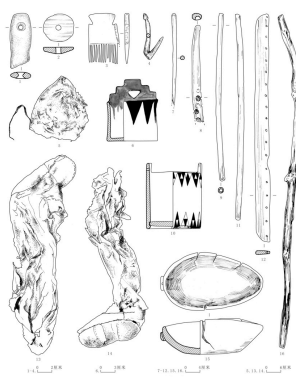
Date: 2250±40 BP

**Inventory:** Wooden bow, reinforcement board for bow or arrow case, wooden tray, wooden nail, single handled wooden bowl.

Grave N°: M169



Terrace: II

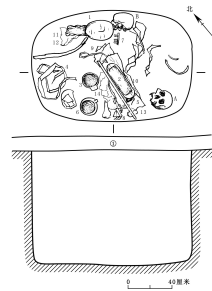


Grave Type: C

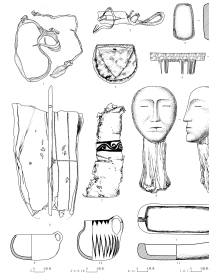
Date: 2245±35 BP

**Inventory:** Grape vine, fire making device (board and sticks), whetstone, wooden reinforcement board for bow or arrow case, drinking cup with stepped handle and painted triangular design, double handled wooden container painted with triangular design, wooden objects as single handled tray, hook, spindle and comb, leather arm guard.

Grave N°: M163



Terrace: II

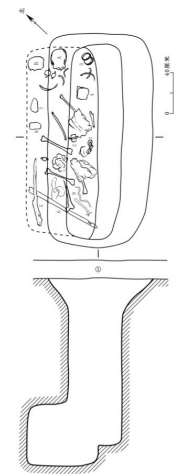


Grave Type: C

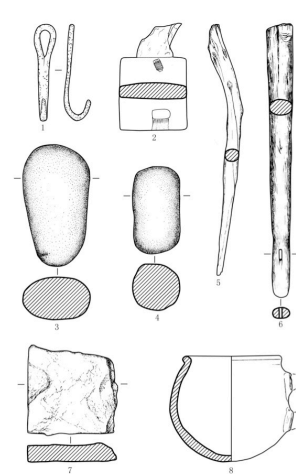
Date: 2240±40 BP

**Inventory:** Two bow and arrow cases (one with reinforcement board), leather bridle with bone buttons, woollen trousers, woollen skirt, stone pestle, bag (leather and wood), wooden comb, single handled jar and drinking cup, clay mask.

Grave N°: M11



Terrace: III

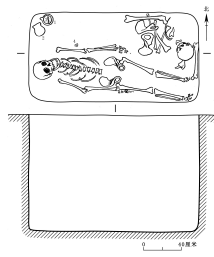


Grave Type: D

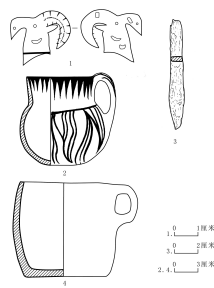
Date: 2220±25 BP

**Inventory:** Iron quiver hook, wooden belt plaque with leather fragment, grinding stone, 2 stone pestles, wooden pegs, single handled red pottery jug.

Grave N°: M53



Terrace: III

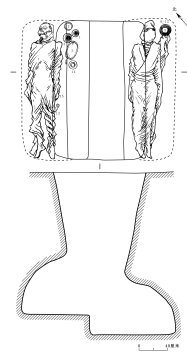


Grave Type: C

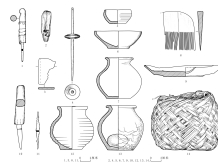
Date: 2200±40 BP

**Inventory:** Gold foil ornament in the form of a horned animal head, iron knife, single handled painted pottery jug, single handled unpainted pottery jug.

Grave N°: M76



Terrace: III

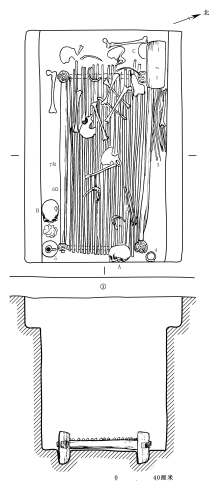


Grave Type: E

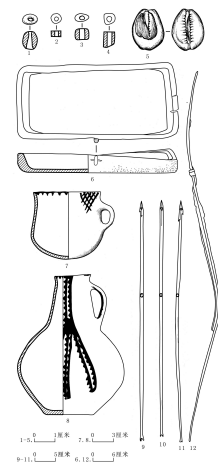
Date: 2190±40 BP

**Inventory:** Iron knife, 2 iron awls, cotton cap, reed basket, 3 pottery jars (one holding a chicken egg) and 2 pottery bowls, cotton unstitched long dress, wooden spindle, animal sinew belt, wooden comb, wooden tray on low ringfoot, wooden slip inscribed with Chinese characters '代人'.

Grave N°: M20



Terrace: I

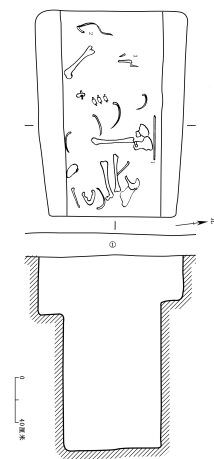


Grave Type: B

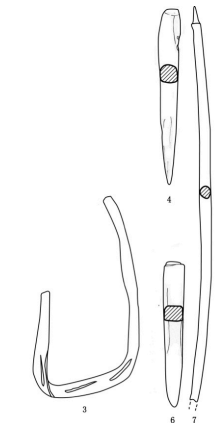
Date: 2170±35 BP

**Inventory:** Single handled long-necked jar, single handled jug, composite bow, arrows, tray, beads, cowrie.

Grave N°: M10



Terrace: I



Grave Type: B

Date: 2145±35 BP

**Inventory:** Leather belt, wooden arrow, 2 wooden nails.

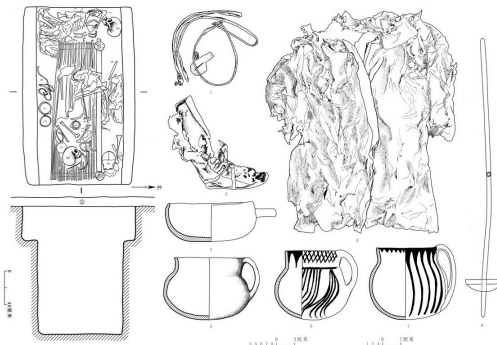
Grave N°: M26

Terrace: I

Grave Type: B

Date: 2115±35 BP

**Inventory:** Leather bridle, leather boot, leather garment, 3 single handled painted pottery jugs, unpainted single handled pottery jug and bowl, short woollen pants, woollen unstitched dress, woollen pant leg, woollen belts (3), wooden spindle.



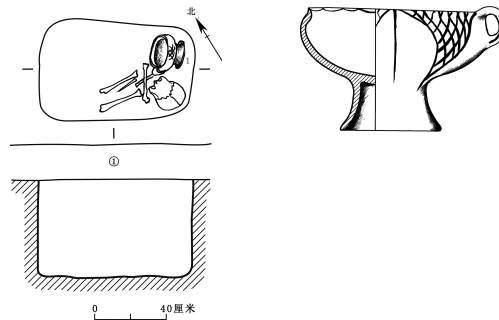
Grave N°: M13

Terrace: I

Grave Type: C

Date: 2115±35 BP

**Inventory:** Single handled stem cup.



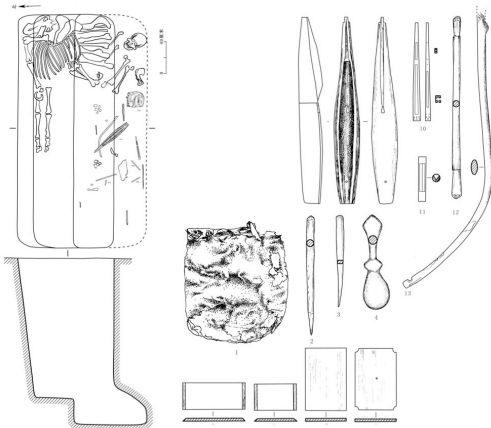
Grave N°: M80

Terrace: III

Grave Type: D

Date: 2100±25 BP

**Inventory:** Wooden headdress ornaments, wooden objects (composite bow, 2 nails, box, 2 implements), purse (leather and cotton) .



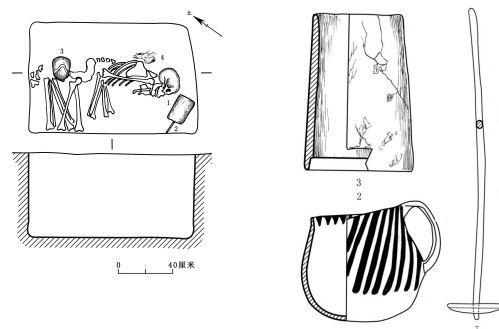
Grave N°: M15

Terrace: I

Grave Type: C

Date: 2080±30 BP

**Inventory:** Wooden container, single handled painted jar, wooden spindle, food from stomach.



**Table 17.3** – Catalogue of radiocarbon dated graves compiled by author. This order does not reflect the actual chronological order. (Images adapted from Tulufan Diqu Wenwuju et al. forthcoming, Figs. 21–23, 29–32, 38–44, 51–52, 89–90, 106–107, 150–151, 159–162, 178–181, 190–191, 230–231, 234–235, 256–257, 261–263, 266–267, 278–281, 290–291, 412–413, 416–417, 500–501, 504–505, 518–519, 532–533, 625–626, 676–677, 688–689, 800–801, 811–812, 892–893, 939–940, 931–932.)

## 17.4 Conclusion

This chapter reviewed the preliminary chronological framework as set forward in § 13.2 and § 13.3, and used as a basis for the analyses in Chapt. 13–16. The relative and absolute chronology discussed in § 17.2 and § 17.3 – together with the results of these analyses – seemed to back the assumption that three alluvial terraces (I, II and III) were progressively occupied, and that new grave types were successively introduced in the order A–B–C–D–E, albeit with substantial overlap. As a result, reviewing the chronological framework not only validated it as a basis for assessing variability in burial practices, but also helped identifying further patterns of (dis)continuity at Yanghai, while also exposing some flaws.

Apart from more fundamental issues related to radiocarbon wiggles, contamination and exchange of samples, resulting in unreliable or imprecise dates, multiple depositions into the same grave further complicated dating. Since radiocarbon dates were used – next to cross-dating – to support typo-chronologies, the latter suffered from the same drawbacks.

As discussed in § 17.2, the relative chronology of Terrace I and (the great majority of) Terrace II, as well as of grave types A, B and C, hardly supports the existence of sharply delineated phases presented in the typo-chronology of the Report (Fig. 17.1). As further discussed in § 17.3, radiocarbon data hardly provided arguments supporting a chronological differentiation between terraces I and II on the one hand, and grave types A, B and C on the other, as also reflected in the timeline (251, Fig. 17.11).

While continuity between Terrace I and II, as well as between grave types A, B and C on these terraces, was also highlighted by stability in grave and body orientation (§ 13.4 and § 14.3), WL-ratio of the shaft mouth (§ 13.5), animal sacrifice (Chapt. 15) and grave goods (Chapt. 16) to some degree, variables such as body posture (197 ff.), and practice of burying horse tack (§ 16.4), nonetheless indicated a certain degree of discontinuity and chronological differentiation.

The fact that Type C graves occur in all terrace phases was problematic when assessing change in burial practice on the basis of grave typology (A–E) only, and therefore the location of the grave was an indispensable variable to be considered in all analyses. Furthermore, Type C graves on terraces I, II and III, cannot *a priori* be seen as belonging to the same burial tradition. Some variables assessed in Part III, like the WL-ratio of the entry shaft (§ 13.5), proved to be particularly helpful in fine-tuning the chronology of Type

## C.

Discontinuity was best evidenced by the burial traditions from Terrace III, mainly represented by C and D graves, which indicated a clear break with previous customs despite elements of continuity. This is illustrated by the timeline which shows that all graves on Terrace III, as well as all niche graves, have radiocarbon dates younger than 2350 BP (Fig. 17.11). The same applies for the grave goods found in here, including fully developed complex bows with recurve, quiver hooks, wooden rectangular belt plaques, along with the occasional presence of double niche graves, wheel-thrown pottery, cotton, and Chinese inscriptions (see Tab. 17.3, graves IIM5, IIM18, IIM11, IIM76 and IIM80).

To conclude, the cemetery of Yanghai shows a long and continuous chronology from c. 1200 BCE to at least c. 200 CE. However, a clear break is visible around c. 200 BCE, even though some continuity was observed too in the grave goods, e.g. between the stem cups and ripple ware present in the niche graves from Terrace II and those of Terrace III (243), as well as in other variables (Chapt. 18). The assumption that double niche grave IIM76 and associated grave goods like wheel-thrown pots, cotton, Chinese inscriptions, and by extension also *erbe* cups postdate the cemetery *sensu strictu*, is only supported through cross dating with another double niche grave north of Terrace I dated on the basis of a more complex inscription to 433 c. CE (173), and analogies in the southern Tarim Basin (245), but this is not supported by radiocarbon dating.



# 18 Interpretation and evaluation of the results

Part III analysed mortuary variability at Yanghai in order 1) to expose patterns of (dis)continuity in burial practices after the emergence of lateral niche grave practices to understand whether this was an autochthonous or allochthonous influence (the latter as a result of acculturation and/or migration), and further 2) to explore the identity or *social persona* of the niche grave occupants as explained in § 3.1.

The analyses were based on 518 excavated graves (or 519 when Type E was included) out of a total of an estimated 3000 graves. Over 5300 entries were fed into a specially designed database and analysed using the methodology described in Chapt. 3.

As argued in § 13.3, the raw radiocarbon dates provided a workable basis to assume an expansion of the cemetery from Terrace I, over Terrace II towards Terrace III, and a successive introduction of the grave types A–E. This preliminary chronological framework was used as a workable basis to assess a fivefold parameter set, related to grave architecture (Chapt. 13), human remains (Chapt. 14), animal remains (Chapt. 15), grave goods (Chapt. 16), and chronology (Chapt. 17).

The first parameter set concerned grave architecture (Chapt. 13) and analysed grave orientation (§ 13.4), WL-ratio of the grave shaft (§ 13.5) and variability in niche grave structure (§ 13.6). Surface structure was not considered here, but in Chapt. 21 from a comparative perspective rather than site perspective.

Assessing grave orientation (§ 13.4) appeared to be a powerful parameter, and had the strong advantage over body orientation that all graves could be assessed, not just those with human remains in which the orientation of the head was known. Grave orientation remained almost unchanged in grave types A, B and C, while an abrupt change was observed with the appearance of grave Type D. While the former favoured an orientation along the EE/WW, followed by the SE/NW axis, the latter still favoured the EE/WW, but the newly

and unprecedented NE/SW orientation almost gained equal importance (185, Tab. 13.4).

The WL-ratio of the shaft mouth could also be determined for all the excavated graves. The various plots and contingency tables in § 13.5 demonstrated an unexpected high degree of continuity between the structure of Type C and D graves on Terrace III, with both types largely falling into the category ‘Narrowest’ ( $\leq 0.5075$ ). This parameter was particularly useful to differentiate Type C practices, a grave type common in all terrace phases. Further plotting also showed that there was no relation between the minimum number of individuals (MNI) buried in the grave and the WL-ratio.

Assessing variability in niche grave architecture itself (§ 13.6), such as the presence or absence of side-ledges, a feature with chronological significance in the middle Yili Basin according to Akishev and Kushayev (15, Fig. 2.2), did not reveal very significant patterns for Yanghai. A weak preference in grave orientation along the NE-SW (possibly corresponding with the more innovative NE body orientation) for niche graves with ledges, arguably indicates a later date. The assessment of satellite pits, another architectural feature, was done in relation to animal sacrifice (§ 15.4).

The second parameter set concerned human remains (Chapt. 14) and analysed body treatment and posture (§ 14.2), body orientation (§ 14.3), mixed body postures and orientations (§ 14.4), single, double and multiple burial practices (§ 14.5), and biological variability (§ 14.6). A maximum MNI of 755 human individuals was assessed.

Secondary burial rituals may have played an important role at Yanghai, but its significance could not be assessed within the already ambitious scope of the present research (195). The design of the grave architecture with a relatively empty shaft (i.e. only part was backfilled), along with the high frequency of disturbed primary burials, suggest that burial often involved multiple depositions at various time slots within the same graves. This, together with frequent looting, resulted in a high degree of disturbed skeletal material. It was calculated that the body posture of only 35.4% or 267 out of a total MNI of 755 individuals was known (196, Tab. 14.1).

Analysis of body posture (§ 14.2) indicated that location in the cemetery or terrace phase and grave type were decisive factors in the choice of the latter. Tab. 14.3 (198) shows a development from ‘flexed on the side’ prevailing in Type A and Type B on Terrace I, to ‘flexed on the back’ prevailing in Type C on Terrace I and II, and finally ‘extended on the back’ prevailing in Type C and Type D on Terrace III. Some degree of overlap existed between these categories. The fact that a minority of Type C grave occupants was still buried in their traditional ‘flexed on the back’ posture, shows a certain degree of continuity

with their predecessors on Terrace II. That changes in posture represented more than just a chronological development and also referred to group identity is suggested by the persistence of some of the more archaic posture into later phases. Finally, analysis of body posture also demonstrated that changes in the latter predicted the advent of innovative grave types in which this postures became the majority practice (197).

Body orientation (§ 14.3) proved to be one of the most rewarding variables to study at Yanghai. Tab. 14.5 (202) showed that a long and stable tradition of body orientation towards the EE, followed by the SE, came abruptly to an end with the appearance of niche graves. While the former was common in grave types A, B and C, the new NE body orientation was almost exclusively reserved for Type D occupants, especially on Terrace III. About a third of the Type D occupants nevertheless followed the EE orientation, but they gave up altogether on the SE orientation. Further noteworthy is the sudden importance of WW body orientation in Type C, accounting for over half of the known body orientations in this grave type, or a fourth of the total known body orientations, on Terrace III.

The analysis of body orientation showed a discrepancy with the analysis of grave orientation (185, Tab. 13.4), suggesting that the orientation along the EE/WW axis was slightly more important than that along the NE/SW axis in Type D, rather than vice versa. The reason for this apparent contradiction is threefold. Firstly, terrace phase was not considered in the analysis of grave orientation. Secondly, while the advantage of body orientation over grave orientation is that directionality of the body can be assessed, the disadvantage is that the former only includes known body postures which results in a smaller sample size than the latter which includes all the graves. Thirdly, as the EE/WW grave orientation merges both the EE and WW body orientations into one, we get a distorted image.

The assessment of body orientation relative to body posture (203, Tab. 14.6) provided another perspective on the same data. The older postures of 'flexed on the side' and 'flexed on the back' followed the EE (SE) orientation, while virtually only extended burials were oriented towards the NE, even when a third of them was oriented toward the EE, though none of them towards the SE.

The four graves with mixed body postures and mixed orientations at Yanghai (§ 14.4) are an interesting phenomenon. All concerned Type C graves located on terraces I, II and III. Three of the four graves are two-layered shaft graves, and possibly this design was a solution to accommodate people who were related but had different beliefs or identities. These graves also included woman and children. This, together with the relatively high occurrence of the otherwise rare body orientation towards the WW, and the rich animal assemblage sometimes

accompanying them (223), indicate a special status ascribed to the grave occupants. How this status was obtained needs further investigation (214).

The most convincing arguments for continuity in single, double and multiple burial practices (§ 14.5), can be found between Type C and Type D graves on Terrace III. Tabs. 14.10 and 14.11 (210) show that both equally favoured multiple burials, while double burial practices were more popular in Type D, and single burials more popular in Type C. The latter can be seen as a continuity with the Type C burials on Terrace II, where single burials represented more than half of the Type C population. It is possible that multiple burial practice was already encouraged in Type D burials on Terrace II, but as the Type D population is relatively small here (MNI=9), it is hard to draw any firm conclusions. In any case, multiple burials in *lateral* niche graves are a rare phenomenon in Inner Eurasia during the Early Iron Age (Part II), although they are known from Heigouliang in the eastern Tianshan mountains (105).

In § 14.6, I assessed evidence for biological variability in the Yanghai population. Non-metric dental analysis suffered from serious limitations, but indicated the Yanghai population between 2000 BCE and 200 CE mainly belonged the western Eurasian complex, with some regional features.<sup>1</sup> Based on morphological analysis of the skull, a marginal discontinuity was claimed from Terrace Phase III (c. 200 BCE and 200 CE) onward, though it is unclear whether this related to niche graves only or to all grave types.<sup>2</sup> In short, physical anthropological research did not suggest that a significant part of the yanghai population was replaced by newcomers between c. 200 BCE and 200 CE, the period when niche graves made their appearance. However, stable carbon and nitrogen isotope analysis of human bone collagen demonstrated a stronger reliance on animal protein in the diet after c. 200 BCE, which constitutes an element of discontinuity (213, see also further below).

The third parameter set concerned animal sacrifice (Chapt. 15). Tab. 15.1 (217) showed that on terraces I and II, roughly one third of the graves included animal sacrifice, while on Terrace III, this dropped to about a sixth. Furthermore, a more egalitarian distribution of animal sacrifice was observed for Terrace I and most of Terrace II, especially in grave types A, B, and in the great majority of Type C. The main animals sacrificed here were sheep and goat.

With the emergence of niche graves or Type D, there was a sharp decrease in the sacrifice of sheep and goat, while the sacrifice of – especially whole – horses was an innovation (219, Tab. 15.4; and 221, Tab. 15.6). The latter was almost exclusively restricted to niche

<sup>1</sup>Tulufan Diqu Wenwuju et al. forthcoming, 99–128.

<sup>2</sup>Tulufan Diqu Wenwuju et al. forthcoming, Chapt. IV, 421.

grave occupants, and showed a bias towards males buried singly (225, Tab. 15.8). Satellite pits were designed to accommodate the horse burials. While Type C grave occupants occasionally enjoyed horse sacrifice on terraces II and III (with one instance of whole horse sacrifice on Terrace II), most of those who enjoyed animal sacrifice were still buried with sheep and goat. This was exactly the opposite in Type D, where whole horse sacrifice was much more common on both Terrace II and III (221, Tab. 15.6). Finally, a shift in preference took place from burying horses in satellite pits on Terrace II, to burying them in the entry shaft on Terrace III, even though the former did not disappear (222, Tab. 15.7).

The fourth parameter concerned grave goods (Chapt. 16), and more particularly pottery (§ 16.2), metal objects (§ 16.3), and horse tack (§ 16.4). Analysis here showed a disappearance of unpainted pottery – with the exception of one piece in a Type C grave – on Terrace III (229–229, Tabs. 16.4 and 16.3). Furthermore, the average amount of pottery per grave increased on Terrace III, and showed that sedentism remained important after the appearance of niche graves (229, Tab. 16.1). No differential access to specific metal types was observed between shaft graves and niche graves occupants.

Analysis of metal objects showed an increase in iron objects at the expense of bronze over the three terrace phase (230, Tab. 16.5) Iron only occurs in one Type B grave (as a composite iron-bronze item), and for the rest predominantly in Type C and D graves (232, Tab. 16.7). There was no differential access to iron between grave types C and D on Terrace III (231, Tab. 16.6)

Analysis of individual object types in § 16.4 further exposed the paradox that, despite their interest in burying (whole) horses, niche grave users took little interest in burying horse tack. The same was true for Type C burials. While horse riding or at least horse sacrificial was central to the niche grave elite, it was not so with the ritual of burying horse tack. In this, they differed entirely from Type B occupants, where 38.3% of the graves included horse tack (233, Tab. 16.9).

In Chapt. 17, I re-assessed the preliminary chronological framework set out at the beginning, based on grave typology (§ 13.2) and spatial distribution of the graves (§ 13.3), in the light of these new analyses of internal data from Yanghai, and with reference to existing typo-chronological schemes as well as external data. This exposed some serious flaws in the chronological framework for Yanghai. As demonstrated in § 17.3, considerable reservation is needed with respect to radiocarbon dating. Two wiggles resulting from climatic fluctuations affect radiocarbon dating at c. 2500 BP respectively c. 2200 BP, corresponding with all actual ages of 750–350 cal. BC, respectively 350–150 cal. BC (247, Fig. 17.10).

The latter is precisely the trajectory in which niche graves emerged. Furthermore, next to human errors during sampling, we also have to consider that the generated BP dates only give a *post quem* for one deposition in the graves, which were often frequently re-opened to add bodies of different generations.

In general, Chapt. 17 confirmed the ‘wandering’ of the cemetery successively occupying terraces I, II and III, while at the same time highlighting the strong continuity and overlap between between terraces I and II, and graves types A, B and C on these terraces, as well as the break with Terrace III and Type D (the niche graves) in particular (251, Fig. 17.11).

In conclusion, assessment of the fivefold parameter set discussed above lead to the following conclusions about continuity and discontinuity between shaft (type C) and niche graves (Type D).

In general, a strong discontinuity could be observed between Cemetery II and III, based on the physical isolation, the relatively sudden popularity and diagnostic architecture of niche graves, the abrupt change in grave and body orientation, the break in the sequence with AMS dates, the extended body posture, the disappearance of painted pottery, the increase of iron objects, the strong decrease of burying horse tack, the increasing popularity of the more elitist horse sacrifice – first in satellite pits and then in the entry shaft – at the expense of the more egalitarian sheep and goat sacrifice. A minimal continuity in body posture (flexed on the back) and sacrifice of ovicaprids between the shaft grave occupants of Yanghai II and III suggested a weak link between the two (219–198).

On Terrace III, continuity between Type C and D graves is suggested by a relatively strong biological continuity and a shared preference for double and multiple burial practices in both types. The unusual popularity of double burial in Type D is noteworthy though. The similarity in WL-ratios of both Type C and D graves on Cemetery III is the strongest argument for continuity between the two. This, together with the side-by-side distribution of Type C and D graves, suggest that the occupation of Terrace III was a joint-venture of both shaft and niche grave practitioners.

On Terrace II, a small niche grave elite had occupied an isolated corner of the cemetery, while the occupation of Terrace III was a common undertaking together with shaft grave users. However, even if niche graves were now distributed side-by-side with shaft graves, Terrace III clearly provided evidence for a difference in status and ideology or affiliation between the two. This was not only manifested in the addition of a niche to the grave shaft, but also in the abrupt and innovative NE body orientation, as well as in whole horse burial, first predominantly deposited in satellite pits and later in the entry shaft.

In summary, the strong discontinuity right after niche graves were introduced at the end of Terrace Phase II, suggests we deal with an intrusive elite disrupting local burial practices, perhaps resulting from small-scale migration into the area. This would also explain the small though noticeable increase of biological discontinuity. The continuity between shaft and niche grave practices on Terrace III, on the other hand, suggest a steady integration of new with old burial rituals, and thus progressive adoption by new burial practices by the local population.

In the light of socio-economic developments discussed in § 1.4, some final observations can be made about the *social persona* of the niche grave users from Yanghai.

Throughout its three terrace phases, the Yanghai community relied predominantly on pastoralism, as suggested by animal remains (Chapt. 15) and horse tack (§ 16.4). In general, the Yanghai people relied primarily on goat, sheep, horse, and probably also some degree of cattle breeding, next to hunting, while crop farming was rather insignificant (216). Grave goods such as residues and objects related to dairy products, walking sticks related to herding activities, objects made of animal bone, hides, intestines and woollen textiles, next to evidence from the unexcavated settlement, could not be analysed here, but would complement our understanding of subsistence activities at Yanghai (227).

Horseback riding was quite developed at Yanghai, as evidenced from horse tack (§ 16.4), horse remains (Chapt. 15) and trousers. The earliest pair of woollen trousers comes from Yanghai and is radiocarbon dated  $2935 \pm 30$  BP or between 1212–1056 ( $1 \sigma$  or 68.2%) cal. BC and 1261 ( $2 \sigma$  or 95.4%) cal. BC (250, Tab. 17.2).<sup>3</sup>

It is particularly interesting that another pair of trousers along with bridle and wooden cheekpieces were found in association with Bronze Age Karasuk-type objects as curved loop handled knives and tubular socket axes from Yanghai, in combination with Type A graves and flexed body posture on the side (239, Fig. 17.4). Such evidence of horseback riding predates the bronze horse bits with double stirrup-shaped apertures dated 8<sup>th</sup> c. BCE in analogy with samples from Arzhan in southern Siberia (240).

With the emergence of niche graves at Yanghai from c. 200 onward, whole horse sacrifice (Chapt. 15) next to the sudden increase in animal protein (§ 14.6) suggest access to larger herds. Though hard to prove archaeologically, this could have been obtained through smarter ways of herding like mounted pastoralism and/or through confiscating livestock from other communities during mounted warfare. Maintaining increasing livestock assets and especially horses, required seasonal movement from the Turfan Oasis into the cen-

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<sup>3</sup>Kramell et al. 2014; see also Beck et al. 2014.

tral Tianshan mountains or Bogda foothills to access the vast grasslands. Such vertical transhumance in combination with mounted pastoralism still exists today (§ 1.4). That it existed in Yanghai too, is supported by its developed horse riding tradition, the presence of large stretches of summer pasture in the mountains (not accessible during winter), and similarities in material culture between the Turfan Basin and those mountain areas (§ 8.4).

Despite the prominence of pastoralist activities, the (unexcavated) settlement of Yanghai suggests sedentism was important too. This was not unusual for pastoralist communities in Inner Asia after c. 200 BCE (7). Subsistence activities were probably shared based on gender and age. Part of the community could have engaged in household activities, limited crop herding, the production of dairy food, woollen textile manufacturing or specialised crafts like pottery, wood or leather-working in the settlement, while others specialised in mounted herding.

Shooting equipment and composite bows from Yanghai suggest they had a long and developed tradition of shooting (237, Fig. 17.1). Improved shooting technologies including fully developed composite bows introduced from the Hexi corridor, Ordos or beyond, (244, Fig. 17.8, 16–18) could have promoted mounted hunting, defending livestock during mounted herding, and mounted warfare skills from 200 BCE onward. That horses were already used in battle during Terrace Phase II is suggested by a leather saddle harness (242, Fig. 17.7, IIM27:11).

Horse riders could attend larger herds, cross wider distances, and engage in warfare as mounted archers (§ 1.4). Through such mobility and shooting skills, these horse riders could accumulate status and interact frequently with neighbouring pastoralist communities. That horse sacrifice was almost exclusively found in association with niche grave occupants, mostly males (225, Tab. 15.8), demonstrates that such status was a privilege of the latter. Lateral niche grave elites from Yanghai may thus have played a role as mounted archers in the increasing military conflicts in the region after c. 200 BCE.

In sum, the Yanghai community were sedentary pastoralists practising vertical transhumance, benefitting from a long tradition of horse riding and bow shooting, and easily employable in battle as mounted archers after c. 200 BCE. Against the background of discussions on horse riding, mobility, migration and cultural change (§ 2.7 and § 1.4), and analyses at the regional level (Part. IV), I will come back to the relevance of these in my final conclusions (§ 28.3, Chapt. 29).



## Part IV

# The Turfan Basin, Comparative Analysis

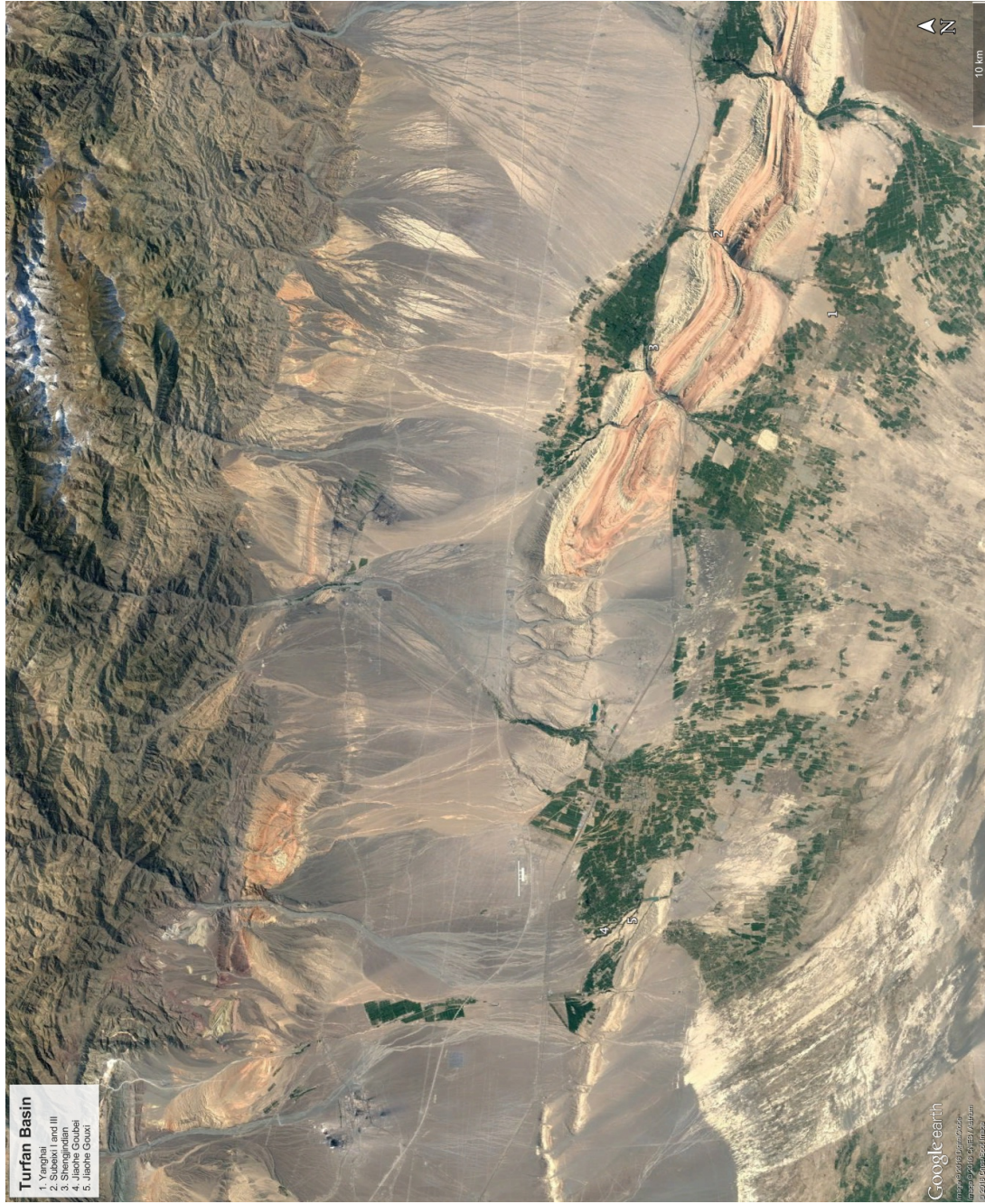
# 19 Introduction

Part IV placed the analyses at the site level (Part III) into a regional perspective, by comparing them with other sites in the Turfan Basin. Roughly the same fivefold set of parameters was used. Collecting consistent data was particularly challenging, due to incomplete and inconsistent reporting of the sites under comparison.

After outlining the comparative framework (Chapt. 20), grave architecture (Chapt. 21), human remains (Chapt. 22), animal remains (Chapt. 23), and grave goods (Chapt. 24) were assessed and compared. These analyses addressed the same questions as at the site level (Chapt. 11), and aimed at understanding how niche grave practices were adopted and integrated, whether the practice was wide-spread and niche grave occupants enjoyed a certain status.

The Turfan Basin is bound by the Tianshan in the west, Bogda in the north, and the Jueluotage Mountains in the south. The basin is located c. 150 meters below sea level and it has a concentric build-up with mountains at the outside, then gravel desert ground and finally loess at its centre. The area has a desert climate with an annual rainfall of c. 16 mm. Melting water from the Bogda mountains generates seasonal streams of which many once flowed into the now largely dried up Lake Ayding to the south. Some streams have cut the sandstone hills of the Huoyan Mountains, situated parallel to Bogda Mountains, into deep canyons. Yanghai is located at the outlet of one of these streams, the Tuyugou (Fig. 19.1).

The Turfan Basin is connected in all directions through various passageways. The Baiyang river valley lead to the northern slopes of the Tianshan mountains, and from there the steppe and semi-desert of the Dzungarian Basin and the Altai Mountains. Proceeding westward via the Alagou valley, led to the vast pastures of Bayinbuluke in the upper Kaidu basin and strategically important areas near lake Boston, as reflected in the site cluster of Chawuhugou, or to the northern rim of the Tarim Basin. Alternatively, the Yili Basin could be reached via the northern slopes of the Tianshan. Finally, when crossing the Kuruk Tag, it was possible to continue to the northern rim of the Tarim Basin and further on to the Lop Nur, or alternatively to the southern Tarim Basin (Fig. 20.1).



**Figure 19.1** – Satellite map with location of burial sites used in the analyses in parts III and IV.

# 20 Comparative framework

## 20.1 Introduction

Four key sites were selected for comparison based on the presence of early niche graves and availability of documented material: Subeixi, Jiaohe Goubei, Jiaohe Gouxi and Shengjindian (Figs. 19.1 and 20.1). This section discusses their chronology (§ 20.2), setting in the landscape (§ 20.3), and distribution of niche graves within these sites (§ 20.4). A maximum of 669 graves was analysed, including 519 excavated graves from Yanghai (Yanghai I = 218, Yanghai II = 223, Yanghai III = 78, including the double niche grave IIIM76).<sup>1</sup>

For Subeixi, 43 graves were assessed (Subeixi I = 13/52 (39 are looted, though the grave type of 22 of these could nonetheless be determined, see Tab. 20.2), Subeixi III = 30/30).<sup>2</sup> For Shengjindian 29/29 graves were assessed (M7 could not be confirmed as being a grave and was excluded from the analyses).<sup>3</sup> For Jiaohe Goubei, 55 graves were assessed (M16–1 and M16–2 are counted as two separate graves although they belong to the same grave complex M16 and are located underneath the same mound).<sup>4</sup> No estimates are given for the whole cemetery, but from the plan drawing, it was deduced that more than half of the graves were excavated (287, Fig. 20.6). For Jiaohe Gouxi, 23 graves were assessed, including only the early graves at this site, which do not feature a passageway and which are dated no later than the 3<sup>rd</sup> c. CE.<sup>5</sup> No estimate is known for the total number of graves belonging to the early period at this site.

These four sites yielded an extra 150 graves for comparative analysis. The results were compared with the analyses carried out on the 519 graves of Yanghai.

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<sup>1</sup>See references in Part III.

<sup>2</sup>Tulufan Diqu Wenguansuo 1984; Tulufan Diqu Wenguansuo 1988; Xinjiang Wenwu Kaogu Yanjiusuo et al. 1993; Xinjiang Wenwu Kaogu Yanjiusuo et al. 1994b; Lü Enguo 1999; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002.

<sup>3</sup>Tulufanxue yanjiuyuan 2013.

<sup>4</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1996; Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998.

<sup>5</sup>Wang Binghua 2001; Tulufan Diqu Wenwuju 2006.

## 20.2 Chronology

The sites under comparison here, i.e. Subeixi I and III, Jiaohe Goubei, the early phase of Jiaohe Gouxu and Shengjindian, have all been attributed to the Subeixi culture.<sup>6</sup> The latter is named after the type site Subeixi and distributed in the Turfan Basin, the northern slopes of Bogda and the central Tianshan Mountains.

There is no agreement on the chronology and scope of the Subeixi culture and its content is very varied.<sup>7</sup> This archaeological culture should therefore be better understood as a collection of pre- and protohistoric cultures, which only have in common that their remains were found in the Turfan Basin and adjacent mountains areas.

Lü Enguo used a more restricted definition of the Subeixi culture, dated 6<sup>th</sup> c. BCE–2<sup>nd</sup> c. CE. He considered Yanghai, Kakeqiake, Aidinghu and Alagou as slightly earlier than Subeixi, while Jiaohe Goubei and Jiaohe Gouxu as slightly later, but all these sites, including Subeixi and Sangeqiao, were seen as the core of the Subeixi culture.<sup>8</sup> However, the variety in the material culture of Yanghai (§ 17.2), questions the validity of such archaeological entities as the ‘Subeixi culture’ as a heuristic device.

Niche graves were only found at Subeixi, Yanghai, Jiaohe Goubei and Gouxu, and at Shengjindian, also attributed to the Subeixi culture. Sangeqiao has only one niche grave and is less well documented. Except for the latter, all these sites were used in the analysis.

Apart from the ambiguous attribution to the Subeixi culture, it is further problematic that very few radiocarbon dates are available for these sites. This, together with the large standard deviations of these dates, the (long-lived) wood samples, and the radiocarbon wiggles discussed earlier (Fig. 17.10), implies the dates are of limited use (Tab. 20.1).

Furthermore, the relative chronology of the Subeixi cluster is not well understood. This cluster exists of three cemeteries (I–III), and a settlement with mud brick house foundations, pottery workshops and livestock enclosures. Except from Cemetery II, which was only surveyed due to heavy damage, excavations were undertaken at Cemetery I in 1980 (M1–M8) and in 1992 (M9–M13), and at Cemetery III in 1992.<sup>9</sup>

<sup>6</sup>Chen Ge 2001, 153–171.

<sup>7</sup>See for example Han Jianye 2007b, 57–66; Guo Wu 2012, 57–107, esp. 106, Tab. 2–3; this culture is also labelled ‘Subashi Type’, ‘Former Cheshi culture’ in Lü Enguo 1999, 386; ‘Gushi culture’ in Xinjiang Weiwu’er Zizhiqu Bowuguan et al. 1982, 372; and ‘Aidinghu culture’ in Mei 2000, 19.

<sup>8</sup>Lü Enguo 1999, 384–386.

<sup>9</sup>Tulufan Diqu Wenguansuo 1984; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002; Tulufan Diqu Wenguansuo 1988; see further also Lü Enguo 1999.

Site	Feature	Sample	Chronology		Ref.
Subeixi I	M8		(3145±75 uncal. BP)	3335±145 cal. BP	1)
Subeixi I	M3		2225±70 uncal. BP	2220±85 cal. BP	1)
Subeixi I	M13	Leg of wooden corpse bed	2395±80 uncal. BP	2420±90 cal. BP	1)
Subeixi III	M15	Cover wood of shaft mouth	2280±80 uncal. BP	2285±90 cal. BP	1)
Subeixi III	M15	Corpse bed bottom shaft	2480±85 uncal. BP	2520±95 cal. BP	1)
Subeixi III	F1	Wooden sticks inside house	2310±85 uncal. BP	2320±95 cal. BP	1)
Jiaohe Goubei	M16		2154±52 BP	178 cal. BC–36 cal. AD	2)
Jiaohe Goubei	M01		(1594±61 BP)	(431–602 cal. AD)	2)
Jiaohe Gouxu	M6	Wood	1713–1868 BP	82–237 cal. AD	3)
Jiaohe Gouxu	M7	Wood	1709–1865 BP	85–241 cal. AD	3)
Shengjindian	?		2200–2050 BP	Western Han	4)

**Table 20.1** – Radiocarbon dating for Subeixi I and III, the Early Phase of Jiaohe Gouxu, and Shengjindian (After 1) ‘Subeixi fajue de zhuyao shouhuo’, 384; 2) Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998, 71; 3) Wang Binghua 2001, 43; and 4) Tulufanxue yanjiuyuan 2013, 52).

By the time Subeixi Cemetery I was excavated, two phases were distinguished.<sup>10</sup> The differences were only formulated much later, following new excavations. It was claimed the early phase was best represented by the settlement and Cemetery III, and the late phase by Cemetery I, with some overlap between the two evidenced by similar pottery. The early phase featured a common presence of painted pottery and virtual absence of iron objects, while unpainted red ware and a common presence of iron characterised the late phase. Based on similarities in shooting equipment including three-winged arrowheads, and saddles similar to samples from the Altai during the Pazyryk period, and depictions from Noin Ula in the upper Selenga Basin in Mongolia (241), next to radiocarbon dates (except for M8 which is considered too early, see Tab. 20.1), Cemetery I of Subeixi was dated c. 400–200 BCE.<sup>11</sup>

It was claimed that shaft graves were diagnostic for the early phase, and niche graves for the later phase of Subeixi.<sup>12</sup> However, while it is true that niche graves appear later than shaft graves, I would argue that it is more correct to say that the *co-existence* with niche graves (or absence of this) is indicative of the chronology of shaft graves in the Turfan Basin. We could thus assume that in Cemetery III, with only 1 niche grave (IIIM25) next to 29 shaft graves, is earlier than Cemetery I, where there are 13 niche graves and 22 shaft graves. However, the single niche grave and probably part of the remains of Subeixi III were probably contemporaneous with the niche graves of Subeixi I (see 323).

<sup>10</sup>Tulufan Diqu Wenguansuo 1984, 48–49.

<sup>11</sup>Lü Enguo 1999, 383–384.

<sup>12</sup>Lü Enguo 1999, 283.

In general, I would thus agree that the cemetery of Subeixi III, together with the adjacent settlement, largely dates c. 400–200 BCE, but that part of its remains are contemporary with Subeixi I (see § 24.3). Because of the co-existence of shaft and niche graves, I would further claim that Subeixi I is contemporary with the earliest remains of Jiaohe Goubei, the late terrace phase II and early terrace phase III at Yanghai, and therefore dated 200 BCE–200 CE. This is later than what Lü Enguo claimed (see above).

Jiaohe Goubei shares many features with Yanghai, Subeixi I, and other sites attributed to the Subeixi culture, like Aiding and Kakeqiake (these two do not have niche graves).<sup>13</sup> Based on the radiocarbon dates shown in Tab. 20.1 – apart from M01, which gives a relatively late and probably unreliable date – and similarities with the sites just mentioned, Jiaohe Goubei was considered contemporary with the Han Dynasty (206 BCE–220 CE).

The early phase of Jiaohe Gouxu was, based on radiocarbon dating, a bronze mirror and *wuzhu* coins, considered contemporary with the Han (206 BCE–220 CE), Wei (220–265 CE) and Western Jin (265–316 CE).<sup>14</sup> The shaft and niche graves of this phase were thus dated c. 200 BCE–300 CE. The group of niche graves and chamber graves with sloping passageways postdating c. 300 CE is not included in the analysis.

Shengjindian is considered contemporary with the Western Han (206 BCE–23 CE), based on similarities with other sites of the Subeixi culture and one radiocarbon date (Tab. 20.1).<sup>15</sup> As discussed in § 24.5, I opt for a later upper bound.

Some of the chronological issues of the sites just mentioned can be complemented thanks to recent excavations and radiocarbon dates from Yanghai, which is the best chronological reference currently available for pre- and protohistoric remains in the Turfan Basin. In Chapt. 24, I further tried to fine-tune the chronologies of the sites under comparison based on grave goods and cross dating with Yanghai and other sites.

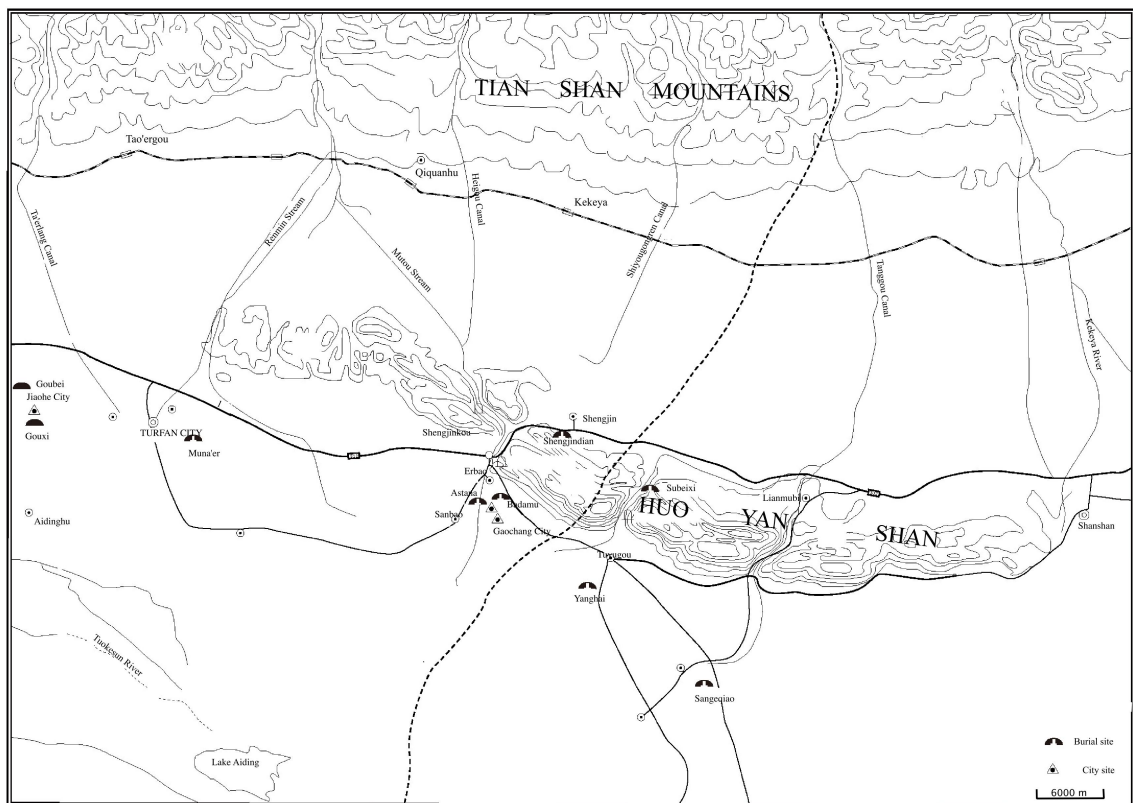
<sup>13</sup>Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998, 71.

<sup>14</sup>Wang Binghua 2001, 42–43.

<sup>15</sup>Tulufanxue yanjiuyuan 2013, 51–52.

## 20.3 Distribution and setting in the landscape

The Huoyan Shan range is c. 100 km long from west to east, the highest peak reaching 851 m. Through time, the Mutougou, Tuyugou and Se'erkepegou streams, fed by glaciers and snowmelt from the Tianshan Mountains, cut the range transversally into three parts. At the places where the streams enter and leave the mountain, oases have sprang up, enabling crop-farming and herding. Several of the sites discussed here are located near the in- and outlets of these streams and the canyons they created (Figs. 20.1 and 19.1).



**Figure 20.1** – Map of the Turfan Basin with the burial sites discussed in this chapter (Adapted from Xinjiang Wenwu Kaogu Yanjiusuo 2016, Fig. 1).

Subeixi, meaning ‘head of the water’ is situated at the inlet of the Tuyugou, whereas Yanghai is situated at its outlet (Fig. 20.2). The Subeixi site cluster comprises one settlement and three cemeteries (I, II and III). The settlement overlooks the gorge from its western banks from a height of about 50 m. To the west, a stream channel running north of Cemetery III splits into a northern and a southern branch and embraces the settlement before it pours into the Tuyugou. The settlement thus forms an island of more than 4000 m<sup>2</sup> surrounded from all sides by steep cliffs. Cemetery III is located 180 m northeast of the settlement, while Cemetery I is located 600 m north of it. Because of their proximity



and overlap (esp. pottery), both Subeixi I and III are considered one entity in the analysis, acknowledging that the former may be younger than the latter.



**Figure 20.2** – View of Subeixi Cemetery I (Photograph by the author).

The settlement of Yanghai is situated south of its cemeteries, similar to that of Subeixi, but its location in the deltaic oasis near the outlet of the Tuyugou clearly differs from the latter (Fig. 12.2). The Shengjindian cemetery is situated against a northern foothill of the Huoyanshan Mountains near the inlet of the Mutougou stream, overlooking the oasis plain (Fig. 20.3). The slightly later cemeteries of Astana and Badamu as well of the old city of Gaochang, which are briefly mentioned in this chapter, are located at a certain distance of the outlet of the same stream (Figs. 20.1 and 19.1).

The city site of Jiaohe and the cemeteries Goubei and Gouxu, are situated west of the Huoyanshan range. They are located on steep alluvial terraces shaped into ‘islands’ by progressive erosion of stream channels (Fig. 20.4). From here, one could travel westwards entering the Alagou valley of the central Tianshan Mountains, or turn north(west)ward crossing Bogda mountains. No decisive evidence has yet been found inside the ruins of Jiaohe city confirming chronological overlap between its earliest occupation phase and the cemeteries Goubei and (early) Gouxu.



**Figure 20.3** – View of the Shengjindian cemetery (Photograph by the author).



**Figure 20.4** – View from the Jiahe Goubei cemetery (Photograph by the author).

In conclusion, the setting of Subeixi I and III, Jiaohe Goubei and Gouxu is similar. Their settlements and cemeteries are located on top of steep terraces rising several dozen meters above the surface overlooking the green canyons eroded by streams originating from the Tianshan. The settlements of Subeixi and Jiaohe no doubt profited from this strategic position. Moreover, the clayey soil could easily be cut into stable buildings or niche graves. Shengjindian was located against the foothills overlooking the oasis delta and conveniently situated along the route which saw the rise of many important sites including the city of Gaochang (Fig. 20.1).

The settlement of Yanghai showed a different setting a few kilometres south of the Huoyan Shan range. North of the settlement, graves were distributed over three terraces barely sticking out from the surrounding environment. The alluvial deltaic oasis, which once framed their setting, has now largely dried up but originally the boundaries of these alluvial terraces may have been more demarcated than is the case today (172, Fig. 12.1). As elsewhere in the Turfan Basin, the landscape is highly subject to aeolian erosion.

## 20.4 Distribution within the cemeteries

This section assessed the scope of niche grave versus other grave type practices at each site. Apart from Shengjindian and Subeixi III, estimations are based on partially excavated cemeteries and give only approximate indications.

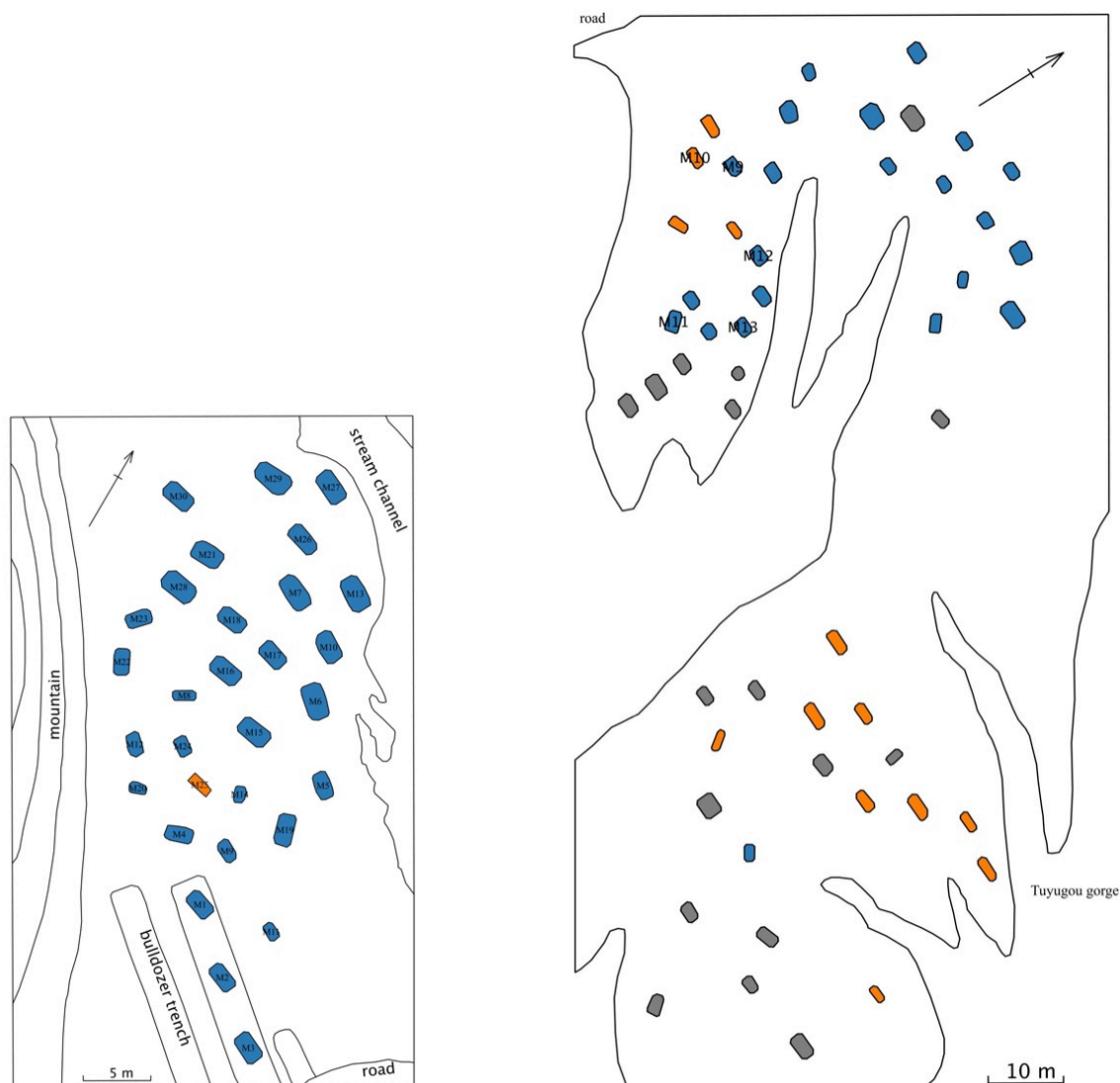
### Subeixi

At Subeixi III, located close to the settlement, all graves are excavated. Out of 30 excavated graves, only 1 (IIM25) is a Type D, while all the rest are Type C graves.

Subeixi I is only partly excavated (13 graves), but grave types could also be determined from the surface. At least one quarter are Type D graves (13/52), but are largely outnumbered by Type C graves (22/52), while one third is unknown (17/52) (Tab. 20.2). The graves are randomly distributed side-by-side, even though a weak clustering of Type D graves is visible in the southeast of the cemetery (Fig. 20.5).

	Type C	Type D	Unknown	Total
Subeixi III	29	1	0	30
Subeixi I	22	13	17	52

**Table 20.2** – Ratio of different grave types at Subeixi I and III.



**Figure 20.5** – Distribution grave types, Subeixi III (L), Subeixi I (R). ORANGE: Type D, BLUE: Type C, GREY: unknown. (Digitised and adapted from Xinjiang Wenwu Kaogu Yanjiusuo and Tulufan Diqu Bowuguan 2002, 46, Fig. 7; and 52, Fig. 15)

## Jiaohe Goubei

The cemetery of Jiaohe Goubei shows a hierarchical distribution pattern centring on two niche grave complexes M01 and M16, and perhaps – and perhaps a third unexcavated one. Except for M01 and M16, graves were not labelled with grave numbers on the site map in the report, so grave types could not be plotted on the digitised map (Fig. 20.6). I labelled the excavation trench in the southeast of the cemetery ‘TREX’.



**Figure 20.6** – Distribution of graves at Jiaohe Goubei. ORANGE: Type D/E; GREY: grave type unknown; BLACK: animal pits (Map digitised and adapted by author from Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998, 16, Fig. 11).

Type B	Type C	Type D	Type E	Total
2	40	12	1	55

**Table 20.3** – Different grave types at Jiaohe Goubei.

Type C represents the dominant grave type (40/55 graves). Only 12/55 are single niche graves of Type D. Despite this small share, it is significant that the two largest burial complexes of Jiaohe Goubei, M01 and M16, are centred on niche graves, showing the importance of this grave type. One of these complexes includes two graves underneath one mound: one with a single niche (M16–1) and another with a double niche (M16–2). Finally, there are 2 Type B graves, with respectively one and two side ledges (Tab. 20.3).

### Jiaohe Gouxi

The early phase of Jiaohe Gouxi yielded only 23 early graves for comparison (Tab. 20.4). About two thirds (15/23) are Type C while about one third are Type D graves (8/23).

Type C	Type D	Total
15	8	23

**Table 20.4** – Ratio of different grave types at Jiaohe Gouxi.



**Figure 20.7** – Distribution of different grave types at Jiaohe Gouxi (squares J VI-12 and J VII-16) in the Turfan Basin ORANGE: Type D; BLUE: TYPE C; (Map digitised and adapted from Wang Binghua 2001, Figs. 3 and 4).

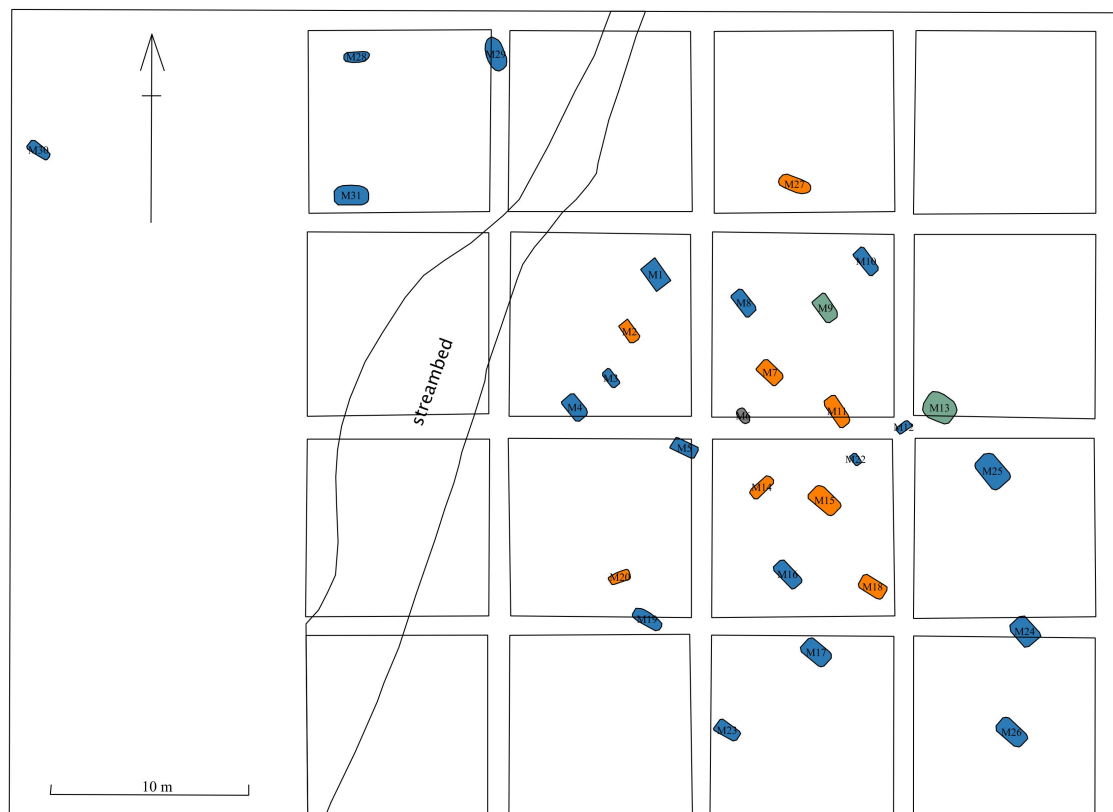
Despite the small and seemingly insignificant sample of Jiaohe Gouxi, it is relevant in understanding the last developments in the early niche grave population of the Turfan Basin.

## Shengjindian

At Shengjindian, all graves except a small shaft with an empty urn burial (M6) were included in the analyses. Out of 29 graves, the majority are Type C graves (19/29), a third Type D graves (7/29), with an occasional Type E grave (1/29) or Type B grave with two side-ledges (2/29) (Tab. 20.5).

Type B	Type C	Type D	Type E	Total
2	19	7	1	29

**Table 20.5** – Ratio of different grave types at Shengjindian.



**Figure 20.8** – Distribution of different grave types at Shengjindian (Map digitised and adapted from Tulufanxue Yanjiuyuan 2013, 30).

The sample of Shengjindian is rather small, but since all the graves of the cemetery are excavated, we get a complete picture.

## 20.5 Conclusion

An initial review of the chronology in § 20.2, suggested that all sites under comparison, i.e. Subeixi I, Jiaohe Goubai, the early phase of Jiaohe Gouxu and Shengjindian, are roughly contemporary with the late Terrace Phase II and Terrace Phase III of Yanghai, some remains being little later or contemporary with the double shaft grave (IIIM76) from Yanghai. The sites thus cover a period between 200 BCE and 300 CE with some remains postdating this period. Although I agree the settlement of Subeixi and part of its nearby cemetery Subeixi III can be dated c. 400–200 BCE, I suggested some of its remains including its only niche grave (IIIM25) may be contemporary to the niche graves of Subeixi I (280). This chronology will be further discussed in Chapt. 24.

§ 20.3 showed that Subeixi, Yanghai and Shengjindian are all distributed near the inlet or outlet of small streams or gorges cutting the Huoyanshan south of the Tianshan Mountains (Figs. 19.1 and 20.1). The sites of Jiaohe Goubai and Jiaohe Gouxu are located west of the Huoyanshan on highly elevated and strategic terraces. Apart from Shengjindian, all sites are located on alluvial terraces. There is currently no decisive evidence confirming chronological overlap between the Goubai and early Gouxu graves and the old city of Jiaohe, which would confirm a significant degree of sedentism of the latter. This would not be surprising, in analogy with the unexcavated settlement of Yanghai, which was probably contemporary with Terrace Phase III and thus also with the niche grave practices (174).

The grave type ratios from all four sites in § 20.4 show that nowhere niche graves were a majority practice, as at Yanghai. At Subeixi I, Jiaohe Goubai, Jiaohe Gouxu, and Shengjindian, niche graves (Type D) represented between a fourth or a third of all excavated graves, while shaft graves (Type C) represented a majority almost twice as popular. Type B graves were rare and even absent at Subeixi and Jiaohe Gouxu. There are only two examples of double niche graves (Type E), one at Jiaohe Goubai in the central grave of M16–2, and another at Shengjindian. Jiaohe Goubai and Shengjindian, and Terrace III of Yanghai, occasionally show Type B graves, indicating that this archaic grave type still survived after 200 BCE.

That niche graves only represented a minority at Subeixi, Shengjindian, and Jiaohe Gouxu, suggests its occupants were less influential, a thought which will be further developed below. Only Jiaohe Goubai proves the opposite: here, a minority of niche grave occupants had the privilege to build elaborate mounded niche graves with a significant number of animal pits and satellite graves. The latter are mostly shaft graves but some are niche



graves.

The random side-by-side distribution of shaft graves (Type C) and niche graves (Type D) at Subeixi I, Jiaohe Gouxu and Shengjindian resembles the distribution pattern on Terrace III at Yanghai (183, Fig. 13.4), suggesting the emergence of niche graves in the Turfan Basin was in all cases a ‘joint venture’ of niche grave and shaft grave practitioners. The hierarchical and linear distribution at Jiaohe Goubei was reminiscent to that of the niche grave complexes IIM47, IIM48 and IIM49 on Terrace II at Yanghai. The same is true for two larger grave complexes that lie just within the southeastern fringes of Terrace II excavated in 1988, but which are not documented (compare Fig. 20.6 with 182, Fig. 13.3).

# 21 Comparative analysis of the grave architecture

## 21.1 Introduction

This chapter analyses variability in niche grave architecture at the sites selected for comparison. Unfortunately, surface and subsurface structures were not always sufficiently recorded for all excavated graves. Therefore, a variable number of graves was used for the analysis and assessment of different features. I tried to cope with the bias in reporting by adjusting and streamlining the data for analysis wherever I could.

Apart from surface structure (§ 21.2), subsurface features such as grave orientation (§ 21.3) and niches (§ 21.4) and width-to-length ratio of the grave shaft (§ 21.5) were analysed. By comparing the results with those of Yanghai, it could be tested whether observations for the latter also held for Subeixi, Shengjindian, Jiaohe Goubei and Jiaohe Gouxi.

## 21.2 Surface structure

The presence, dimensions and construction materials of surface structures are generally badly documented, while such information helps establishing grave typologies. This problem existed when collecting literature on Inner Eurasia (Part II) including the Turfan Basin. Surface erosion and a lack of interest in ‘heaps of soil/stone’ affects proper recording. Analysing surface features is therefore challenging. Nevertheless, the presence of mounds itself has often been considered a diagnostic marker for the presence or movement of mobile pastoralists (66).

Due to severe wind erosion at Jiaohe Gouxi, grave mouths were exposed, so no surface structures could be investigated. Shengjindian too, suffered extensive surface erosion

together with a quick accumulation of eolian/alluvial deposits (284, Fig. 20.3). Such processes explain why local people immediately place stones or bricks on their backfilled graves, and the ancient Shengjindian community probably did the same to prevent exposure of the graves.

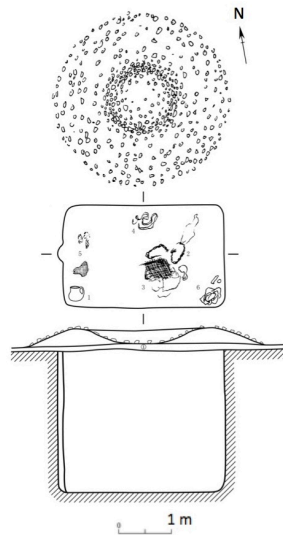
The conditions just mentioned left me with three sites to compare, i.e. Yanghai, Subeixi, and Jiaohou Goubei. Even here, information was incomplete. At Subeixi, surface structures were absent at Cemetery III but at Cemetery I most graves featured pebblestone mounds with a diameter of c. 3 x 2 m and a height of c. 0.20 m (283, Fig. 20.2).<sup>1</sup> *In situ* examination showed that the mounds are constructed of clayey, sandy soil mixed with grey or greenish limestone pebbles no larger than one can hold in one's hand.

Close to the Subeixi settlement, gravel or pebble layers are part of the natural stratigraphy of the generally sandy soil matrix (Fig. 21.1). Therefore, no great efforts were needed to construct mounds at Subeixi.



**Figure 21.1** – Natural stratigraphy of the soil near the settlement of Subeixi (Photograph by the author).

<sup>1</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002, 52; Lü Enguo 1999, 375–376.



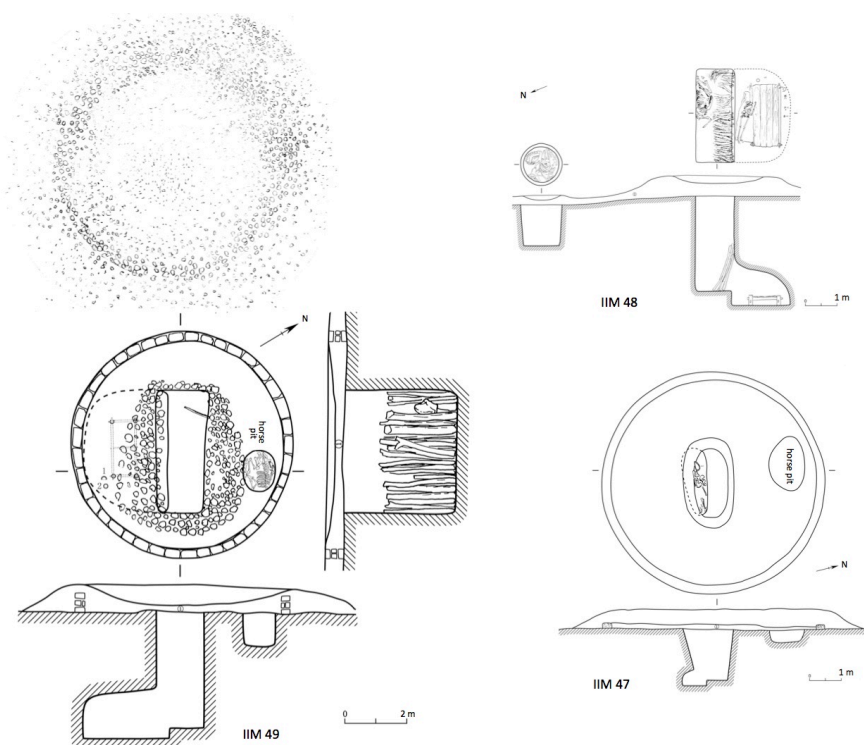
**Figure 21.2** – Grave IIM46, plan and section drawing, Yanghai. (After Xinjiang Wenwu Kaogu Yanjiusuo 2016, Fig. 472.)

At Yanghai, mounds are only recorded for graves IIM46, IIM47, IIM48 and IIM49 on Terrace II, though probably many more had mounds. The few documented examples include the mound of shaft grave IIM46, probably one of the earliest examples dated c. 500–200 BCE, with a diameter of 320 cm. The shaft was firstly covered with a small pebble heap, upon which the mound was constructed with stone and earth (Fig. 21.2). The appearance and the size resemble the mounds at Subeixi I.

The other three graves, IIM47, IIM48 and IIM49, all feature large mounds with a diameter of c. 10 m (Fig. 21.4). Both IIM47 and IIM49 have a mud brick ringwall embedded at the base of the mound, with a diameter of 6.90 respectively 7.20 m, and a remaining height of 0.15 respectively 0.60 m (Fig. 21.3). It is likely that at least two more graves excavated in 1988 featured similar surface structures with mud brick ringwalls, but unfortunately they have not been documented (182, Fig. 13.3).

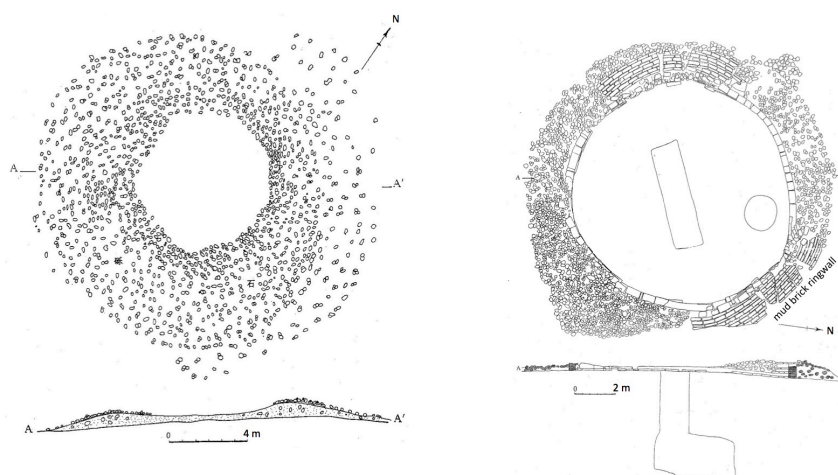


**Figure 21.3** – Mud brick ringwall at Terrace II, Yanghai (Photographs by the author).



**Figure 21.4** – Yanghai, graves IIM47, M48 and M49. Plan and section drawings (After Tulufan Diqiu Wenwuju et al., (forthcoming), Figs. 474, 475, 477).

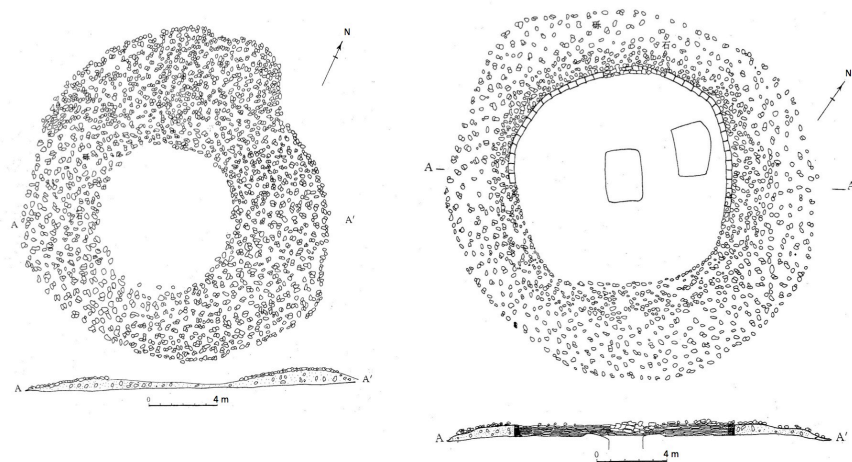
At Jiaohé Goubéi, details on surface structures are only available for the two main grave complexes M1 and M16, next to M14, M15 and M27. All featured a mound, though M27 only showed a mud brick wall. Nevertheless, most shaft and niche graves had mounds at the time of excavation and this is also visible on the site plan (287, Fig. 20.6). There is no mentioning of mounds on ancillary graves.



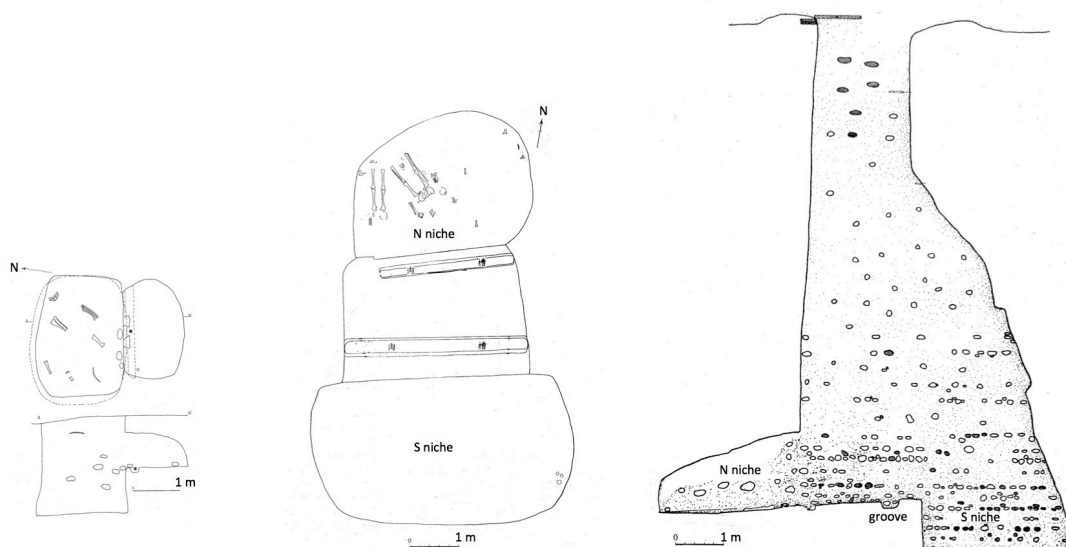
**Figure 21.5** – Jiaohé Goubéi, grave M01, plan and section drawing. (After Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu *et al.* 1998, 19, Figs. 15 and 29, Fig. 28)

The mounds at Jiaohé Goubéi are circular and made of pebblestone mixed with earth, occasionally reinforced by a ringwall made of mud brick and mud plaster at the basis (Fig.

21.10). The smallest mounds have a diameter of c. 3 m (shaft grave M14). The two largest niche grave complexes show more elaborate surface constructions. The mound of M01 has a diameter of 15.20 m with an embedded mud brick ringwall of c. 10.30 m in diameter and a remaining height of 0.6 m (Fig. 21.5). The mound of M16 measures 26 m in diameter with an embedded mudbrick ringwall of 10.90 x 10.20 m (Figs. 21.6, 21.7, 21.8, 21.9).



**Figure 21.6** – Jiaohe Goubei, grave M16, plan and section drawing mound. Presumably with wrong north arrow. (After Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu *et al.* 1998, 20, Figs. 16 and 21, Fig. 17)



**Figure 21.7** – Jiaohe Goubei, grave M16. Plan and section drawing of the subsurface structures, including one single niche grave M16-1 (LEFT) and one double niche grave M16-2 (MIDDLE and RIGHT). The latter presumably with wrong north arrow. (After Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu *et al.* 1998, 28, Fig. 27; 31, Fig. 29; and 32, Fig. 30)



**Figure 21.8** – M01, Jiaohe Goubei (After Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu *et al.* 1998, Colour Plate I.1)

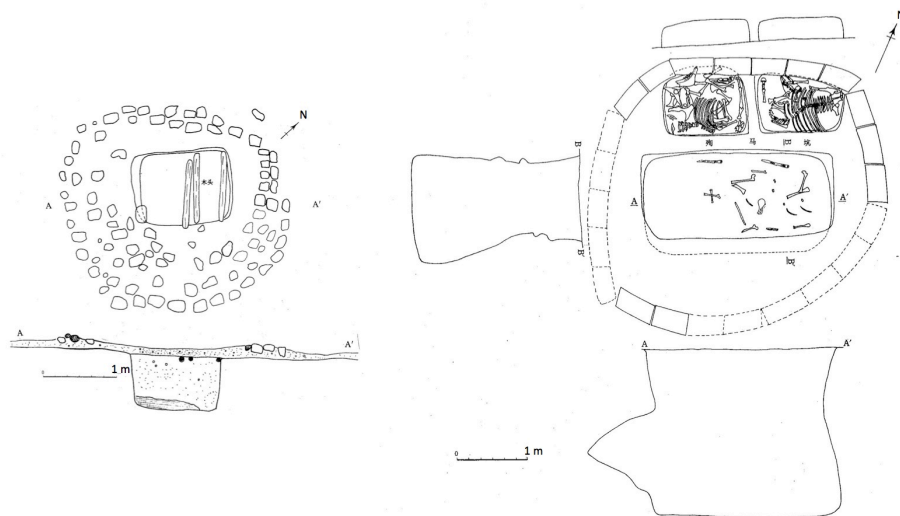


**Figure 21.9** – M16, Jiaohe Goubei (Id., Colour Plate I.2)



**Figure 21.10** – Mud brick ringwall (detail), M16, Jiaohe Goubei (Photograph by the author).

Finally, there is at least one other mounded grave (M27) with an embedded mud brick wall at Jiaohe Goubei, but the diameter of the latter is only c. 4.5 m. This grave (M27) strongly resembles graves IIM47 and IIM49 at Yanghai, which also feature a mud brick wall and horse pits to the north of the main grave shaft. The resemblance is even stronger between M01 of Jiaohe Goubei and IIM47 and IIM49 of Yanghai.



**Figure 21.11** – Jiaohe Goubei grave M14 (LEFT) and M27 (RIGHT) (After Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiao chu *et al.* 1998, 18, Fig. 13 and 25, Fig. 23)

In conclusion, despite the problematic reporting, the sites of Subeixi III, Yanghai II and Jiaohe Goubei allowed for a limited assessment of surface structures in the Turfan Basin. The first true mounds appeared no earlier than c. 500 BCE on shaft graves of Terrace II at Yanghai. Small mounds with a diameter of c. 3.5 m were common for shaft and niche graves of no special status, at Subeixi I, Yanghai II, and Jiaohe Goubei. No special efforts were needed to construct the mounds as pebbles were naturally available and did not have to be collected from far away.



Mounds became more elaborate with the emergence of niche graves in the Turfan Basin. Larger mounds with an embedded circular mud brick ringwall at the base were only constructed on niche graves at Jiaohe Goubei and on Terrace II at Yanghai. Architectural similarities between these mounds suggest a strong link between the niche grave occupants from Yanghai II and Jiaohe Goubei. These mounds with embedded mud brick ringwalls are reminiscent of stone mounds with embedded stone ringwalls in the upper Yili and Fergana basins (92, Fig. 8.10). Both mud brick and stone ringwalls could be interpreted as functional features, necessary to reinforce larger mounds. In wetter areas like the Yili Basin, these probably allowed for a better drainage of rainwater. The tradition of the Yili Basin may have inspired that of the Turfan Basin, where the pebblestones were replaced with the more locally available mud brick.

## 21.3 Grave orientation

Body orientation, and information on the grave types they were associated with, were lacking for many graves. Therefore, I focused on assessing and comparing grave orientation. Due to the small sample size, absolute counts and no percentages were provided.

Tab. 21.1 shows the variability of *grave* orientation at Subeixi I and III. The classification into four orientation categories was done similar as for Yanghai (185, Tab. 13.4). Orientations in degrees were obtained from the excavation reports.<sup>2</sup>

	Grave Type		
	C	D	Total
NN/SS	0	1	1
NE/SW	2	1	3
EE/WW	15	5	20
SE/NW	18	1	19
Total	35	8	43

**Table 21.1** – Counts grave orientations vs. grave type at Subeixi I and III.

Out of 43 graves for which records were available, orientation along the EE/WW (20/43) and SE/NW (19/43) axes prevailed. Type C graves almost equally favoured the EE/WW (15/35) and SE/NW axes (18/35), while Type D graves seemed to prefer the EE/WW (5/8) over all the other axes, which only occur once each. Orientation along the NE/SW axis occurs occasionally in Type C (2) and D (1). The only Type D grave oriented along the NN/SS axis (1), is the only niche grave IIM25 from Subeixi III.

*Body* orientation could be determined for 19 individuals (not shown in the table) and provided the following counts: NN (0), SS (1), NE (0), SW (1), EE (5), WW (3), SE (4), NW (5). This suggests a considerable variability, but because of the small pool, there is hardly anything to conclude from this. The niche graves count at least one WW (SBX IM3), NW (SBX IM10) respectively SS (SBX IIM25) orientation. The latter (SBX IIM25) is not even conclusive, given inconsistencies in its reporting.<sup>3</sup> The claim in the report that graves at Subeixi III were mainly orientated towards the WW and NW, can therefore not

<sup>2</sup>Tulufan Diqu Wenguansuo 1984, 48; Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002, 46–54.

<sup>3</sup>Compare Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002, 46, Fig. 7 with 47; and Xinjiang Wenwu Kaogu Yanjiusuo et al. 1994b, 154

be confirmed.<sup>4</sup>

When assessing variability in grave orientation at Jiaohe Goubei, a number of difficulties were met. Firstly, the graves on the site plan were not labelled with their corresponding numbers as recorded in the excavation report. Secondly, orientation was systematically recorded in the wrong way. Information on the grave orientation could be found in two se-parate tables, individual plan and section drawings, notes that exist for part of the graves, and finally the site plan.<sup>5</sup> These sources contradicted each other. In general, the report of Jiaohe Goubei showed a high degree of inconsistencies and mistakes, partly due to unfavourable conditions at the time of excavation and severe looting of the site.

As a result, orientation data needed to be corrected and streamlined. Hereto, I started verifying the orientation of the main grave complexes, which were visible on satellite images and clearly differed from the recorded orientations. I subsequently digitised the site plan and added polylines in the graves in GIS, from which I was able to calculate their orientation.

As graves were not labelled with corresponding grave numbers on the site plan, it was impossible to assess variability of grave orientation against grave type. Assessing variability of grave orientation against grave clusters instead of grave types provided a valid alternative. This was possible due to the way of data collection. I decided to use three clusters: 1) the cluster defined by grave complex M01 and its satellite graves; 2) the cluster defined by grave complex M16 and its satellite graves; 3) the excavation trench in the southeastern corner which I labelled ‘TREX’ (287, Fig. 20.6).

These corrected data could then be used for analysis, as shown in Tab. 21.2. Three extra graves than those recorded (58 i.s.o. 55 graves) were considered, since I relied on the groundplan of the cemetery rather than on the descriptions of the graves in the report.

	Cluster M01	Cluster TREX	Cluster M16	Total
NN/SS	0	1	0	1
NE/SW	2	5	6	13
EE/WW	13	18	8	39
SE/NW	2	2	0	5
Total	17	26	15	58

**Table 21.2** – Counts grave orientations vs. burial cluster at Jiaohe Goubei.

<sup>4</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 1994b, 151.

<sup>5</sup>Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998, 30, Tab. 1, Tab. 4.

Some interesting observations were made. The majority of the graves in all three clusters are oriented along the EE/WW axis (39/58), and this was most prominent in Cluster M01 (13/17), followed by Cluster TREX (18/26) and Cluster M16 (8/15).

Orientation along the NE/SW axis is a minority (13/58) best represented in Cluster M16 (6/15), followed by Cluster TREX (5/18) and Cluster M01 (2/13). Orientation along the SE/NW axis is a small minority (5/58) best represented by Cluster M01 (2/17), followed by Cluster TREX (2/26) but absent in Cluster M16 (0/15). Only 1 grave in Cluster TREX is oriented along a NN/SS axis (1/26).

The above analysis suggests similar developments at Jiaohe Goubei as for Yanghai after the emergence of niche graves (Type D). That is, the number of graves arranged along the NE/SW axis increased, at the expense of those along the EE/WW (the latter still maintaining its majority position) and SE/NW axes (185, Tab.13.4).

At Yanghai, where assessment of both *body* and *grave* orientation was possible, it was observed that in Terrace Phase III, graves arranged along the NE/SW axis, corresponded almost exclusively with a NE body orientation, while graves arranged along the EE/WW axis corresponded largely with a WW body orientation, and less so to an EE body orientation. The latter was nonetheless the dominant body posture during terrace phases I and II, followed by the SE orientation (202, Tab. 14.5).

Even though a fine-tuning based on an assessment of *body* orientation could not be done for Jiaohe Goubei, similar developments in *grave* orientation as for Yanghai led me to hypothesise that the Jiaohe Goubei clusters represent three building phases: 1) an Early Phase represented by Cluster M01; 2) a Middle Phase represented by Cluster TREX; and 3) a Late Phase represented by Cluster M16. While it can be questioned whether the sample suffices to support such a claim, the existence of three phases is supported by other changes in sacrificial and architectural practices at Goubei (318; 333).

The variability of grave orientation at Jiaohe Gouxi is shown in Tab. 21.3. Despite the limited sample of 23 graves, some significant conclusions could be drawn. Firstly, orientation along the EE/WW axis is present in the majority of graves (14/23) followed by a quarter of SE/NW orientations (6/23). Secondly, a meridional orientation is absent (0/23), and in line with its insignificance at the other investigated sites. Most significantly, the NE/SW orientation for niche graves is only present in 3/23 graves, including two shaft graves and one niche grave.

	Grave Type		
	C	D	Total
NN/SS	0	0	0
NE/SW	2	1	3
EE/WW	10	4	14
SE/NW	3	3	6
Total	15	8	23

**Table 21.3** – Counts of grave orientations vs. grave type at Jiaohe Gouxi.

At Shengjindian, the majority of the graves are oriented along a SE/NW axis (22/29). This is clearly the most popular orientation among both shaft and niche graves (15/19 resp. 5/7). This is different however from Yanghai where EE/WW was the most popular orientation for both shaft and niche graves, in the latter case closely followed by NE/SW (Tab. 21.4).

	Grave Type				Total
	B	C	D	E	
NN/SS	0	1	1	0	2
NE/SW	0	1	0	1	2
EE/WW	0	2	1	0	3
SE/NW	2	15	5	0	22
Total	2	19	7	1	29

**Table 21.4** – Counts of grave orientations vs. grave type at Shengjindian.

In conclusion, the above analyses of grave orientation show that, at Subeixi and Shengjindian, there is a strong preference in shaft graves (Type C) for an orientation along a SE/NW axis, and for niche graves (Type D) along an EE/WW axis. At Yanghai, the SE/NW – along with a EE/WW – orientation was popular for grave types A, B and C, until the arrival of niche graves, which initiated an innovative NE/SW orientation, notably at the expense of SE/NW orientation, and which was almost as important as the EE/WW orientation. (185, Tab. 13.4).

Analysis of Yanghai in § 13.4, showed that grave orientation along the EE/WW axis was a more stable one, while the other two orientations, the NE/SW respectively the SE/NW

ones, were negotiated at each other's expense. When the former increased in number, the latter decreased, and vice versa. Moreover, while the innovative NE/SW orientation was strongly associated with niche grave practices, the SE/NW was a more conservative grave orientation, which on terraces I and II represented the second-most important grave orientation next to the mainstream EE/WW orientation.

With reference to Yanghai, the choice of the Subeixi and Shengjindian population to go back to the more conservative orientation of SE/NW, while almost entirely suppressing the NE/SW orientation for niche grave occupants, could be interpreted in two ways. Either it implies an earlier date, which seems plausible for Subeixi III, or we deal with a form of conservatism. For Shengjindian, where most niche grave users followed the SE/NW orientation rather than the more neutral EE/WW orientation, I suggest this was due to conservatism.

At Jiaohe Goubei we see the opposite: a continuation and intensification of the developments, seen at Yanghai. With the emergence of niche graves at Jiaohe Goubei, the innovative NE/SW orientation appears. At the early phase at Jiaohe Goubei, represented by M01, the majority share was taken by the more neutral EE/WW orientations still leaving equal space though for the minority orientations of SE/NW as well as NE/SW. However, with the gradual appearance of graves in Cluster TREX and eventually Cluster M16, there was an increasing suppression of the SE/NW orientation in favour of the NE/SW. In M16, the NE/SW orientation finally took almost an equal share as the EE/WW orientation. The higher share in NE/SW orientations in grave complex M16 may suggest that niche grave practices, including their diagnostic NE body orientation, was most prominent in this phase at Jiaohe Goubei. In other words, manipulation of grave orientation in favour of the NE/SW alignment could be seen as a way of negotiating power and expressing group identification of a niche grave using elite.

Despite the small sample size of Jiaohe Gouxu, it is suggested that an EE/WW alignment prevailed, while the remaining minority shares developed in favour of the SE/NW and at the cost of NE/SW alignment. This possibly symbolised the declining status of niche grave occupants at this site.

## 21.4 Niche orientation

While most reports recorded grave orientation in degrees and thus also held information on inter-cardinal directions, they almost never did so for niche orientation. In the best case, only the approximate cardinal direction was given, and sometimes, no orientation at all. Yanghai provided the most complete data on niche orientation.

For Subeixi I, niche grave orientation was derived from the plan drawings of the graves, and despite the incomplete numbering of graves it was possible to determine that all identified ‘niche graves’ had their niches cut out from the SS (occasionally the SW or SE) wall of the entry shaft. Just as for grave orientation, it was possible to derive niche orientation for a larger number of graves than those excavated. For Subeixi III, the only niche grave M25 (featuring a small but true niche including roundwood sealing) was also included. The orientation of the niches at Shengjingdian was derived from the cemetery and individual grave drawings. For Jiaohe Goubei, I could only derive reliable orientations for the niches of graves M01, M16–1 and M16–2, because of inconsistent or incomplete recording of grave orientation and grave numbers. In the latter I was able to reconstruct the grave orientation of part of the graves using GIS (301, Tab. 21.2), but I was not able to associate them with grave type based on the documented material, and consequently it was not possible to retrieve the orientation of the niches. For Jiaohe Gouxu, it was possible to include niche orientation for the majority of graves.

Orientation of niche	Number of graves	Percentages
NN	14	17.9%
SS	21	26.9%
SE	12	15.4%
NW	17	21.8%
NE	3	3.8%
SW	9	11.5%
EE	0	0%
WW	2	2.6%
Total	78	100%

**Table 21.5** – Variability of niche orientation in niche graves in the Turfan Basin. Based on data from Yanghai, Subeixi, Jiaohe Goubei and Jiaohe Gouxu.

In conclusion, the assessment of variability in niche orientation in the Turfan Basin was based on a total of 78 niche graves and is summarised in Tab. 21.5. For graves oriented along a EE/WW axis, SS niches were most popular (26%), followed by NN niches (17.9%). For graves oriented along a NE/SW axis, NW niches (21.8%) were more popular than SE niches (15.4%). For graves oriented along a SE/NW, SW niches (11.5%) seemed more common than NE niches (3.8%). Finally, the two graves oriented along a meridional or NN/SS axis all featured WW niches (2.6%) and none EE niches (0%).

## 21.5 Width-to-length ratio of the grave mouth

For the analysis of WL-ratio of the grave mouth at Subeixi, Shengjindian, Jiaohe Goubei and Jiaohe Gouxu, only 118 out of a total of 148 graves qualified for the analysis, because W and L measurements of the other 30 graves were unknown.

WL-Ratio	Grave Type			Total
	B	C	D	
Widest	1	13	4	18
Wide	1	16	1	18
Narrow	1	20	3	24
Narrowest	1	36	21	58
Total	4	85	29	118

**Table 21.6** – WL-ratio of shaft mouth per grave type at the sites of Subeixi, Shengjindian, Jiaohe Goubei and Jiaohe Gouxu.

Tab. 21.6 shows the counts of grave types per WL-ratio category. The same categories are for Yanghai were used, i.e. ‘Narrowest’ ( $\leq 0.5075$ ), ‘Narrow’ ( $\leq 0.5743$ ), ‘Wide’ ( $\leq 0.6382$ ) and ‘Widest’ ( $\leq 0.9667$ ).

Similar to Terrace Phase III of Yanghai, the largest shares of both Type C and D graves fall into the category ‘Narrowest’ (36/85 resp. 21/29) (compare with 190, Tab. 13.7). While the presence of niche graves (Type D) in itself is already a chronological indicator, the presence of a high ratio of shaft graves (Type C) belonging to the ratio category ‘narrowest’ confirms contemporaneity with Yanghai Terrace Phase III too.

There are nevertheless significant shares of Type C graves in the categories ‘Narrow’ (20/85), ‘Wide’ (16/85) and ‘Widest’ (13/85), suggesting perhaps some overlap with Yanghai



Terrace Phase II. At Yanghai, the share of Type C falling in the category ‘Narrowest’ ( $\leq 0.5075$ ) rose dramatically from 18.4% on Terrace II, to 75% on Terrace III (190).

When assessing WL-ratio per site, the largest shares at all sites fall into the category ‘Narrowest’ (10/19; 16/28; 21/48; 11/23). This, together with the co-existence of Type C and D graves, confirms that they were largely contemporaneous with Terrace Phase III at Yanghai.

WL-Ratio	SBX	SJD	JGB	JGX	Total
Widest	6	2	9	1	18
Wide	2	5	4	7	18
Narrow	1	5	14	4	24
Narrowest	10	16	21	11	58
Total	19	28	48	23	118

**Table 21.7** – WL-ratio of shaft mouth per per site Subeixi, Shengjindian, Jiaohe Goubei and Jiaohe Gouxu

In conclusion, the high share of Type C graves with WL-ratios falling in the category ‘narrowest’, and co-existing with Type D graves (only exclusively falling into that category) in the joint pool of Subeixi, Shengjindian, Jiaohe Goubei and (early) Jiaohe Gouxu, support contemporaneity with Terrace Phase III at Yanghai, even though the group of Type C graves falling into wider categories, may be older and contemporaneous with Terrace Phase II.

## 21.6 Conclusion

Analysis of variability in grave architecture with relation to the four niche grave sites under discussion allowed for some preliminary conclusions, despite a considerable number of problems related to insufficient and scattered archaeological reporting, environmental circumstances, and looting.

Firstly, no quantitative analysis of surface structures could be carried out due to bad reporting and surface erosion. Assessment of the available data (§ 21.2) showed that small pebble mounds with a diameter of c. 3.5 m emerged in the Turfan Basin after c. 500 BCE and first in shaft graves. However, complex mounds with embedded mud brick structures appeared first on niche graves at Jiaohe Goubei and on Terrace II at Yanghai. This implies not only that their occupants enjoyed considerable status, but also that the complex niche grave structures at Terrace Phase II and Jiaohe Goubei were contemporaneous.

Secondly, analysis of grave orientation (§ 21.3) was assessed against the findings for Yanghai. In the latter, it was observed that the EE/WW orientation was a more mainstream and stable orientation. Furthermore, the increasing suppression of SE/NW orientations in favour of increasing NE/SW orientations, was interpreted as an increasing significance of the niche grave population. I thus hypothesised that different ratios of grave orientation indicated not only different degrees of control by niche grave occupants in different communities, but that it could also support chronological differentiation.

Based on this logic, I suggested three phases for the Jiaohe Goubei cemetery, with grave complex M01 being the earliest, followed by cluster TREX and finally grave complex M16. I further theorised that the small share NE/SW orientations and the high share of SE/NW orientations at Shengjindian and Subeixi possibly indicated conservatism and/or a earlier date. The high share of SE/NW orientations was mainly attributed to the earlier chronology of cluster Subeixi III, where shaft graves dominated. Jiaohe Gouxu, where EE/WW orientations prevailed, next to minorities favouring SE/NW at the cost of NE/SW orientations, possibly symbolised the declining status of niche grave occupants.

Thirdly, analysis of niche orientation in the Turfan Basin (§ 21.4) showed that graves oriented along a EE/WW axis mostly featured SS niches followed by NN niches. Graves oriented NE/SW favoured NW niches over SE niches. Graves oriented SE/NW, favoured SW over NE niches. Finally, the two graves oriented NN/SS all had WW niches.

Fourthly and finally, § 21.5 showed that the high rates of both shaft and niche graves falling into the category ‘Narrowest’, correspond with Terrace Phase III at Yanghai. This observation is relevant, implying significant conclusions on chronology can be made based on different WL-ratios of graves, even in the absence of grave goods.

## 22 Comparative analysis of the human remains

### 22.1 Introduction

Analysing the human remains of Subeixi, Jiaohe Goubei, Jiaohe Gouxi and Shengjindian faced serious limitations. Assessing body posture (§ 22.2) and single, double and multiple burial practice (§ 22.3) could only be done using small samples, due to considerable disturbance and insufficient recording. A maximum MNI of 256 individuals was analysed.

### 22.2 Body posture

The body posture of 60 out of 256 individuals (c. 23.5%) could be determined. Because of this small sample, absolute numbers and no percentages are provided in Tab. 22.1.

‘Extended on the back’ was the main posture in both Type C and D graves at Subeixi (12/21), Jiaohe Goubei (21/24), Jiaohe Gouxi (5/6), while it was rare at Shengjindian (2/9) occurring only in Type D graves.

Interestingly, ‘flexed on the back’ was the main posture at Shengjindian (7/9), where it was the only posture in Type B (3) and C (3) graves, and used in one Type D grave (1). ‘Flexed on the back’ occurred occasionally at Subeixi (2/13) and Jiaohe Goubei (2/24), exclusively in Type C. This posture was absent at Jiaohe Gouxi.

‘Flexed on the side’ was occasionally seen at Subeixi (1/13) and Jiaohe Goubei (1/24). ‘Extended on the abdomen’ was only observed at Jiaohe Gouxi (1/6), in a Type D grave.

In conclusion, ‘extended on the back’ prevailed at Subeixi, Jiaohe Goubei and Jiaohe Gouxi, with a minority ‘flexed on the back’ (absent in Gouxi). At Shengjindian, ‘flexed on the back’ prevailed, with a minority of ‘extended on the back’. The former three sites thus resembled Terrace III, while Shengjindian resembled Terrace II at Yanghai (198, Tab. 14.3).

	Grave Type					Total
	A	B	C	D	E	
<b>SUBEIXI</b>						
Extended on abdomen	0	0	2	0	0	2
Extended on the back	0	0	9	3	0	12
Flexed on the back	0	0	5	0	0	5
Flexed on the side	0	0	2	0	0	2
Total	0	0	18	3	0	21
<b>JIAOHE GOUBEI</b>						
Extended on abdomen	0	0	0	0	0	0
Extended on the back	0	0	16	2	3	21
Flexed on the back	0	0	2	0	0	2
Flexed on the side	0	0	1	0	0	1
Total	0	0	19	2	3	24
<b>JIAOHE GOUXI</b>						
Extended on abdomen	0	0	0	1	0	1
Extended on the back	0	0	2	3	0	5
Flexed on the back	0	0	0	0	0	0
Flexed on the side	0	0	0	0	0	0
Total	0	0	2	4	0	6
<b>SHENGJINDIAN</b>						
Extended on abdomen	0	0	0	0	0	0
Extended on the back	0	0	0	2	0	2
Flexed on the back	0	3	3	1	0	7
Flexed on the side	0	0	0	0	0	0
Total	0	3	3	3	0	9

**Table 22.1** – Counts of known body posture at Subeixi, Jiaohe Goubei, Gouxi and Shengjindian.

## 22.3 Single, double and multiple burial practice

The ratios of single, double and multiple burial practices for the four sites under comparison are shown in Tab. 22.2. Given the small sample size, absolute numbers and no percentages are given.

For Subeixi, the MNI of 19/43 excavated graves is known. The available data suggest that multiple burial prevailed (9/19), and was present in Type D (5) as well as in Type C (4) graves. Double burial was also common (6/19), though primarily in Type C (5) rather than Type D graves (1). Single burial was only recorded for Type D graves (2), including the only niche grave from Subeixi III (IIM25).

At Jiaohe Goubei, the MNI of 55/57 graves is known. Three graves (M01, M09 and M20) were empty, probably because of looting. Single, double, and multiple practices take similar shares in Type C (12/13/13) and Type D (3/5/3). The only two Type B graves hold 1 single respectively 1 double burial.

At Jiaohe Gouxu, the MNI of 23/23 graves is known. 6 graves were empty, probably because of looting. Single burial prevailed in both Type C (9) and Type D graves (6). Double burial is only seen in 1 Type C grave, and multiple burial in 1 Type D grave.

At Shengjindian, the MNI of 29/29 graves is known. Double and multiple burials are most popular in Type C (7 resp. 7) and Type D graves (3 resp. 3). Single burials is equally well represented in Type C (5) but not in Type D (1). The Type B graves hold 1 single respectively 1 double burial.

In conclusion, it is suggested that double and multiple burial were relatively popular at Subeixi, Jiaohe Goubei and Shengjindian, but not at Jiaohe Gouxu. This is comparable to Terrace Phase III at Yanghai, where double burials in Type C and D represented 29.3% respectively 43.6%, and multiple burials 43.9% resp. 43.6%. The low rate of single burials in Type C and Type D, also characteristic for Yanghai III (26.8% resp. 12.7%), is weakly present at Subeixi and Shengjindian, while it represents the main practice at Jiaohe Gouxu. At Jiaohe Goubei, single burial was equally popular as double and multiple burial.

	Grave Type					Total
	A	B	C	D	E	
<b>SUBEIXI</b>						
MNI=1	0	0	2	2	0	4
MNI=2	0	0	5	1	0	6
MNI $\geq$ 3	0	0	4	5	0	9
MNI=0	0	0	0	0	0	0
MNI Unknown	0	0	24	0	0	24
Total MNI	0	0	35	8	0	43
<b>JIAOHE GOUBEI</b>						
MNI=1	0	1	12	3	0	16
MNI=2	0	1	13	5	0	19
MNI $\geq$ 3	0	0	13	3	1	17
MNI=0	0	0	2	1	0	3
MNI Unknown	0	0	0	2	0	2
Total MNI	0	2	40	14	1	57
<b>JIAOHE GOUXI</b>						
MNI=1	0	0	9	6	0	15
MNI=2	0	0	1	0	0	1
MNI $\geq$ 3	0	0	0	1	0	1
MNI=0	0	0	5	1	0	6
MNI Unknown	0	0	0	0	0	0
Total MNI	0	0	15	8	0	23
<b>SHENGJINDIAN</b>						
MNI=1	0	1	5	1	0	7
MNI=2	0	1	7	3	0	11
MNI $\geq$ 3	0	0	7	3	1	11
MNI=0	0	0	0	0	0	0
MNI Unknown	0	0	0	0	0	0
Total MNI	0	2	19	7	1	29

**Table 22.2** – Counts of single, double and multiple burial per grave type at Subeixi, Jiaohe Goubei, Jiaohe Gouxu and Shengjindian.

## 22.4 Conclusion

Comparative analysis of the human remains (§ 22.2) suggests – despite the small sample – that the popularity of extended body posture at Subeixi, Jiaohe Goubei and Jiaohe Gouxu, was consistent to that on Terrace III at Yanghai, while Shengjindian shows a preference for the more conservative body posture ‘flexed on the back’. The latter was the dominant practice on Terrace Phase II at Yanghai, especially for Type C graves.

The samples of Subeixi, Jiaohe Goubei and Shengjindian used in § 22.3, further suggested the importance of double and multiple burial in both shaft and niche graves, just as on Terrace III at Yanghai. The decreasing significance of single burials, also common for this phase, is best seen at Subeixi. Single burial was the main practice at Jiaohe Gouxu, but also represented a fourth respectively a third at Shengjindian and Jiaohe Goubei.

# 23 Comparative analysis of the animal remains

## 23.1 Introduction

Analysis of animal remains from Yanghai, demonstrated a strong link between lateral niche graves and (whole) horse burial (Chapt. 15). This chapter investigated whether similar observations can be made for Subeixi, Jiaohe Goubei, Jiaohe Gouxu, and Shengjindian, and wether sacrificial practices were consistent at all the sites. The presence and type of animal remains in relation to site and grave type was assessed (§ 23.2), next to location and completeness of the skeletal remains (§ 23.3).

## 23.2 Presence and type of animal bones

I started assessing the presence of animal remains per site (Tab. 23.1), and the ratios of different animal types per grave type (Tab. 23.2).

At Subeixi, animal bones were only recorded for 4/43 graves. The total MNI of 4 animals are all sheep/goat, of which 3 were found in Type C, and 1 in a Type D grave. The low occurrence may result from looting and incomplete recording.

At Jiaohe Goubei, almost a fifth or 10/55 of the graves showed evidence for animal sacrifice. The total MNI of 86 animals, included 81 horses and 5 camels but no sheep/goat. Of the horses, the great majority or 77 individuals were found in association with Type D graves, followed by 3 individuals in association with Type C and 1 in a Type B grave. All 5 camels were found in association with niche graves.

At Jiaohe Gouxu, animal bones were recorded for 3/23 graves. The total MNI of 3 animals all concerned horses exclusively found in Type C graves.

At Shengjindian, 9/29 graves had animal bones. The total MNI of 11 animals all con-



cerned sheep/goat, found in Type C graves (MNI=8), Type D graves (MNI=2) and Type E graves (MNI=1).

In conclusion, animal sacrifice was most elaborate at Jiaohe Goubei, where it was concentrated in niche graves and involved large numbers of whole horse next to some camel sacrifice. It was relatively insignificant at Subeixi and at Jiaohe Gouxu. Shengjindian is more reminiscent of Type C graves on Terrace II at Yanghai, where a third of the population enjoyed the sacrifice of ovicaprids.

	Grave Type					Total
	A	B	C	D	E	
<b>SUBEIXI</b>						
Yes	0	0	min. 3	min. 1	0	4
No	0	0	?	?	0	?
All	0	0	35	8	0	43
<b>JIAOHE GOUBEI</b>						
Yes	0	1	2	7	0	10
No	0	1	38	5	1	45
All	0	2	40	12	1	55
<b>JIAOHE GOUXI</b>						
Yes	0	0	3	0	0	3
No	0	0	12	8	0	20
All	0	0	15	8	0	23
<b>SHENGJINDIAN</b>						
Yes	0	0	6	2	1	9
No	0	2	13	5	0	20
All	0	2	19	7	1	29

**Table 23.1** – Presence of animal remains (in MNI counts) per grave type at Subeixi, Shengjindian, Jiaohe Goubei, Jiaohe Gouxu, Turfan Basin (Data of Subeixi are incomplete).

	Grave Type					Total
	A	B	C	D	E	
<b>SUBEIXI</b>						
Horse	0	0	0	0	0	0
Ovicaprid	0	0	min. 3	min. 1	0	min. 4
Camel	0	0	0	0	0	0
Total	0	0	min. 3	min. 1	0	min. 4
<b>JIAOHE GOUBEI</b>						
Horse	0	1	3	77	0	81
Ovicaprid	0	0	0	0	0	0
Camel	0	0	0	5	0	5
Total	0	1	3	82	0	86
<b>JIAOHE GOUXI</b>						
Horse	0	0	3	0	0	3
Ovicaprid	0	0	0	0	0	0
Camel	0	0	0	0	0	0
Total	0	0	3	0	0	3
<b>SHENGJINDIAN</b>						
Horse	0	0	0	0	0	0
Ovicaprid	0	0	8	2	1	11
Camel	0	0	0	0	0	0
Total	0	0	8	2	1	11

**Table 23.2** – MNI counts of animal type per grave type, at Subeixi, Shengjindian, Jiaohe Goubai, Jiaohe Gouxu, Turfan Basin (Data of Subeixi are incomplete).

### 23.3 Location and ratio of completeness

When assessing variability in animal sacrifice I also considered the location where the animal remains were deposited, and which part of the animal was sacrificed.

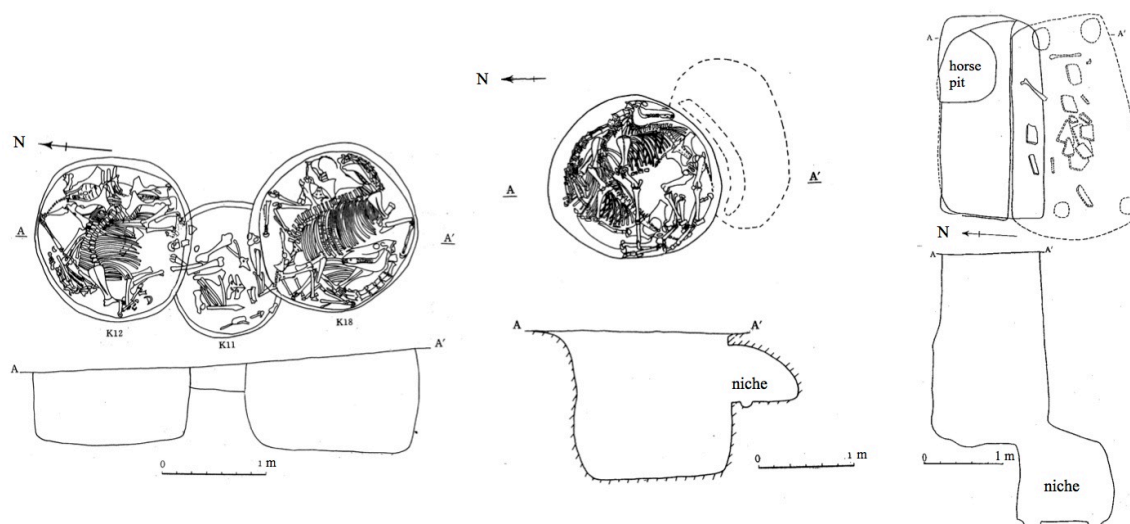
Tab. 23.3 shows that sacrificing (the head of ovicaprids) was most common at Subeixi and Shengjindian, while sacrificing horse heads was occasionally seen at Jiaohe Gouxi. At Jiaohe Goubei, almost exclusively whole animals were sacrificed, accounting for an MNI of 77/81 horses and 5/5 camels.

	Ovacaprid	Horse	Camel
<b>SUBEIXI</b>			
Complete	0	0	0
Skull+	min. 3	0	0
Rest	min. 2	0	0
Total	min. 5	0	0
<b>JIAOHE GOUBEI</b>			
Complete	0	77	5
Skull+	0	0	0
Rest	0	4	0
Total	0	81	5
<b>JIAOHE GOUXI</b>			
Complete	0	0	0
Skull+	0	2	0
Rest	0	1	0
Total	0	3	0
<b>SHENGJINDIAN</b>			
Complete	0	0	0
Skull+	8	0	0
Rest	3	0	0
Total	11	0	0

**Table 23.3** – Comparison of ratio of completeness per animal type at Subeixi, Shengjindian, Jiaohe Goubei, Gouxi (Counts in MNI. Data of Subeixi are incomplete).

It was further observed that at Subeixi and Jiaohe Gouxi, animal remains were deposited directly in shaft graves. At Shengjindian, they were placed in the entry shaft of 3 niche graves and 8 shaft graves.

At Jiaohe Goubei, all animal remains were buried in satellite pits, except for one niche grave (M31), where horse bones were buried inside a pit in the NE corner of the entry shaft (Fig. 23.1, right). In grave complex M01, an MNI of 38 horses and 1 camel were buried in 25 ancillary pits around the central grave. In grave complex M16, an MNI of 33 horses and 4 camels were distributed over 23 ancillary pits around the central grave (287, Fig. 20.6). All the pits of M01 and M16 are located outside the mud brick ringwall except for one pit of M01, which is located north of the central grave inside the ringwall. The latter is similar to Yanghai II, where horse pits were also situated inside the mud brick ringwall of niche grave complexes M47, M48 and M49 (295, Figs. 21.4–21.5).



**Figure 23.1** – Horse pits adjacent to M01 (LEFT); M16 (MIDDLE); and inside the entry shaft of niche grave M31 (RIGHT), Jiaohe Goubei (Adapted from Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998, 41, Fig. 36; 44, Fig. 37; 26, Fig. 25).

The overlap of some animal pits indicates they were not dug at the same time (Fig. 23.1, left). Furthermore, it is noteworthy that three of the animal pits adjacent to M16 feature niches (Fig. 23.1, middle). This is not seen in the ancillary pits of M01. The S(E) niche orientation in the horse pits adjacent to M16, the presence of a groove to close the niche with roundwood (Fig. 23.1), and the (N)E body orientation of the horse – the horse pit inside M31 was located in the NE corner too – all indicate deliberate actions. Niches halfway up the wall and floor grooves at the niche entrance (Fig. 23.1) are also present in the central graves M16–01 respectively M16–02 at Jiaohe Goubei (296, Fig. 21.7). All these features are absent in M01 and confirm a later date for M16.

## 23.4 Conclusion

Comparative analysis of animal remains assessed presence and type (§ 23.2) next to location and ratio of completeness (§ 23.3). It confirmed that elaborate animal sacrifice and whole horse sacrifice was almost exclusively associated with niche graves, especially at Jiaohe Goubei, similar to terraces II and III at Yanghai.

At Yanghai, whole horse sacrifice was deposited inside entry shafts, ancillary pits, and occasionally niches. At Terrace II, deposition in ancillary pits north of the grave pit was more common, while at Terrace III, deposition in the entry shaft was more common (222, Tab. 15.7). This may reflect a different chronology or status.

Considering this shift, sacrificial practices at Jiaohe Goubei, where horse were mostly buried in ancillary pits, corresponded more with Terrace Phase II than III at Yanghai. This practice was more developed at Jiaohe Goubei than at Yanghai II however, with larger numbers of animals sacrificed and camel added to the assemblage. It was further observed that the positioning of animal pits immediately north of the central grave shaft inside the mud brick ringwall, seen at Yanghai in IIM47, IIM48 and IIM49 and at Jiaohe Goubei in M01, was eventually abandoned in M16, where animal pits are only seen outside of the ringwall. This, and possibly the addition of more camels, support a later date for M16.

Animal sacrifice was insignificant at Subeixi, perhaps as a result of insufficient reporting. At Jiaohe Gouxi, two horse skulls were found in Type C graves. Practices at Shengjindian, where a third of the population enjoyed the sacrifice of ovicaprids, are reminiscent of those found in Type C graves at Yanghai II.

In summary, Jiaohe Goubei did not only show the most elaborate animal sacrifice in the Turfan Basin – involving whole horse and to a lesser degree camel sacrifice – but similarities in sacrificial developments with the end of Terrace Phase II at Yanghai suggest contemporaneity with the latter. The similarities between type, location and completeness of animal remains are the strongest between those of IIM47, IIM48 and IIM49 on Terrace II at Yanghai and graves M01 and M27 at Jiaohe Goubei. Finally, Jiaohe Goubei demonstrated that niche making in graves – and occasionally in horse pits – was imbued with meaning and an integral part of burial rituals of a niche grave elite.

# 24 Comparative analysis of the grave goods

## 24.1 Introduction

Because of the limited dataset for Jiaohe Goubei (§ 24.2), Subeixi (§ 24.3), Jiaohe Gouxu (§ 24.4) and Shengjindian (§ 24.5), grave goods were assessed without quantitative analyses. Based on descriptions from excavation reports, and the findings in Parts II and III, it was possible to draw comparisons with Yanghai. This enabled further discussing of the chronology and the networks in which these grave goods circulated (§ 24.6).

## 24.2 Jiaohe Goubei

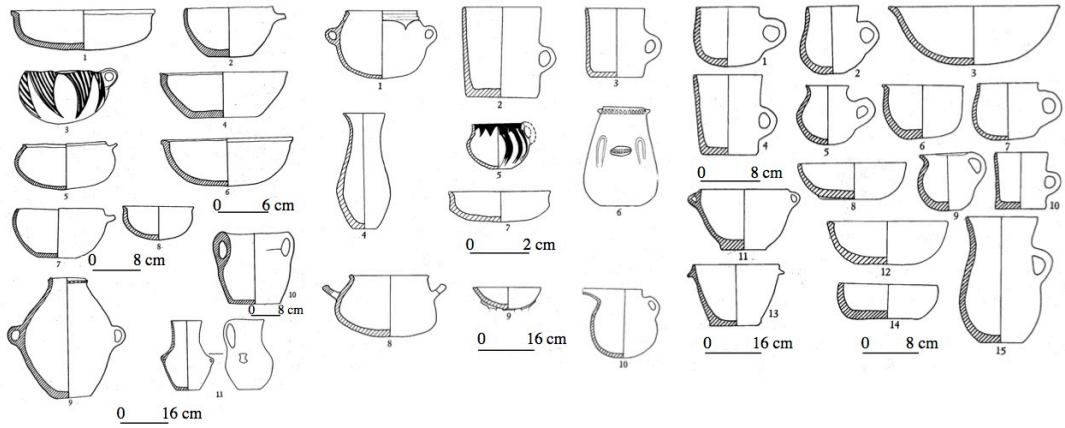
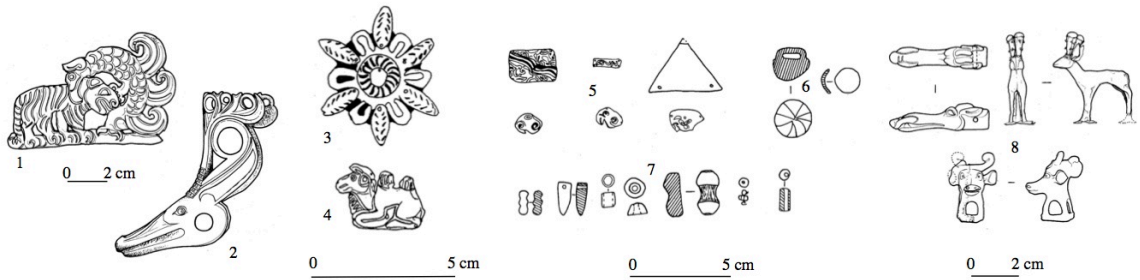
A *wuzhu* coin and five lacquer items including one lacquered wooden plaque, all from shaft graves ancillary to M01, provide the earliest evidence for contact between the Turfan Basin and the Han from the Central Plains.<sup>1</sup>

The coin provides a *postquem* date for the closure of the satellite grave (Fig. 24.2, bottom left). The occupants of the central grave M01 may be buried slightly earlier than those of the grave with the coin. The launch of the *wuzhu* coin by Emperor Wu around 118–115 BCE, remained the main currency until the 8<sup>th</sup> century. Only size and quality allow for chronological classification. Those with a clear-cut rim found on numerous sites in Xinjiang, with some exceptions, mostly date to the Eastern Han.<sup>2</sup> The ancillary grave was thus closed no earlier than the late 2<sup>nd</sup> c. BCE and possibly even later.

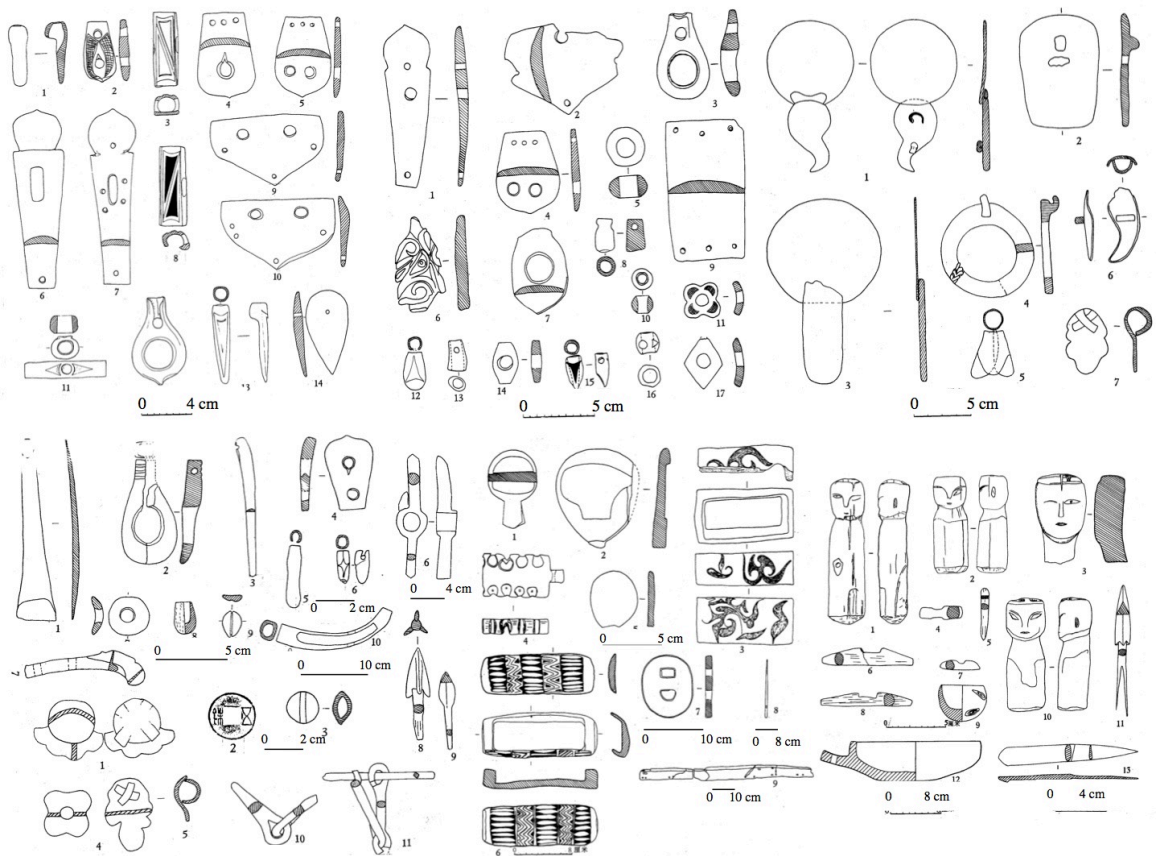
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<sup>1</sup>Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu et al. 1998, 66.

<sup>2</sup>Thierry 2001a; Thierry 2001b; Thierry 1992.



**Figure 24.1** – Jiaohe Goubei (A) (Adapted from Lianheguo Jiaokewen Zuzhi zhu Zhongguo Daibiaochu *et al.* 1998, 48–50, Figs. 40–42; 64–65, Figs. 48–49; 68, Fig. 52).



**Figure 24.2** – Assemblage Jiaohe Goubei (B) (Id., 54, Fig. 43; 57–59 Figs. 44–46; 63, Fig. 47; 66–67, Figs. 50–51).

A bone bow tip carved in the form of a deer's head unearthed from shaft grave M28 at Jiaohe Goubei, strongly resembles a sample from Heigouliang in the Balikun grasslands dated 2<sup>nd</sup> c. BCE (Fig. 24.1, top left; see also 106, Fig. 8.19).

The above suggest niche grave complexes IIM47, M48 and M49 from Terrace Phase II at Yanghai – which are similar to M01 of Jiaohe Goubei – are dated no later than 2<sup>nd</sup> c. BCE (295, Figs. 21.5 and Fig. 21.4).

That Jiaohe Goubei also overlapped with Yanghai Terrace III, is evidenced from similar wooden figurines (Fig. 24.2, bottom right; compare with 244, Fig. 17.8, 3). Similarities with a limestone figure found in the Fergana Basin may be coincidence.<sup>3</sup> Furthermore, the round-bottomed long-necked jug and larger jars with narrow neck and notched appliqué rim strip (Figs. 24.1, bottom left and right) only appeared on Yanghai Terrace III (244, Fig. 17.8, 21–22).

Two painted cups in niche grave complex M16-2 and its satellite grave M16mc at Jiaohe Goubei are noteworthy (Fig. 24.1). At Yanghai, painted pottery was entirely absent in niche graves on terraces II and III, while on Terrace III, it was only present in one shaft grave (230, Fig. 16.1). The latter differed from the Goubei samples, featuring inverted wavy triangular patterns common on Yanghai Terrace II, and also seen at Chaiwopu in the central Tianshan mountains and at Heigouliang in the Balikun grasslands, the later dated 2<sup>nd</sup> c. BCE (106, Fig. 8.19).

The bone belt plaques and saddle fittings with *pointed* arc-shaped endings, are delicate and sometimes intricately carved with geometric or floral designs attesting to a developed bone industry at Jiaohe Goubei (Fig. 24.2, upper left). The undecorated ones strongly resemble samples from the classic Pazyryk culture (5<sup>th</sup>–3<sup>rd</sup> c. BCE) in the Altai.<sup>4</sup> They are also similar to plaques from Orlat in the Zaravshan valley (64, Fig. 7.11). The date of the latter is still subject to debate (64–65).

Bactrian camels represented an innovative theme in figurative art, as evidenced from a gold sheet metal plaque (Fig. 24.1, top left). Though absent at Yanghai, camel sacrifice at Jiaohe Goubei (Chapt. 23) and in the Balikun grasslands (105) demonstrated their significance in the region. This is comparable to the appearance of horse in the figurative art of Yanghai during Terrace Phase III (244, Fig. 17.8, 6). Camels also figured in belt plaques from the southern Ural steppes (3<sup>rd</sup>–2<sup>nd</sup> c. BCE) and from Babashov (c. 200–0 BCE) in the middle Amu Darya Basin valley (43, Fig. 6.5; and 61, Fig. 7.8).

<sup>3</sup>Compare Gorbunova 1986, 337, Plate LVII and 338, Plate LVIII; with the mask in grave IIM74-01 Tulufan Diqu Wenwuju et al. forthcoming, Fig. 928.

<sup>4</sup>Parzinger 2011 [2006], 598, Fig. 195, 12–15.



A curved bone endplate for reinforcing bow nocks, unearthed from satellite grave M01mi adjacent to niche grave complex M01 at Jiaohe Goubei, is similar to a sample from Yanghai Terrace Phase III (Fig. 24.2, above the coin; compare with 244, Fig. 17.8, 16). Similar samples are known from the Fergana Basin (67, Fig. 7.12) and the Zaravshan valley (Orlat, 64, Fig. 7.11). According to Ursula Brosseder, composite bows with reinforced knocks were a technological innovation of the Xiongnu, which spread from Mongolia and Southern Siberia to the northern Black Sea region in the first two centuries CE.<sup>5</sup> However, earlier samples are known from the Qingshui Basin and the Yongchang Basin (136, Fig. 9.9; and 147, Fig. 9.17).

The P-shaped gold sheet belt plaque with winged griffin and feline in combat, unearthed from a satellite shaft grave adjacent to grave complex M01, must have issued from the same area (Fig. 24.1, upper left). According to Ursula Brosseder, P-shaped belt plaques are distributed in areas associated with the Xiongnu.<sup>6</sup> Jiaohe Goubei in the Turfan Basin lies at the westernmost end of this distribution area.

## 24.3 Subeixi

At the settlement of Subeixi, mud brick house foundations, pottery workshops and livestock enclosures were found along with stone tools and painted pottery. Similar pottery was found at the nearby cemeteries of Subeixi III and I, and therefore some degree of continuity can be claimed (Fig. 24.3, 1–4; compare with 5–8 and Fig. 24.4). However, the chronology of Subeixi is not well established (§ 20.2).

Subeixi III features more painted pottery than Subeixi I (Figs. 24.3 and 24.4). This, together with the lower ratio of niche graves in the former in comparison with the latter (1/30 vs. 13/52, see 286, Fig. 20.5), and the occurrence of painted pottery in the only niche grave from Subeixi III (M25), were arguments to claim that Cemetery III was older and dated 5<sup>th</sup>–3<sup>rd</sup> c. BCE.<sup>7</sup> The latter roughly corresponds with the radiocarbon dates (280, Tab. 20.1).

Subeixi III also overlapped with Yanghai Terrace Phase III, as evidenced from round-bottomed long-necked jugs, large jars with narrow neck and notched appliqué rim strip, a rectangular iron belt plaque, a composite bow with recurve, and iron quiver hook ('belt hook' in the report) (Fig. 24.3, 6, 5b, 8a–c; compare with 244, Figs. 17.8, 9, 18, 20–22).

<sup>5</sup>Brosseder 2015, 226–229; Brosseder 2013, 98–100.

<sup>6</sup>Brosseder 2011a, 381–384.

<sup>7</sup>Xinjiang Wenwu Kaogu Yanjiusuo et al. 1994b, 168.

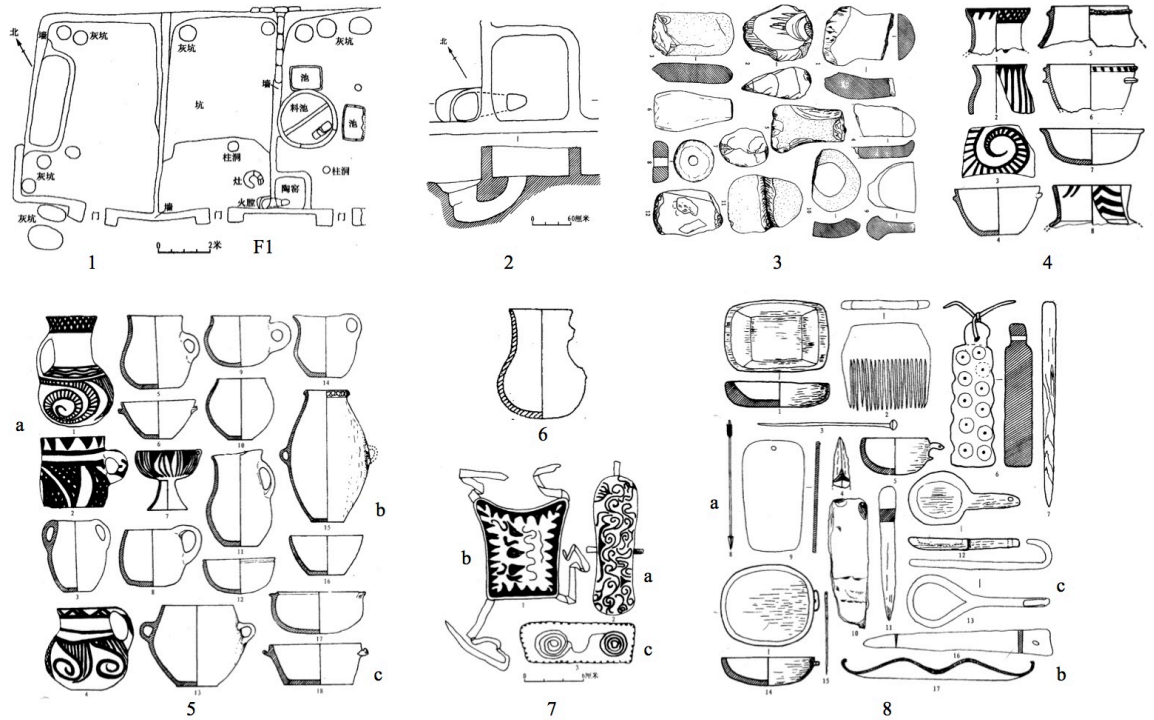


Figure 24.3 – 1–4) Plan and assemblage Subeixi settlement; 5–8) Cemetery III (Adapted from Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002, 43–46, Fig. 3–6; 49–51, Figs. 11–13; and Xinjiang Wenwu Kaogu Yanjiusuo et al. 1994b, 161, Fig. 14.)

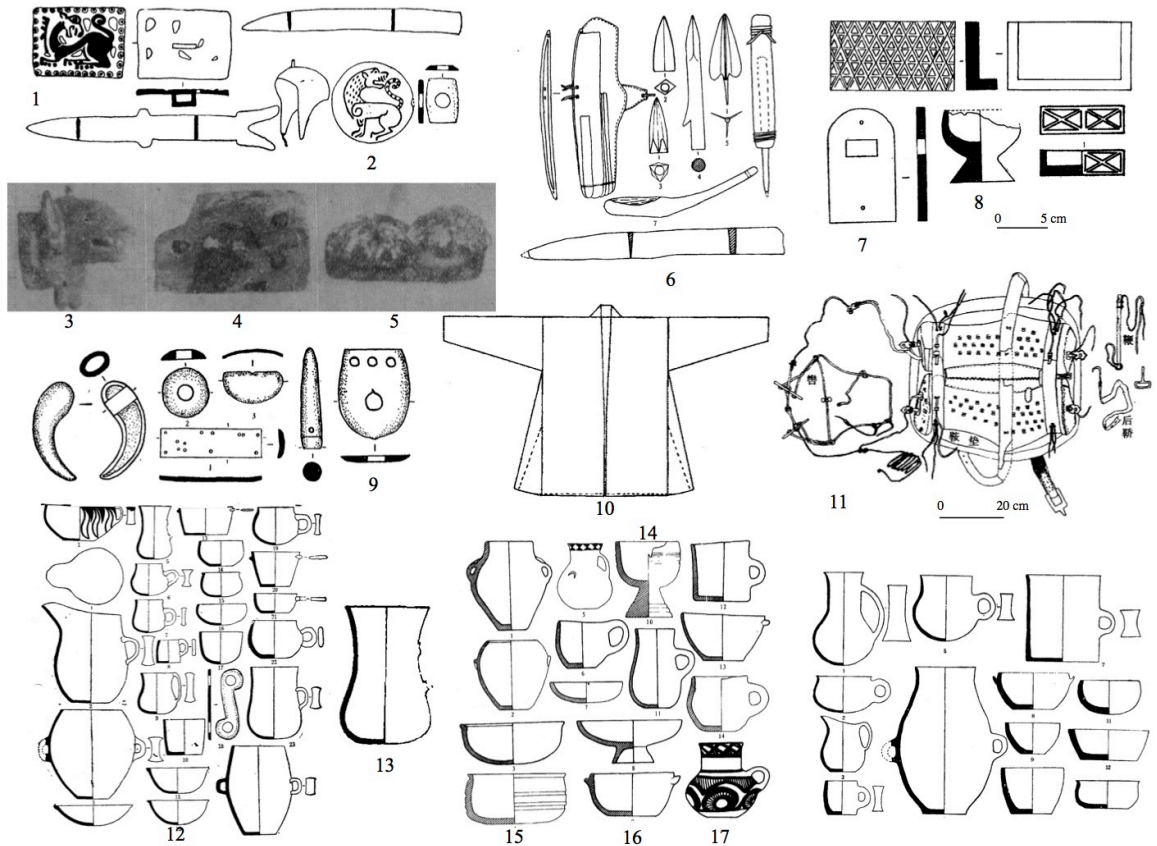


Figure 24.4 – Assemblage Subeixi Cemetery I (Adapted from Tulufan Diqu Wenguan suo 1988, 504–505, Figs. 1–2; Tulufan Diqu Wenguan suo 1984, 43–46, Figs. 4, 6–8; and Xinjiang Wenwu Kaogu Yanjiusuo et al. 2002, 54–56, Figs. 18–21)

Leather arm-guards, used as protection during shooting, existed from Terrace Phase I onward at Yanghai, but the one unearthed from niche grave M25 at Subeixi III, shows a more elaborate finishing including painting (Fig. 24.3, 7a). Another leather item labelled ‘breast protector’ (*huxiong*) found on the occupant of the same grave is absent in earlier periods (Fig. 24.3, 7b). The design of the bracer is similar to a silk brocade sample from Yingpan dated Eastern Han (c. 25–220 CE).<sup>8</sup> The latter suggests bracers became more decorative than functional, similar to the brocade arm-guards from Niya in the southern Tarim Basin, where they were decorated with Chinese characters.<sup>9</sup>

Based on the above arguments, I contest that the only niche grave from Subeixi III (M25) is older than the niche graves of Subeixi I (see § 20.2), and I claim instead contemporaneity with the latter and Yanghai Terrace Phase III.

At Subeixi I, a P-shaped bronze belt plaque, a pointed arc-shaped bone belt plaque and a bronze animal head found in niche grave M1, along with a lacquered wooden item from niche grave M3 are all – except the bronze animal head – reminiscent of finds from Jiaohe Goubei and suggest contemporaneity (Fig. 24.4, 3–5; compare with § 24.2).

Two gilt-bronze belt plaques with dotted rim and tiger design, and an embossed gold sheet roundel with tiger design, were unearthed from M40 and M41 (24.4, 1 and 2). Such roundels are known from Alagou, though the posture of the tiger differs, and are dated 5<sup>th</sup> c. BCE.<sup>10</sup> The type of graves in which the plaques and roundel were found are unknown, and it cannot be confirmed they were deposited when niche graves were in use.

Two similar saddles were excavated from Subeixi III and I. The one from niche grave M10 at Subeixi I is similar in design as another sample from Terrace II at Yanghai, though it is more complete than the latter (Fig. 24.4, 11; compare with 242, Fig. 17.7).

In conclusion, the cemeteries Subeixi III and I overlap with terrace phases II and III at Yanghai.

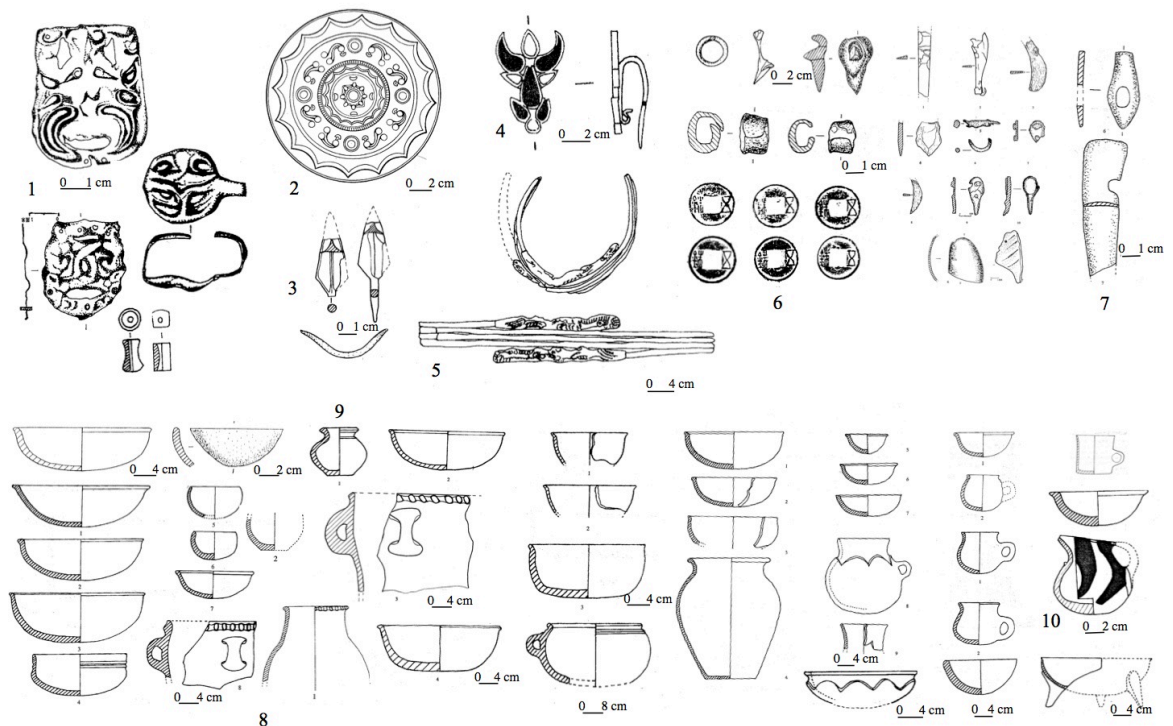
<sup>8</sup>Qi Xiaoshan et al. 2008, 36, Fig. 2.

<sup>9</sup>Yusufu 2008, 82.

<sup>10</sup>Yusufu 2008, 70.

## 24.4 Jiaohe Gouxi

The assemblage of Jiaohe Gouxi in Fig. 24.5 shows large jars with narrow neck and notched appliqué rim strip (8) also seen at Yanghai III (244, Fig. 17.8, 22). The painted pottery jug with open spout (10) diagnostic for the Chawuhugou culture (c. 1000–500/100 BCE), was picked up from the surface and may be out of context (Fig. 24.5).



**Figure 24.5** – Grave assemblage early phase Jiaohe Gouxi (Adapted from Wang Binghua 2001, 8–9, Figs. 6–7; 13, Fig. 12; 15, Fig. 14; 18, Fig. 17; 20, Fig. 19, 21, Fig. 21; 23, Fig. 24; 25–26, Figs. 26–27; 28, Fig. 30; 30, Fig. 33, 32, Fig. 34; 34–36, Figs. 36 and 38–39; 39, Fig. 44; 41, Fig. 48).

The gold sheet pointed arc-shaped belt buckle type from Jiaohe Gouxi has a similar shape as the bone samples from Jiaohe Goubei (Fig. 24.5, 1; compare with Fig. 24.2, upper left). They are reminiscent of samples from Tillya-tepe, made of gold with turquoise inlay, dated 1<sup>st</sup> c. CE.<sup>11</sup> These pointed arc-shaped metal samples are probably later than their bone prototypes. The Tillya-tepe date of 1<sup>st</sup> c. CE may therefore also apply to the Gouxi samples.

Another argument for contemporaneity with Tillya-tepe is the presence of gold with turquoise inlay. This technology was also seen at Jiaohe Gouxi and Shengjindian, suggesting a similar time frame and a change in taste (compare Fig. 24.5, 4; and Fig. 24.6, 8).

<sup>11</sup>Compare Wang Binghua 2001, Plates VIII-4 and IX-2; Hiebert et al. 2011, 279.

One small grey wheel-thrown pot from early Jiaohe Gouxu was dated Wei (220–265)–Western Jin (265–316) suggests the upper bound of Jiaohe Gouxu can be extended to the 3<sup>rd</sup> c. CE (326, Fig. 24.5, 9).<sup>12</sup> Such wheel-thrown pottery was also a late development at Yanghai (245; and 244, Fig. 17.8).

The higher number of *wuzhu* coins (Id., 6) and bronze mirror (Id., 2) suggest intensified contact with the Central Plains (Fig. 24.5, top). A bone endplate for reinforcing bow nocks – now occurring with rhomboid arrowheads (3 and 7) – suggest influence from the steppes the Mongolian steppes and Transbaikalia (see 322).

A gold torque/headdress ornament from Jiaohe Gouxu illustrates influence from the northern steppes (Fig. 24.5, 5). The torque is indeed reminiscent of a sample from Aluchaideng north of Taohongbala in the Ordos (mid 4<sup>th</sup> c. BCE 3<sup>rd</sup> c. BCE), which represented in fact a crown accompanied by a gold skullcap, but it is closer in design to a torque found in Elitnyj in the Kuban region in the northern Black Sea area, dated 3<sup>rd</sup> to middle 1<sup>st</sup> c. BCE.<sup>13</sup>

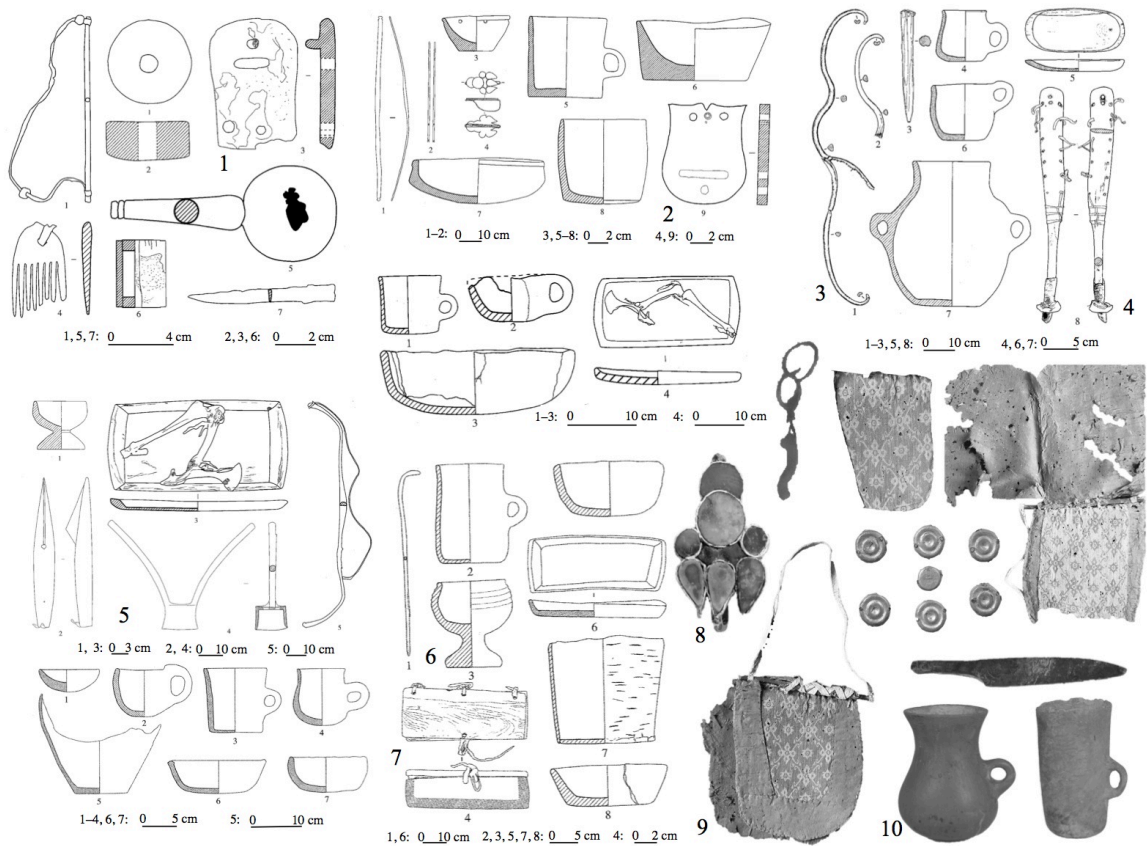
Noteworthy is that the golden torque, gold ornament with turquoise inlay, gold finger ring, and bronze mirror from Jiaohe Gouxu, were all unearthed from shaft graves, suggesting association with an elite buried in shaft graves rather than niche graves, as at Jiaohe Goubei.

<sup>12</sup>Xinjiang Wenwu Kaogu Yanjiusuo 1997, 50, Fig. 6.8; 54.

<sup>13</sup>Compare Tian Guangjin et al. 1986, Plate XVI; and Mordvinceva 2013, 58–59, and 61, Fig. 10.

## 24.5 Shengjindian

The grave goods from Shengjindian in Fig. 24.6 show a bone and wooden arc-shaped bone belt plaques (1 and 2) similar to samples from terrace phases II and III at Yanghai (IIM104:2–3 and IIIM74:11). However, most references to Yanghai correspond with Terrace Phase III, including round-bottomed long-necked jugs (10), fully developed composite bows with recurve (3), wooden assembled rectangular boxes (7) and tall wooden headdresses (5) (Compare with 244, Fig. 17.8, 21, 18, 5 and 4).



**Figure 24.6** – Grave assemblage Shengjindian (Adapted from, *Tulufanxue yanjiuyuan* 2013, 34–35, Figs. 11–12; 37–38, Figs. 19–20, 22; 42, Fig. 31; 44, Fig. 38; 47, Fig. 44; 50–51, Figs. 51 and 57.)

A purse made of silk from grave M13 at Shengjindian, a material not seen at other niche grave sites in the Turfan Basin, is a reference to the Han. The floral pattern on the purse may be local. A gold ornament with turquoise inlay from Jiaohe Gouxu (found in shaft grave M01 together with a gold torque, thumb ring and bronze mirror) resembles a sample from Shengjindian (unearthed from niche grave M20), suggesting contemporaneity (compare Fig. 24.5, 4; and Fig. 24.6, 8).

## 24.6 Conclusion

This chapter assessed grave goods from Jiaohe Goubei (§ 24.2), Subeixi (§ 24.3), Jiaohe Gouxu (§ 24.4) and Shengjindian (§ 24.5), in relation to Yanghai (Chapt. 16; and § 17.2). Similar as for Yanghai Terrace III (229, Tab. 16.3), painted pottery was replaced with red sand-tempered ware at these sites, except for Subeixi III, and less so Subeixi I, where it still existed but possibly only in graves predating the niche graves. Rare examples of painted pottery in niche graves in the Turfan Basin include two drinking cups in the northern niche of M16-2 and its satellite grave M16mb at Jiaohe Goubei (Fig. 24.1), and another sample in the only niche grave from Subeixi III (M25).

Unpainted round-bottomed long-necked jugs and larger jars with narrow neck and notched appliqué rim common on Yanghai Terrace III (244, Fig. 17.8, 21–22), also occurred at Subeixi III and the nearby settlement, Jiaohe Goubei, and Gouxu. At Subeixi I and Shengjindian, only the former but not the latter type is recorded. I suggest the round-bottomed long-necked jugs originated in the Yili Basin. Between 900 and 500 BCE they were mainly painted (85, Fig. 8.4), and between 500 BCE and 100 CE predominantly unpainted (91, Fig. 8.9). Such jugs were mostly single-handled in the Turfan Basin and handleless in the Yili Basin. Rectangular assembled wooden boxes and tall wooden head-dresses known from Yanghai Terrace III (244, Fig. 17.8, 4), also occurred at Shengjindian (Fig. 24.6, 5).

A *wuzhu* coin from niche grave complex M01 at Jiaohe Goubei provides a chronological anchor point for niche graves in the Turfan Basin, dating them c. 2<sup>nd</sup> c. BCE (320). Similarities between niche grave complexes from Yanghai Terrace II (M47–M49) and M01 from Jiaohe Goubei, suggest contemporaneity. Similar bow tips from Goubei and Heigouliang in the Balikun grasslands (106, Fig. 8.19), composite bows with bone endplates and P-shaped metal belt plaques from the Ordos or Mongolian steppe, confirm this timeframe (321, Figs. 24.1–24.2).

With the emergence of niche graves, Bactrian camels formed a new theme in figurative art at Jiaohe Goubei and demonstrated, together with camel sacrifice, the increasing significance of this animal next to horse. Similar openwork camel belt plaques from Babashov in the Amu Darya Basin (c. 200–0 BCE) and the southern Ural (3<sup>rd</sup>–2<sup>nd</sup> c. BCE), indicate their growing importance along this belt (322). Camel sacrifice was also practiced in the Balikun grasslands around 200 BCE (105), and camel dung is recorded for the Trans-Ili

Alatau area, where lateral niche graves were found too (97).<sup>14</sup>

Apart from imported samples, belt buckles from the sites under comparison and Yanghai, were usually designed as rectangular plaques made of bone, horn, wood and iron, or as bone plaques with an arc-shaped ending. Both types became common after niche graves were introduced in the Turfan Basin. The elaborately worked *pointed* arc-shaped bone belt buckles and saddle fittings are characteristic of Jiaohe Goubei and resemble samples from Pazyryk in the Altai and Orlat in the Zaravshan valley (322). One belt buckle from Subeixi I followed that tradition too, while other samples from Yanghai, Subeixi I and III, Jiaohe Gouxu, and Goubei resembled the rectangular belt plaques or arc-shaped bone plaques.

As Lü Enguo observed, saddles from Subeixi I and III resemble Pazyryk samples, depictions from Noin Ula, and molded saddles on pottery horses from Qin Shi Huang's tomb, all dated 3<sup>rd</sup> c. BCE (241; Fig. 17.7; 325).<sup>15</sup> The best preserved saddle came from a niche grave from Subeixi I (Fig. 24.4). At Yanghai, the remains of two similar saddles were found in two shaft graves on Terrace II (M138 and M205), and demonstrate such equipment possibly existed before niche graves were used. A leather horse harness from shaft grave IIM127 demonstrates its military during Terrace Phase II.

Some grave goods suggest later developments. Pointed arc-shaped belt plaques in gold sheet from Jiaohe Gouxu were modelled after bone prototypes known from Jiaohe Goubei. Similarities with gold plaques with turquoise inlay from Tillya-tepe (1<sup>st</sup> c. CE) suggest a similar date (326). Gold with turquoise inlay from Jiaohe Gouxu and Shengjindian indicates a change in taste.

The larger number of *wuzhu* coins and bronze mirror from Jiaohe Gouxu, and the silk purse from Shengjindian suggest increased contact with the central Plains during the Eastern Han (25–220 CE) or its successors, the Wei (220–265) and Western Jin (265–316). Chinese influence probably occurred even later at Yanghai, suggested by a Chinese inscription and *erbei* cup at Yanghai, in combination with cotton, double niche graves and wheel-thrown pottery (245). The wheel-thrown pot from Jiaohe Gouxu also suggests a late upper bound (326).

Double niches, cotton, *erbei*, Chinese inscriptions, sometimes alongside bronze mirrors, silk, and faceted glass cups, also occurred in the Kuruk Tag and Tarim Basin between c. 0–400 CE (§ 8.6). As Armin Selbitschka suggested in his study on prestige goods from graves in Yingpan, Loulan, Zhagunluke, and Niya between the 2<sup>nd</sup> and 5<sup>th</sup> c. CE, such exotic items

<sup>14</sup>Nurmukhanbetov et al. 2016, 11.

<sup>15</sup>Lü Enguo 1999, 383–384.



– imported or copies – served to enhance the owner’s status.<sup>16</sup>

The gold torque from Jiaohe Gouxu resembles samples from the Ordos (mid 4<sup>th</sup> c. BCE to 3<sup>rd</sup> c. BCE) and the northern Black Sea area (3<sup>rd</sup> to middle 1<sup>st</sup> c. BCE) (327), but such precious symbolic goods probably circulated for long before being buried. The torque, gold ornament with turquoise inlay, gold finger ring and bronze mirror from Jiaohe Gouxu, were all unearthed from one shaft grave, suggesting shaft grave rather than niche grave occupants enjoyed status here.

The assessment of grave goods allowed some conclusions on the chronology and network of their owners. Subeixi III and I, Jiaohe Goubei, and Jiaohe Gouxu were largely contemporary with the last stage of Terrace Phase II and Terrace Phase III of Yanghai.

Lateral niche grave practices in the Turfan Basin initially showed stronger influence from pastoralist cultures in the Altai, the Amu Darya Basin, perhaps indirectly the southern Ural steppes, the Ordos and Mongolian steppes, than with the Central Plains. Between c. 200 BCE and 100 CE, contact existed between the niche grave occupants of the Turfan Basin and Balikun grasslands and both showed Xiongnu influence (105).

Links with the Central Plains and Jiaohe Goubei were visible in niche grave complex M01, and intensified as suggested by the increase of *wuzhu* coins and bronze mirror at Gouxu, the *erbei* cup and Chinese inscription from Yanghai, and silk from Shengjindian. Increased influence coincided with exchange with the Indian world via the southern Tarim Basin. The concentration of wealthy objects in shaft graves and modest inventories of lateral niche graves at Jiaohe Gouxu indicates the latter gradually lost their status in the Turfan Basin.

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<sup>16</sup>Selbitschka 2010.

## 25 Interpretation and evaluation of the results

The regional comparative analysis in Part IV assessed the site cluster Subeixi, Jiaohe Goubei, Jiaohe Gouxu and Shengjindian, selected based on the presence of documented lateral niche graves. Understanding the chronology of these sites was challenging, even though their assemblages largely overlap with the late Terrace Phase II and Terrace Phase III at Yanghai (c. 200 BCE–200 CE). A considerable part of Subeixi III may be contemporary to Terrace Phase II (§ 20.2; Chapt. 24).

A similar though more limited parameter set, related to grave architecture (Chapt. 21), human remains (Chapt. 22), animal remains (Chapt. 23), and grave goods (Chapt. 24) used for analysis at the site level (see Part III) was used. Despite the small sample size (150 graves) and the incomplete reporting in comparison with the dataset of Yanghai (519 graves), significant observations were made.

In the 2<sup>nd</sup> c. BCE, a new cemetery was opened up at Jiaohe Goubei. Its layout was carefully planned and showed a hierarchical distribution centred on two main niche grave complexes (M01 and M16), with ancillary animal pits and graves (287, Fig. 20.6). These complexes featured mounds of 15 respectively 26 m in diameter, and were reinforced at the base with mud brick ringwalls (295–297, Figs. 21.5–21.9). Jiaohe Goubei counted at least one other similar construction (M27), but with a smaller ringwall (298, Fig. 21.11). Similar grave complexes with mud brick ringwalls (IIM47, IIM48 and IIM49) were installed north of Terrace II at Yanghai, and covered with mounds measuring c. 10 m in diameter (173, Fig. 12.2; 295, Fig. 21.4).

The similarity in construction of the niche grave complexes at Yanghai II and Jiaohe Goubei (esp. M01), and a *wuzhu* coin in the latter (320) situate them no earlier than the 2<sup>nd</sup> c. BCE. That Jiaohe Goubei also overlapped with Yanghai III, is evidenced from similar wooden figurines at both sites (321, Fig. 24.2 (bottom right); and 244, Fig. 17.8, 3).

Analysis of grave orientation, after correction in QGIS, made me suggest three building phases for Jiaohe Goubei (§ 21.3). This was based on observations from Yanghai, where grave orientation along the EE-WW axis was more stable (though steadily decreasing), while the other two orientations, NE/SW respectively SE/NW, were negotiated at each other's expense. When the former increased in number, the latter decreased. Moreover, while the innovative NE/SW orientation was strongly associated with the innovative niche grave practices, the SE/NW was a more conservative grave orientation which, on terraces I and II, represented the second-most important grave orientation next to the mainstream EE/WW orientation (compare with 202, Tab. 14.5). Furthermore, while SE body orientations occurred predominantly in the more archaic flexed body postures (on the back and on the side), the NE body orientation almost exclusively occurred in the innovative extended body postures (203, Tab. 14.6).

Three phases were subsequently distinguished for Jiaohe Goubei: 1) an Early Phase (Cluster M01); 2) a Middle Phase (Cluster TREX); and 3) a Late Phase (Cluster M16). These were based on a slight but progressive decline in EE/WW, an increase in NE/SW, and decrease in EE/WW orientations (301, Tab. 21.2). The increasing NE/SW grave orientation (or NE body orientation), diagnostic of niche grave practices at Yanghai, suggests increasing control of a niche grave elite over the local population and – in combination with other parameters such as double niches and other architectural changes (318) – I interpreted this as indicative for a later date.

The elite status of niche grave occupants at Jiaohe Goubei was further demonstrated by the type and number, completeness and location of animals sacrificed (Chapt. 24). Out of total MNI of 86 animals, 76 (71 horses, 5 camels) were sacrificed for the occupants of the two central niche grave complexes. The addition of more camels in M16 in comparison with M01, indicates a status or chronological difference. Camel and horse sacrifice could only be afforded when the herd had grown big enough to produce surplus. Analysis further demonstrated that both Jiaohe Goubei, Terrace Phase II and to some degree Terrace Phase III, preferred horse burial in satellite pits. However, satellite pits situated *within* mud brick ringwalls only figured at Yanghai II and Jiaohe Goubei M01 and M27, while such satellite pits at Jiaohe Goubei M16 were situated *outside* of the ringwall, and deposition in the entry shaft prevailed at Yanghai Terrace III.

The other sites tell a different story. No hierarchic distribution, prestigious niche grave complexes (Jiaohe Goubei and Yanghai II), niche grave majority (Yanghai III), nor lavish animal sacrifice (Jiaohe Goubei and Yanghai II) suggest lateral niche grave occupants

enjoyed status. Instead, niche graves represented minorities at Subeixi I, Jiaohe Gouxi and Shengjindian. Similar to Yanghai III, these sites exhibited a side-by-side distribution of Type D and C and occasionally Type B graves (§ 20.3), a preference for double and multiple burial practice (apart from Jiaohe Gouxi where single burial was common) (§ 22.3), extended burial (apart from Shengjindian) (Tab. 22.1); and finally a WL-ratio of the shaft mouth  $\leq 0.5075$  (category ‘narrowest’) (§ 21.5). There was quite some variation in niche orientation in the Turfan Basin, even though SS niches prevailed in graves orientated EE/WW, and NW niches in graves oriented NE/SW (§ 21.4).

Analysis of Shengjindian, a fully excavated cemetery, demonstrated that burial practices showed a strong degree of conservatism and that niche grave occupants – who enjoyed no particular status – followed these largely. The small ratio of niche graves and side-by-side distribution with shaft graves, indicated no special status (289, Fig. 20.8). The conservatism is illustrated by variables showing the same pattern as on Yanghai Terrace II. Firstly, the small share of NE/SW orientations and the high share of SE/NW orientations observed at Shengjindian was also seen in one-third of the graves on Yanghai Terrace II (compare 303, Tab. 21.4, with 202, Tab. 14.5). Secondly, the prevailing ‘flexed on the back’ posture at Shengjindian was also the dominant practice on Yanghai Terrace II (compare 310, Tab. 22.1, with 198, Tab. 14.3). Thirdly, a third of the population at Shengjindian enjoyed sheep/goat sacrifice, similar to Type C graves at Yanghai II (compare 316, Tab. 23.2, with 219, Tab. 15.4).

Despite this conservatism in grave orientation, body posture and animal sacrifice, diagnostic of Yanghai Terrace II, grave goods such as wooden headdresses, assembled rectangular wooden boxes and fully developed composite bows with recurve, and the presence of double niche graves at Shengjindian, are more characteristic of Terrace Phase III, and therefore confirm contemporaneity with the latter (compare 328, Fig. 24.6, with 244, Fig. 17.8). I therefore suggest that the parameters exhibiting a strong conservatism were deliberately maintained to emphasise local identity.

Chapt. 24 discussed variability in grave goods and shifting networks. The most obvious change with the emergence of niche graves was the sudden disappearance of painted pottery, just as a Yanghai (229, Tabs. 16.4 and 16.3). Lateral niche graves containing painted pottery are rare in the Turfan Basin, including the only niche grave from Subeixi III holding one piece (323), and niche grave complex M16 from Jiaohe Goubei holding two pieces (321, Fig. 24.1).

Jiaohe Gouxi provides yet another perspective on how niche grave practices were adopted

in the Turfan Basin. The concentration of prestigious gold objects including a torque, belt buckles, several *wuzhu* coins, (chin) straps (326, Fig. 24.5), and two horse skulls, in shaft graves rather than niche graves is remarkable. This, together with the insignificance of NE/SW grave orientations, the prevalence of single burial, and the absence of whole horse sacrifice, all suggest niche grave elites had yielded power to shaft grave occupants (303, 312, 317, Tabs. 21.3, 22.2 and 23.3). However, the small sample may give a distorted image of Jiaohe Gouxu. Finally, any cross-dating of the torque, based on similarities with the Ordos or Kuban area samples, should consider that precious and symbolic objects probably circulated for different generations before they were deposited into a grave (327).

Shortly after niche grave practices were introduced in the Turfan Basin at c. 200 BCE, grave goods continued to show strong links with pastoralist cultures in the Altai, as demonstrated by pointed arc-shaped bone belt plaques and saddles, but they were also firmly embedded in a larger supra-regional network. The latter reached towards the Amu Darya Basin evidenced by pointed arch shaped belt plaques, and indirectly the southern Ural steppes in the west, suggested by the sudden significance of camel as demonstrated by camel plaques in niche grave using cultures at Jiaohe Goubei, Babashov and the southern Ural, the find of camel dung in Trans-Ili Alatau, and camel sacrifice at Jiaohe Goubei.

To the east, the network of the niche grave elite from the Turfan Basin, reached to the eastern Tianshan, Hexi Corridor, Ordos, Transbaikalia, and Mongolian steppes. This is evidenced from the P-shaped metal belt plaques from Jiaohe Goubei and Subeixi I, fully developed composite bows with recurve and bone endplates, even though the composite bow (without diagnostic bone endplates) was already known before the introduction of niche graves. The origin of quiver hooks, excavated from Subeixi III (M13-11) and Yanghai III (IIIM35-7), is unknown (324, Fig. 24.3, 8c; 244, Fig. 17.8, 20).

Contact with the Western Han had little influence on the assemblage of Jiaohe Goubei, suggested by a single *wuzhu* coin (dated no earlier than the late 2<sup>nd</sup> c. BCE) and a few lacquer items from niche grave complex M01, but exchange intensified by the turn of the Common Era. The more numerous presence of *wuzhu* coins (Jiaohe Gouxu), the appearance of silk fabrics (Shengjindian) and a bronze mirror (Jiaohe Gouxu) – even if copies – indicate increased contact with the Eastern Han (25–220 CE) or its successors, the Wei (220–265) and the Western Jin (265–316).

At Yanghai, influence from the Central Plains can only be confirmed for the last stage of Terrace Phase III, as evidenced from a wooden *erbei* cup (IIIM29) and a wooden slip with Chinese inscription (IIIM76). Such objects occurred in association with double niche

graves (IIM76), wheel-thrown pottery jars without handles (IIM76, IIM29), and cotton (IIM76, IIM37 and IIM80), which can thus also be considered as late. Cotton suggests contact with Gandhara or the Indian world, perhaps via the Fergana Basin or the Tarim Basin. A date of 433 CE obtained from a Chinese inscription in an isolated double niche grave north of Yanghai Terrace I (2006TSYI IM4, see 246), indicates the upper bound for these late developments may extend into the early 5<sup>th</sup> c. CE.

Similar developments are seen elsewhere and confirm a later chronology (§ 8.6). Indeed, a bronze TLV-mirror, silk fabrics, gold with turquoise inlay, a lacquer sheath, pottery jars without handles (though hand-made), bone endplates for complex bows, bone belt plaques with arc-shaped endings and, hammered gold rectangular plaques with zoomorphic (camel?) motif, and double niche graves all figure at Chawuhugou III (c. 0–150 CE), and confirm the distribution of such objects after the Common Era for the central Tianshan area too (109 ff.).

Comparison with sites in the Kuruk Tag and southern Tarim Basin support a similar chronology (c. 50–400 CE). Both Yingpan and Zhagunluk I (Phase III) yielded silk, cotton and *erbei* cups. They were found in association with glass faceted cups at both sites, and with bronze mirrors and Kharoṣṭhī writing at Yingpan, and double niche graves at Zhagunluk I during Phase III (114ff.; 116 ff.). Moreover, depictions of camel already figured on wooden containers during Phase II of Zhagunluk I (c. 800 BCE–50 CE).<sup>1</sup> Camel was an important asset promoting exchange across the Tarim Basin as camel riding made crossing the desert a lot easier.

To conclude, the first niche grave elites established a power centre at Jiaohe Goubei around c. 200 BCE. Their status relied on western connections with the Amu Darya Basin heavily influenced by cultures from the southern Ural and lower Volga region, next to eastern connections with the Ordos, Mongolian steppes, and the Han empire. It is possibly they engaged in horse and camel trade between the these regions, which would have enhanced status and intensified exchange with cultures in the Tarim Basin, though this needs further investigation. Sxchange of prestige goods was facilitated by Jiaohe Goubei's strategic position on a high-rising alluvial terrace at the crossroads of major routes, with access to areas south and north, east and west of the Tianshan mountains including abundant pastureland in the central Tianshan mountains (282, Fig. 20.1).

Comparative analyses in Part IV demonstrated the differential way niche grave practices were integrated in the Turfan Basin, depending on the community who introduced or

<sup>1</sup>Xinjiang Weiwu'er Zizhiqu Bowuguan et al. 2003, 110, Fig. 21-11.

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adopted them. Jiaohe Goubei embodied the submission of a local shaft grave people by an intrusive niche grave people. At Jiaohe Goubei and Yanghai, the majority ratio and/or elaborateness of niche graves suggest the presence of a niche grave elite who dominated burial rituals of the local community to assert their power. The manipulation of body orientation seemed a powerful tool here to enforce allegiance to new rulers. Yanghai Terrace III showed a much less hierarchical profiling of niche graves against shaft graves, which were now randomly distributed side-by-side. Nevertheless, the majority ratio, whole horse sacrifice and dominance of the innovative NE body orientation still betrayed the high status of niche grave occupants. When niche grave practices were adopted by the Shengjindian community, local identity was highlighted, translated in a stronger conservatism in grave orientation, body posture, animal sacrifice and a smaller ratio of niche graves.

The late introduction of cotton, wheel-thrown pottery and increased Chinese influence announced the start of a reconfiguration of network connections announcing the waning power of niche grave elites in the Turfan Basin. Camel riding encouraged contacts with oasis people in the Tarim Basin, but niche grave occupants relied too much on pastoralism to thrive long in these places. Intensified contact with the southern Tarim opened the door for influence from the Gandharan, Indian and Persian worlds, as evidenced from sites in the Central Tianshan area, Kuruk Tag, and southern Tarim Basin.

## Part V

# Final conclusions on the identity of the lateral niche grave population of the Turfan Basin



## 26 Introduction

This dissertation investigated the emergence of lateral niche graves in the Turfan Basin and their significance in an Inner-Eurasian context. Research questions in § 1.1 included: 1) Was the lateral niche grave form in the Turfan Basin an autochthonous or allochthonous development? 2) If allochthonous, was this resulting from acculturation and/or migration, and can it be linked to similar practices elsewhere in Inner Eurasia? 3) Finally, is the research category ‘niche grave’ significant at all, and relevant to understand the identity of its occupants and makers?

Research took place at the supra-regional, site, and regional level: Inner Eurasia (Part II), Yanghai (Part III), and the Turfan Basin (Part IV). At the site and regional levels, mortuary variability was investigated to explore patterns of (dis)continuity in burial practices. A fivefold set of parameters was assessed for Yanghai, related to grave architecture (Chapt. 13), human remains (Chapt. 14), animal remains (Chapt. 15), grave goods (Chapt. 16) and chronology (Chapt. 17), as these were considered the main referers of information in the cemetery (25). Roughly the same set was assessed at the regional level.

The strength of the methodology for the site and regional analyses was the bottom-up approach (Chapt. 3). Data were collected at the lowest possible level, so that they could be aggregated at any moment to the level wanted. This allowed looking at the data from multiple perspectives, views, or paradigms. The bivariate contingency tables resulting from this served as a basis upon which research questions could be addressed and hypotheses formulated (32, Fig. 3.6). For Yanghai, 519 out of a total estimate of c. 3000 graves were analysed. The regional dataset was less solid with only 150 graves. About 5300 entries were inputted into a specially designed database (28–28, Figs. 3.1 and 3.2).

A review of different niche grave sequences in Inner Eurasia (Part II) enabled placing quantitative results of Yanghai and the Turfan Basin into a broader perspective and addressing questions of acculturation and migration (Chapt. 28).

## 27 Local and regional developments

Investigation of the case study site Yanghai (Part III), led to the following conclusions on the identity of the lateral niche grave population at site level.

At about 200 BCE, a small elite buried their dead in lateral niche graves north of Terrace II at Yanghai. Three out of five niche graves on this terrace showed elaborate burial structures including mounds with embedded mud brick ring walls and a horse pit north of the grave, with one grave featuring an additional horse inside the entry shaft (173, Fig. 12.2; 295, Fig. 21.4).

On Terrace III, lateral niche graves became the dominant grave type distributed side-by-side with shaft graves (173, Fig. 12.2). The elaborate surface structures had disappeared, but part of the niche grave occupants still enjoyed more status than shaft grave occupants, as evidenced by the fact that this was the majority grave type (180, Tab. tab:YanghaiGrT) and the whole horse sacrifice they enjoyed, notably males (Chapt. 15). That niche and shaft grave occupants had different affiliations on Terrace III, is attested by the former favouring the innovative NE next to EE body orientation, and the latter a WW body orientation (202, Tab. 14.5). Other variables indicate continuity between both on Terrace III, notably the WL-ratio of the shaft mouth (§ 13.5), double and multiple burial practice (§ 14.5), and the random side-by-side distribution. This suggests the occupation of Terrace III was a joint venture of shaft and niche grave adherents.

At the regional level, data from Subeixi, Jiaohe Goubei, Jiaohe Gouxu, and Shengjindian were used for comparative analyses (Part IV). These sites exhibited a differential adoption of niche grave practices by local communities in the Turfan Basin. All featured a similar setting and co-existence of niche and shaft graves, and occasionally ledged shaft graves (§ 20.3).

At Jiaohe Goubei, the hierarchical and linear distribution pattern, complex niche grave structures, and horse sacrifice resembled the situation on Terrace II at Yanghai, indicating contemporaneity (compare 287, Fig. 20.6; with 173, Fig. 12.2). However, more elaborate sacrifice of horse, camel, and humans at Goubei demonstrated that niche grave elites had

subdued the local shaft grave population.

Based on varying ratios of grave orientation, and after comparison with Yanghai, I proposed a phased expansion of the Jiaohe Goubei cemetery (332). The earlier date of niche grave complex M01 was corroborated by similarities with the niche grave complexes of Yanghai Terrace II, including horse pits north of the grave pit inside the mud brick wall (compare 295, Figs. 21.4 and 21.5). The later date of M16 was corroborated by the disappearance of horse pits inside the mud brick ringwall, the addition of grooves at the entrance of the niche, double niches, niches positioned half-way up the wall (296, Figs. 21.6 and 21.7), and changes in number, location, and type of animals not seen at Yanghai (compare Chapt. 15 and 23). Complex M16 saw the addition of more camels, a disappearance of horse pits inside the mud brick ringwall, and an increase of such pits outside of it.

As concluded in Chapt. 25 based on the comparative research of Part IV, niche grave practices integrated differently in the Turfan Basin, depending on the community who adopted them. At Jiaohe Goubei, and during the last stage of Terrace Phase II at Yanghai, a small but intrusive niche grave elite asserted their authority over a local shaft grave population around 200 BCE. At Subeixi III, Jiaohe Gouxi, and Shengjindian niche graves represented minorities distributed side-by-side with shaft graves. The random distribution of shaft and niche graves shows an egalitarian use of the burial ground and increasing integration of both burial systems. Neither grave construction, animal sacrifice, nor grave goods suggested niche grave occupants enjoyed status. The rare find of painted pottery in a niche grave at Subeixi does not prove anteriority to the other sites, as this was also occasionally seen at Jiaohe Goubei (334). At Jiaohe Gouxi, wealth and status symbols concentrated in shaft graves, implying shaft grave occupants enjoyed more status than niche grave occupants. At Shengjindian, local identity was promoted, through conservatism in grave orientation (303, Tab. 21.4) and body posture (310, Tab. 22.1).

## 28 Supra-regional connections

Analysis of mortuary variability at the site and regional level (Parts III and IV) provided anchor points for hypothesising on how niche grave practices in the Turfan Basin related to other traditions in Inner Eurasia (Part II).

I postulate that a number of simultaneous developments affected the dispersion of lateral niche grave practices in Inner Eurasia during the late Early Iron Age. Three areas played a prominent role: 1) the Yili Basin (§ 28.1) with a strong connection to the Talas valley, Issyk Kul and Fergana Basin; 2) the southern Ural steppe (§ 28.2) with a strong connection to the Amu Darya and Fergana basins; and 3) the eastern Hexi corridor (§ 28.3), which accounted for a distribution into the Balikun grasslands and the Turfan Basin.

### 28.1 The Yili Basin connection

Lateral niche grave practices in the upper Yili Basin from c. 900 BCE onward (§ 8.2), did not trigger their introduction into the Turfan Basin. Despite clear anteriority, other developments suggest they had more influence on areas further west. Arguments were discussed in § 10.2 and are summarised here.

Between c. 900 and 500 BCE, a centre of lateral niche grave practices emerged in the upper Yili Basin, represented by Qiongkeke I in the upper Yili Basin (82 ff.). It succeeded the local Andronovo/Karasuk culture and resulted from contact with the Beshkent-Vakhsh culture (c. 1300–1000 BCE), which represented the easternmost distribution of a sequence of niche grave practices in the Amu Darya Basin (158).

Between c. 500 and 300 BCE the upper Yili tradition underwent changes (86 ff.) and triggered dispersion into the Trans-Ili Alatau foothills around 500 BCE (§ 8.3), and by 300 BCE into the middle Yili Basin resulting in the Kapshagay tradition, popular between 100 BCE and 100 CE. The grave architecture, western body orientation, and some pottery forms indicate continuity of the latter with Qiongkeke I (89, ff.). Lateral niche grave practices in

the southern Ural may also result from dispersion from the Yili Basin, but this needs further investigation (160). However, no evidence exists that lateral niche grave practices emerged in the Turfan Basin through contact with the Yili Basin, despite awareness of such practices and a similar linear distribution on Yanghai Terrace II (101 ff.).

These westward movements led to a near abandonment of lateral niche grave practices in the upper Yili Basin after c. 300 BCE. Innovative features in the few niche graves left suggest contacts with the Turfan Basin (cf. Qirentuohai). Longitudinal and perpendicular niche graves at Kalasu and Shankou Shuiku occasionally seeped in from the Talas River into the upper Yili Basin via the Tekes valley after 100 CE (159–159).

After c. 300 BCE, this westward push from the Yili Basin continued and possibly influenced burial practices in the Isfara and Sokh valleys in the southwestern Fergana Basin, and the Beshkent valley, where they appeared after c. 200 BCE (§ 7.5 and § 7.7). Influence from the Yili Basin is strongly suggested by their chronology and by a similar architecture: lateral niche graves, stone mounds with a very similar structure, deep grave shafts, predominantly single extended burials and absence of horse sacrifice (compare the lateral niche graves in 85, Fig. 8.3; 59, Fig. 7.5; and 70, Fig. 7.14).

I argued two centres of lateral niche grave elites took form in the southwestern Fergana and Beshkent valleys – the latter perhaps as a summer camp – supported by the prevalence of lateral niche graves, prestigious items, extensive networks and strategic position (161–162).

## 28.2 The Southern Ural connection

A third centre of lateral niche grave practices was located in the southern Ural steppes, where this grave form was seen at least from the 4<sup>th</sup> c. BCE onward, and flourished between c. 200 BCE and 100 CE (§ 6.4).

As argued in § 10.2 (160–161), a cultural push from this centre after c. 200 BCE resulted in the distribution of lateral niche practices – together with the elsewhere in the Pontic-Caspian steppe originating perpendicular and longitudinal niche grave types – and diagnostic Sarmatian goods as far as the western Tianshan and Pamirs.

Southwestward, they spread into the Crimean peninsula (§ 6.5), eastwards into the mid-Ishim region and southeastward into the Bukhara and Samarkand oases of the Zaravshan Basin (§ 7.6), the Fergana Basin (§ 7.7), the Talas valley and the shores of Issyk-Kul (§ 7.8), perhaps with some spill-over of perpendicular and longitudinal niche graves into the Yili

basin (159–159).

This eastward cultural push from the southern Ural steppes, together with a western push originating in the Yili Basin (§ 28.1), suggest that two lateral niche grave traditions encountered each other in the drainage areas from the Syr Darya and Amu Darya.

The overlap of cultures east and west of the Tianshan and Pamirs is also reflected in the mix of grave goods in the Fergana Basin, with links to the Central Plains, eastern steppe empires, Indian and Persian worlds, next to strong Sarmatian influence (67, Fig. 7.12). Some (prestigious) goods found here, including cotton, bronze mirrors and silk, were also found in the Turfan Basin. Such objects appeared relatively late here, suggesting their circulation and exchange postdated the heyday of lateral niche grave elites (330). There are further hints that the Turfan Basin, and notably Jiaohe Goubei, was connected to the Amu Darya Basin, as suggested by pointed arc-shaped bone belt buckles, bone endplates for reinforcing bow nocks, and a shared interest in horse and camel.

## 28.3 The Eastern Hexi connection

Chronology and developments in the Late Shajing culture in the eastern Hexi corridor (§ 9.5), led me to hypothesise in § 10.3 that a westward cultural push from this area triggered the adoption of lateral niche graves around c. 200 BCE in the Balikun grasslands and the Turfan Basin.

The anteriority of lateral niche grave practices in the Late Shajing culture (c. 600–300 BCE) discussed in § 9.5.1, supported by influence from the Yanglang and Taohongbala cultures (136 ff.; 147), was an important argument to claim westward influence. Between c. 300 and 200 BCE, as argued earlier (152 and 164), lateral niche grave practices of the Late Shajing culture, displaying northern steppe influences, spread northeastward reaching the Ordos (Daodunzi), middle Yenisei and Minusinsk Basin by 200 BCE (139 ff.). At the same time, they spread westward into the Turfan Basin and Balikun grasslands (§ 8.5).

The late Siba culture in the western Hexi corridor, I argued, may have been a similar and competing culture to that of the Late Shajing to the east (152; 164). The former featured lateral niche grave practices, animal and human sacrifice, and may have triggered the emergence of lateral niche graves in the eastern Tianshan area, notably the Balikun grasslands. Transmission was possibly enhanced through seasonal mobility between the summer camps of Dongheigou and Heigouliang, and winter camps in the Hami Basin and eastern Hexi corridor via the Mazong range (123, Fig. 9.1). Insufficient reporting of the

Siba Huoshaogou site including its chronology (132 ff.) obstruct further study, though it possibly shared similar origins to the Shajing culture (163).

Westward transmission is supported by the simultaneous distribution of northern steppe features including belt buckles at Heigouliang and Dongheigou, Jiaohe Goubei (321), Fig. 24.1; Jiaohe Gouxi (though concentrated in shaft graves here, 326, Fig. 24.5), and Subeixi (324, Fig. 24.4), and composite bows with bone endplates at Goubei, Gouxi and Yanghai (244, Fig. 17.8, 16).

Another argument is the centrality of animal sacrifice. In the last stage of the Late Shajing culture, represented by Hamadun, sacrifice of sheep, cattle, and horse was strongly associated with niche graves, and horse sacrifice exclusively with male niche grave occupants (149). It was usually the head which was offered. In the Balikun grasslands, sheep, cattle, whole horses and whole camels were sacrificed (105). In the Turfan Basin, niche grave elites sacrificed whole horses and camels, while sheep/goat sacrifice became insignificant (Chapts. 15 and 23). Furthermore, at Yanghai and the Late Shajing graves, depositing horse tack into graves became obsolete (§ 16.4; 147, Fig. 9.17).

The Late Shajing culture resembled that in the Turfan Basin more than in the Balikun. Firstly, communities of the former two practised mainly pastoralism with limited crop far-ming, showing a considerable degree of sedentism suggested by the walled city of Sanjiaocheng (142, Fig. 9.13), the settlement of Yanghai, and perhaps the old city of Jiaohe.

Secondly, a similar setting on stream-built clay terraces is seen at Hamadun (9.14, Fig. 9.14), Subeixi, Jiaohe Goubei, Gouxi and Yanghai (173, Fig. 12.2; and § 20.3). The stone summer camps of the Balikun niche grave occupants also suggest sedentism next to pastoralism, but its construction and setting is different (103, Fig. 8.16).

Thirdly, the Late Shajing and Turfan Basin niche grave occupants favoured similar body orientations. In the former, NN and NE orientation was common (Tab. 9.2). In the latter, EE and NE orientations were common (§ 14.3; § 13.4 and § 21.3). In the Ordos, Mongolian steppes and southern Siberia, niche graves featured a northward orientation too (139 ff.). A northward orientation prevailed in Xiongnu burial rite, while eastern orientations remained important.<sup>1</sup> The meridional orientation in these areas suggests a shared group identity, resulting from alliances or cultural influence.

The above challenges Han Jianye's view that niche grave practices from the Late Shajing, Yanglang and Taohongbala cultures, the Turfan and Yili basins, all resulted from western influence (19–20). This is refuted by the anteriority of the Shajing niche graves to the Ba-

<sup>1</sup>Turbat 2011, 142.

likun grasslands and Turfan Basin ones, and the differences with the Yili practices, although western origins can still be claimed for the latter (§ 28.1).

Allowing for transmission from the Shajing culture, how did niche grave centres in the Turfan Basin and Balikun grasslands relate to each other? In both, niche grave occupants qualified as elites to whom niche making was central to their identity. The elaborate niche grave structures, lavish animal sacrifice, and grave goods at Jiaohe Goubei, attested even more to a ruling elite than at Yanghai. (Chapt. 27). A *wuzhu* coin dated their emergence no earlier than the 2<sup>nd</sup> c. BCE (320).

That Jiaohe Goubei represented a power centre is attested to otherwise. Though it cannot be confirmed these people dwelled in the nearby Jiaohe city (283), this was a strategic area in the central Tianshan region, with access to abundant pasture, key valleys and routes (Fig. 20.1). The Jiaohe Goubei niche grave elite accumulated status through connections with the Han and the steppe empires to the northeast, and the Amu Darya Basin, as reflected in belt buckles, camel sacrifice, a *wuzhu* coin and lacquer items (321–321, Figs. 24.1 and 24.2).

Jiaohe Goubei showed stronger links to the eastern than western Tianshan. Connections with Dongheigou and Heigouliang in Balikun grasslands, two stone summer camps with large cemeteries and ritual facilities, are epitomised by similar bow tips (Fig. 8.19 on 106). Contact with the upper Yili Basin was limited (cf. Qirentuohai, 93–94). Remains from Shihezi Nanshan, Choumeigou, and notably Chaiwopu, nevertheless attest to an intermediate niche grave people supporting a network between the Yili Basin, Turfan Basin, and Balikun grasslands (§ 8.4 and Fig. 8.19 on 106).

Affinities between the burial practices at Jiaohe Goubei and Balikun are further supported by similar (mounded) lateral niche graves, whole horse and camel sacrifice, and similar bow tips (106, Fig. 8.19). However, cattle and human sacrifice was only seen in the Balikun grasslands. Even more so than in the Turfan Basin, grave goods in Balikun attest of influence from the Ordos and Mongolian steppes, illustrated by gold and silver plaques similar to samples from Inner Mongolia and the use of wooden burial devices assembled *in situ* (§ 8.5). Both areas interacted with the Central Plains, illustrated by a bronze mirror fragment found at Heigouliang (103), and a *wuzhu* coin and lacquer items from Jiaohe Goubei. Finally, while single extended burial prevailed in the Balikun grasslands, Heigouliang had an important number of double or multiple burials, another feature characteristic of niche graves in the Turfan Basin (105, § 14.5 and § 22.3).

Despite these similarities of lateral niche grave practices between the Turfan Basin and



Balikun grasslands, different body orientations suggest different affiliations. A NE next to EE body orientation prevailed in the former (§ 14.3; § 13.4 and § 21.3), while a WW body orientation prevailed in the latter (103).

Analysis of grave and body orientation at Yanghai indicated these parameters are slow changers, characterised by conservatism (§ 13.4 and § 14.3). The abrupt change after niche graves were introduced resulted from radical changes in ideology or political affiliation. Pronounced differences in body orientation between both areas suggests different group identities. Finally, there are no indications that the shaft graves with western orientation at Yanghai had a link with the Balikun community (202, Tab. 14.5).

How can the Yanghai niche grave occupants further be identified against the background of discussions on cultural change, migration and mobility (§ 2.7 and § 1.4)? In Chapt. 27 and 25, I discussed the emergence of niche grave elites at Jiaohe Goubei and Yanghai, notably during Terrace Phase II, where both shared similar burial structures, and to a lesser degree Terrace III. I claimed that small-scale migration possibly accounted for the initial disruptive changes in burial practice in the Turfan Basin after c. 200 BCE. Soon after, the progressive but differential integration of innovative niche grave practices with existing traditions highlighted instead adoption and adaption by locals, i.e. acculturation (Chapts. 18 and 25; 272).

If, as claimed in Chapt. 27, niche grave elites made their entry on Terrace Phase II, how could they have maintained their status in Terrace Phase III? Possibly, their status was accumulated based on military skills, as suggested by the long tradition of horseback riding and bow shooting, whereby complex bows were used, the lightness and long draw of which were suited for mounted warfare (244; 274). Yanghai could thus have provided mounted archers or cavalry in service of the Jiaohe Goubei elite. These presumed military skills of the Yanghai niche grave occupants cannot be confirmed but could be further investigated on the basis of the database. However, the sudden practice of whole horse sacrifice (219, Tab. 15.4) highlights the centrality of horses in the Yanghai culture and, together with the increased intake of animal protein, this may indicate a sudden accumulation of livestock assets through mounted warfare (§ 14.6).

Initial migration may be enhanced by seasonal mobility and horse riding, practiced in the Turfan Basin, Balikun grasslands and Hexi corridor (273; 107). As discussed in § 1.4 and § 2.7, such mobility promoted information exchange and lowered the threshold of migration. Similar environmental conditions, such as the stream-cut terraces of the Turfan and Yongchang basins in the Hexi corridor, were probably an extra stimulus to move.

Investigating what triggered cultural transmissions and migrations from the eastern Hexi corridor is beyond my ambition here. However, one push factor cannot be ignored, i.e. that of the expansion of the Xiongnu confederation, which by the 3<sup>rd</sup> to 2<sup>nd</sup> c. BCE had formed an empire encompassing Manchuria, Baikal, the Ordos, parts of Xinjiang, the Altai, and beyond.

The Xiongnu confederation initiated an enormous cultural push triggering population movements – perhaps less massive than recorded in Chinese sources – and transmissions of cultural elements, countering the predominant western influences during the Bronze Age and much of the Early Iron Age in the Tianshan Mountains and adjacent basins (79–81). Distribution of diagnostic belt buckles, increased animal sacrifice and/or increased intake of animal protein all resulted from this. Changes in such conservative variables as body orientation may be interpreted as new allegiances to the Xiongnu confederation. The Late Shajing niche grave population could have joined or at least be affected by expansions of the latter. Lateral niche grave practices from the Shajing culture may have been transmitted westward as a result of this.

Finally, in § 8.6, I postulated that the distribution of small niche grave concentrations towards Chawuhugou (c. 0–150 BCE), the Kuruk Tag, and the Tarim Basin (c. 50–400 CE), were all spin-offs from lateral niche grave traditions in the Turfan Basin and the Tianshan area. The small size of the Chawuhugou niche grave population in an otherwise strategically important area may be explained by the fact that Jiaohe Goubei had taken over its role as regional centre.

## 29 Conclusion: who were the Turfan niche grave occupants?

Around 200 BCE, the Turfan Basin saw the emergence of lateral niche grave practices. As postulated in § 28.3, this resulted from a transmission – and possibly small-scale migration – from the Late Shajing culture in the eastern Hexi corridor, following a strong westward cultural push triggered by the formation of the Xiongnu confederation. Two centres of niche grave practices formed, one in the Balikun grasslands in the eastern Tianshan Mountains and another in the Turfan Basin. Those centres were closely connected but showed different affiliations. As argued in § 28.1, it is unlikely that lateral niche grave practices in the Yili Basin led to their adoption in the Turfan Basin. Despite the anteriority of the former, part of its population possibly migrated from the upper to the middle Yili Basin at c. 300, and at the same time triggered a series of events west of the Tianshan and the Pamirs.

Investigations at the local and regional level synthesised in Chapt. 27 suggested that, between c. 200 BCE and 100 CE, a pastoralist elite controlled the Turfan Basin from Jiaohe Goubei, a strategic position in the Tianshan area. The elite here derived their power from a clever navigation between eastern and western powers. They were buried in mounded lateral niche grave complexes surrounded with horse and camel pits and satellite graves.

The way lateral niche grave practices in the Turfan Basin were adopted and adapted depended on the community (Chapt. 25). The developments in Jiaohe Goubei M01 coincided with the late Terrace Phase II at Yanghai, where similar though more modest mounded niche grave structures with horse pits were found. At both sites we see a relatively sudden adoption of an intrusive niche grave elite, just as at Jiaohe Goubei. After that, we see a steady integration of niche grave practices next to shaft grave practices on Terrace III at Yanghai, where male niche grave occupants nevertheless still represented an elite enjoying whole horse sacrifice.

For a full assessment of (dis)continuity in burial practices with respect to the niche

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grave innovation at Yanghai, a twofold perspective was adopted: the first investigated the transition between Terrace Phase II versus Terrace Phase III; and the second assessed the relation between shaft and niche grave occupants of Terrace Phase III. Both perspectives showed aspects of (dis)continuity, as discussed in Chapt. 18 (esp. 272–272), and can be summarised as follows.

The disruptive character between burial practices of terraces II and III was evident from their spatial segregation, the disruption in the radiocarbon sequence, the sudden dominance of niche making and increase of painted pottery and iron. The biological discontinuity in the occupants of Terrace III was too insignificant to claim a replacement of the local population (§ 14.6). A minimal continuity in body posture (flexed on the back) and sacrifice of ovicaprids between the shaft grave occupants of Yanghai II and III suggested a weak link between the two. The increase in animal protein in the diet from Terrace Phase III onward, demonstrated a heavier reliance on stockbreeding.<sup>1</sup> I would argue that the increasing reliance on pastoralism was probably enhanced by the adoption of horse pastoralism and the capacity of mounted warfare – if this could be proven (347).

On Terrace III, differences in the identity of shaft and niche grave occupants are not only articulated through the niche making itself, but also the innovative body orientation (NE for niche grave vs. WW for shaft grave users), and finally whole horse sacrifice which also highlighted the elite character of niche grave versus shaft grave occupants. On the other hand, the random side-by-side distribution of these two types, the absence of elaborate surface structures as present on the few niche graves of Terrace II, and shared features such as a similar WL-ratio of the shaft mouth as well as preference for extended body posture and multiple burial, indicated that the occupation of Terrace III was a joint effort of shaft and niche grave occupants.

The steady integration and continued elite status of niche grave occupants demonstrated by the case of Yanghai, was not the norm in the Turfan Basin. Based on regional analysis, I claimed a differential integration of niche grave practices by different communities in the Turfan Basin (Part IV, esp. Chapt. 25). At Shengjindian, largely contemporary with Terrace Phase III of Yanghai, the strong archaism in burial rituals suggested a strong resistance to the adoption of the innovative niche grave practices. The last stage of developments in lateral niche grave practices of the Turfan Basin suggests that their occupants lost their leading position in the Turfan Basin. In the early graves of Jiaohe Goubei Gouxu, it is suggested that shaft graves have taken over this role instead.

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<sup>1</sup>Si Yi et al. 2013.

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It further appeared that between c. 200 BCE and 200 CE, lateral niche graves in the Turfan Basin engaged in a network linking the Xiongnu empire, the Western Han empire, as well as the Amu Darya Basin. From c. 200 CE onward, increased interaction can be observed instead with the successors of the Han, i.e. the Wei and the Jin, as well as with the Tarim oasis people, the Indian and Persian world. This also explains the late addition of, for example, cotton at the end of Terrace Phase III at Yanghai. This was also the time lateral niche grave practices spread beyond the Tianshan area and Turfan Basin into the Tarim Basin (§ 8.6).

Finally, it can be confirmed that the research category ‘niche grave’ was significant and relevant in this research. At the site and the regional level, *lateral* niche graves provided a valuable parameter to assess change, and additional parameters such as body orientation proved that there were other features apart from the addition of a niche which set this grave type apart from others.

At a supra-regional level, studying niche graves was especially relevant as a research category in the context of the Early Iron Age. As a result of increased mobility in Inner Eurasia, a considerable standardisation of grave types took place, which was an efficient means to express group identity among mobile pastoralists. The side-by-side distribution of different grave types at the same cemetery is a common feature in Inner Eurasia and reflects their multi-ethnic nature and the need to form alliances. In the distinction of different niche grave practices, a minimum categorisation on the basis of the positioning of the niche – and the body – towards the entry pit, proved indispensable (Fig. 2.1 on 10). Other parameters such as body orientation revealed the abruptly changing allegiances in this and other grave types. To conclude, niche making was certainly not an arbitrary feature. It was instead significant in the construction of group identity at the community, regional and supra-regional level.

## 30 Future research prospects

The methodology developed for the site and regional analysis was based on a bottom-up approach, creating multiple research opportunities (Chapt. 3). In this dissertation, analysis was mainly based on interpretation of bivariate contingency tables – and occasionally more sophisticated plots (§ 13.5). Further research prospects lie in exploiting the full potential of the database (28–28, Figs. 3.1 and 3.2) in conjunction with carrying out multivariate and spatial analyses (32, Fig. 3.6).

Research possibilities include analysis of shooting equipment of the Yanghai population and its application, e.g. in mounted hunting or warfare (347). Cross-comparisons between different variables such as shooting equipment and horse tack may prove useful in this. Profession could be investigated as another aspect of the *social persona* of niche grave occupants (24).

Objects, products and tools related to pastoralist activities, including dairy products, leather items, and textiles could be analysed in relation to mobility, sedentism and subsistence activities. Exploring evidence of horse and camel breeding and trade across Eurasia during the late Early Iron Age, and the role lateral niche grave occupants played in this, could provide new insights in supra-regional interaction.

Furthermore, although the primary sources of this dissertation are archaeological relicts (4), this research has brought forward substantial new evidence for scholars wishing to integrate this into historical narratives (see esp. 80).

Yanghai, with its unusual long chronology and exceptional preservation conditions, will continue functioning as reference site, and publications of new and old excavations will continue throwing new light on the (lateral) niche grave debate. Full publication of the Huoshaogou, Dongheigou and Heigouliang excavations will enable the study of modalities of cultural transmission of niche grave practices between the eastern Tianshan and Hexi corridor.

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