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## **Silk Road interaction in the Xinjiang province during the Han and Jin dynasties**

Top, Mark

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Silk Road interaction in the Xinjiang province during the Han and Jin dynasties

Mark Top s1148575

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Dr. M.E.J.J. van Aerde

University of Leiden, Faculty of Archaeology

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## Introduction

The history and archaeology of China has been an amply represented subject in Europe, since the rise of globalisation has forged new connections between Asia and Europe and rediscovered others. This is amplified by the fact that the country has been host to an empire spanning from the East China sea to the Tarim Basin (Barnes 2007, p. 63). Lately the Xinjiang province has garnered archaeological interest due to the construction of a new trade connection between East and West called the 'Belt and Road Initiative' (BRI). The aim for this road is to increase both economical and cultural ties in the world. In addition to this it would be easier to exchange scientific expertise by improving the way we share information (Xinhua 2015, [www.gov.cn](http://www.gov.cn)). This project is located in the area which formerly contained a large part of the Silk Road trade network, making this a tried method of exchange.

The Silk Road trade network has an extensive history, with some signs of direct and indirect exchange throughout its expanse dating as far back as 50.000 to 100.000 years. In that time it has spanned an area from Western Europe, to Eastern Asia, to Sub Saharan Africa (Olesen 2003). Before it was called the Silk Road by baron Ferdinand von Richthofen (Fuxi *et al.* 2009, p.41) it had other names which pertained to certain sections of it such as the 'Persian Royal Road' (Graf 1994, 167-189), however for the sake of clarity the term Silk Road will be used throughout this thesis when referring to the trade routes which connected these areas with each other. A multitude of goods and ideas was traded along this network such as Chinese silk and Roman glass, but also Buddhism found its way to distant lands with Indian traders (Fuxi *et al.* 2009, pp 41-42). This interaction would of course have its influence on the populaces of the various areas as new cities were founded at trade nodes and at strategic locations. And on the fringes of empires, multiple cultures would intermingle and dilute each other, resulting in a curious melting pot composed of various civilisations, sometimes even forming kingdoms of their own. It was during the Han dynasty that China officially joined the Silk Road. Emperor Wudi figuratively and literally opened the gate to the Silk Road trade in 114 BCE with the opening of the Jade Gate, the last settlement in Chinese lands after which trade caravans would travel to India and beyond. This gate was located approximately 80 kilometres west of Dunhuang, in what nowadays is called the Gansu province (Boulnois 2005, p. 66).

The Han Dynasty was a dynasty of Chinese emperors which succeeded the empire of Qin Shi Huangdi, the first emperor of a unified China. This dynasty was established in 206 BCE by emperor Gaozu (202 to 195 BCE) (Davis 2001, pp 44-46) and lasted until its last emperor, emperor Xian (189 to 220 CE) in 220 CE (Mansvelt Beck 1986, pp 353-357), after which the dynasty was succeeded by the three kingdoms of Cao Wei, Shu Han and Sun Wu. During its lifetime the dynasty was interrupted only once by the Xin dynasty established by Wang Mang from 9 to 23 CE, after which the Han dynasty was reestablished (Hansen 2012, pp 35-36). The Han dynasty is divided into two periods which straddle this interregnum, the Western Han (also known as the Former Han) from 206 BCE to 9 CE and the Eastern Han (also known as the Later Han) which lasted from 23 to 220 CE (Loewe 1986a, p. 1). The Han dynasty introduced

many new reforms, but notably it did this at a much slower pace than the preceding Qin dynasty. It was felt that among others, the rapid push to overhaul much of the legislature of the newly conquered kingdoms was caused by the relative brevity of the reign of the Qin dynasty, which was supposed to last ten thousand years. Instead Gaozu effectively split the area of his empire in half, where he ruled one part directly, while distributing the other part among family members and loyalists into more independent territories. Over the years he annexed those territories by claiming it after the former owner died, as these territories could not be inherited by their family, or through conquest if any of the territories decided to rebel. This led to a much more gradual, but a more complete unification of China. Other reforms include the increase of farm yield and the monopolisation of some resources by the state. During the reign of Mang Wang much of the private property was apprehended and redistributed, but this was reverted during the Eastern Han, after which large land ownership returned resulting in the increase of power of influential families. Relations with neighbouring factions were tense and were often resolved through war or marriage (Loewe 1986a, pp 1-19). To the north lived the Xiongnu, to the south the Yue and south west the Qiang, to the east the Koreans and to the west were the "Western Regions". Emperor Gaozu waged war against the Xiongnu but was defeated after they confederated under Khan Maodun (Loewe 1986b, p. 127), however under emperor Wudi (141 to 67 BCE) the Xiongnu in the Tarim Basin were conquered in 127 BCE (Yü 2008, p. 390).

After the Han dynasty fell in 220 CE it was replaced by three kingdoms warring for dominance, the Wei, the Shu and the Wu (Dien 2019a, p. xviii). However shortly after most of the holdings of these kingdoms would be united by the Jin dynasty under emperor Wu in 265 (not to be confused with the emperor Wu of Han), after his grandfather Sima Yi took over the court of the kingdom of Wei (chaussende 2019, p. 79). The Jin dynasty that followed can be divided into two periods, the Western Jin (265 to 317) and the Eastern Jin (318-420) (Dien 2019a, p. xviii). Although the empire of China would be more unified under the Jin banner than it had been in the decades after the fall of the Han, this period would be referred to as the Dark Ages of China (Dien 2109b, p. 2). During these times the empire underwent many changes in policy and internal hierarchy, making it possible for new layers of society to emerge or seize power. Although this period may not have been the most prosperous of times for the Chinese Empire, the changes would lay the foundations for the Sui and Tang dynasties to enter a new Chinese golden age after the fall of emperor Gong in 420 CE (Dien 2019b, pp 1-3; Holcombe 2019, pp 117-118).

This thesis will focus on China during the Han and Jin periods, because most of the sources discuss the time period spanning these dynasties. More specifically it will focus on the Tarim Basin, which is located in the Xinjiang province. The Tarim Basin is known to have been a great source of jade for the Chinese Empire (Li 2020, p. 90). It was conquered by emperor Wudi from the Xiongnu and after that served as the westernmost frontier of the empire. Before this the province was inhabited by multiple nomadic tribes, which were subjugated by the Xiongnu. These tribes might have had their origin in both Eastern Asian peoples as well as Western Eurasian roots. Though not part of the Han commanderies themselves, an administration was put in place by the emperor to govern the area (Sheng *et al.* 2020, p.1). This was called the "Protectorate of Western Regions" and was established around 60 BCE after hostilities with the



Xiongnu resumed (Ying-shih 1986, p. 392). However this meant that this remote area was a long distance away from the imperial court and the Chinese centre of culture, meaning that other cultures could have a greater deal of influence on the citizens living there. This will be the main focus of this thesis. As such it will attempt to answer the following question:

**“What changes did the Silk Road induce on the material and cultural archive of the Tarim Basin during the Han and Jin Dynasties (202 BCE- 420 CE)?”**

It is expected that besides the already indigenous cultures present in the Tarim Basin belonging to the oasis kingdoms located there and the Xiongnu that ruled over them before the conquest of the region by the Han, there will also be influence from areas located more to the west like India and Pakistan. As there have been recorded instances of silk goods, which originate from China, found in the Mediterranean area (Fuxi *et al.* 2009, p.41), there has to have been some connection going through the mountain passes to the south or the steppes to the north. It is also expected that, since the Chinese core regions were located far away from the Tarim Basin and it was only a protectorate rather than a commandery, Han culture may not be as dominant as observed in provinces located closer to the Chinese heartland.



Figure 1. Map of the Tarim Basin

To answer the research question the basis of this essay will be multiple case studies which could indicate diversity. These case studies will use materials that have already been excavated



and analysed, but which have not yet been interpreted within the interpretive framework of this question. First this thesis will explore several of the oasis kingdoms already present within the Tarim Basin so as to get acquainted with the most important sites in the area. This will set a base of pre-existing conditions to compare any changing factors to. After this there will be a chapter about the Yingpan cemetery, a site containing many material goods which might show the exchange of styles and materials with regions bordering the Tarim Basin or located even further away. Third there will be a chapter about any languages written in the area. If other polities settled there to secure their provinces, they might have introduced their script as well for administration. In addition to this, traders might have brought and left behind documents written in the language of their country of origin. Final there will be a chapter about Buddhism, a religion which was not present in the Chinese Empire before it opened itself to the Silk Road trade network, but was already present in India. Should this religion have spread via this region, then signs of its arrival might be found which predate Buddhist presence within the core regions of China. To do this documents found within the catalogue of the University of Leiden will be used. Because of the restrictions which come with a bachelor thesis, as well as the limitations on access to archaeology from the Xinjiang Province, this thesis will not be able to give a complete overview of all archaeology in the region. However this thesis will attempt to create a broader perspective of the interaction within the region of people belonging to various cultures and how this shaped the cultures, objects and individual sites that were already present during the Iron Age. This analysis covers a selection of subjects, including material culture, language and writing, and immaterial concepts such as religion. Results will be expected which can give us a better understanding of the effects of trade on the population of a region as a whole, rather than the effect of it on an individual subject such as material goods. These results will hopefully prove to be of value in our understanding of the role and value of the Silk Road trade networks for ancient societies.

## Oasis kingdoms of the Tarim Basin

After defeating the Xiongnu multiple times in various engagements in the northwestern territories of his empire in 127 BCE, such as the Ordos Desert (Yü 2008, p. 390), Emperor Wu took the opportunity to connect the Han Empire to the Silk Road trade network in 114 BCE through the city of Dunhuang (Boulnois 2005, p. 66). The Han would continue to conquer what nowadays is called the Xinjiang province during the second century BCE (Whitfield 2004, p.2). However as the Silk Road precedes Han presence in the region, it might be possible that non-local influences were already present in the province and that these would persist during the centuries that followed.

After the Han ousted the Xiongnu, they proceeded to conquer the various kingdoms which were present in the area. When the Han dynasty fell apart into the Three Kingdoms and later during the Jin dynasty, many of these kingdoms would again split off from the empire, such as the kingdoms of Kroraina (also known as Shanshan), Turfan and Khotan (located east, north and south of the Tarim Basin respectively) (Hansen 2012), before being reconquered by the Tang (Bregel 2003, p.20). However this would not stagnate the trade routes in the region.

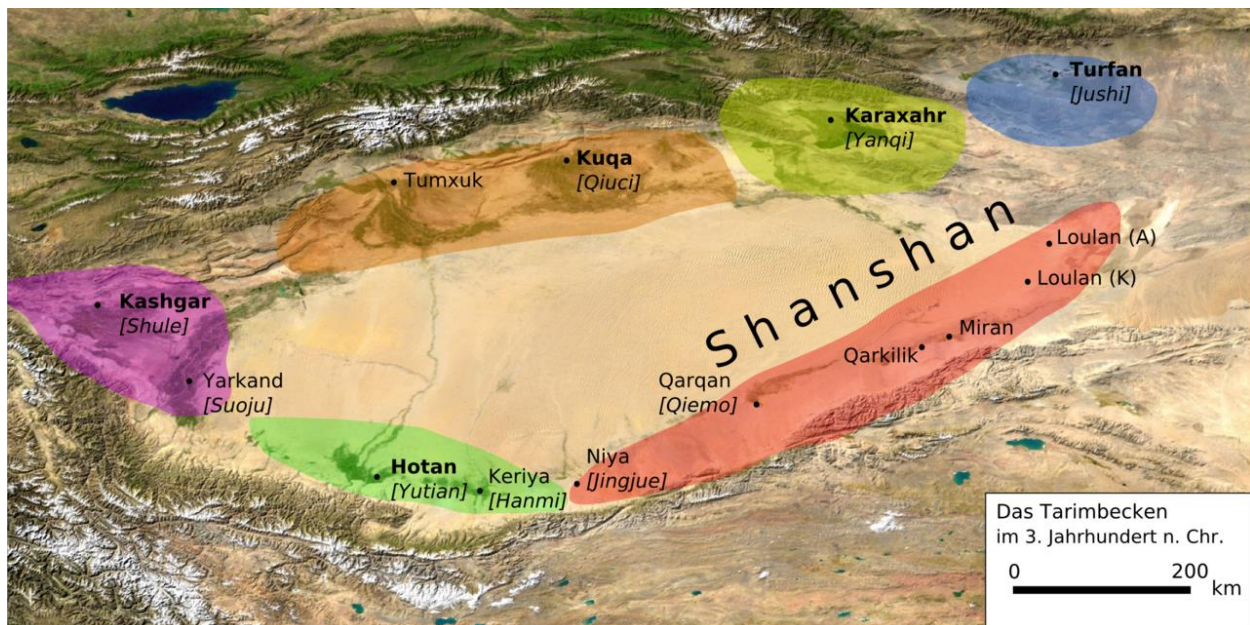


Figure 2. Territories of the oasis kingdoms located in the Tarim Basin

Inscriptions found in the Karakorum mountains indicate that immigrants from the region of Gandhara, which was located in contemporary Pakistan and Afghanistan, had been coming to Kroraina throughout the first to third century CE during Han rule, although human activity can be traced back to 4000 BCE. It is unclear whether the rise of the Kushan in north India had anything to do with this steady flow of immigrants, however through their texts we know that the Kroraina thrived during the third to fifth century CE while the kingdom itself was identified

through Han documentation of their north-western holdings (Hansen 2012, pp 26-32). Evidence of Chinese presence in the kingdom can be found within the ruins of the Krorainan city of Loulan. Multiple bronze coins called 'wuzhu' were unearthed which were dated from 86 to 1 BCE and closeby to these a stash of arrowheads was found. Within a settlement called Niya wood carvings have been found which stylistically coincide with designs that are also found in Gandhara, while the phenotype of several bodies which were found suggests that native population of Kroraina originates from the Iranian plateau. Within the burials of these corpses various types of fabric have been found such as cotton and silk, whose origins can be traced to West Asia and China respectively (Hansen 2012, pp 38-39), with some also made in a style which was not used in the Han core regions (Mair 2010, p. 29). One example is a body wrapped in white fabric with several patterns. One of these patterns was a concentric red diamond shape with a blue centre while another resembled red flowers. The cloth as a whole had a red rim. Another example was a robe in an orange and blue checkerboard pattern. The style of the clothing was mainly suited for horse riding featuring narrow cuffs and a wide hem, rather than a Chinese domestic straight cut, which is in line with some of the burials in the Shanpula cemetery belonging to nomadic steppe riders. The checkerboard pattern itself is also foreign to China, but can be seen in Kizil cave art as being worn by a Buddha in Indian style (Sheng 2010, pp 41-42). In addition to this, Chinese documents were found within Niya, which suggest that there was also a non military element present within the kingdom, some of these also referenced the Xin dynasty interregnum, which took place from 9 to 26 CE (Hansen 2012, pp 35-36).

The kingdom of Turfan connected the Chinese Empire with the powers in Iran with migrants coming from the Sogdian city of Samarkand, located in contemporary Uzbekistan. This kingdom along with others such as Kucha, made up the greatest kingdoms located at the northern rim of the Tarim Basin after the Han dynasty fell. The earliest documented proof of Chinese activity in local trade was a contract dated back to 273 CE, which describes the trade of bolts of silk that could have been exchanged for rugs or grain. As early as the beginning of the fourth century CE Sassanid silver coins started to appear, which is the first occurrence of these coins in Chinese territory. However, these coins would not circulate to the Chinese core regions as bolts of cloth were preferred as currency (Hansen 2012, pp 83-95). Other signs of trade with the Sogdians were encountered not in Turfan but in Dunhuang, where eight Sogdian letters were found 90 kilometers north of Dunhuang in the ruins of a collection of watch towers located there dated back to 313 or 314 CE. These letters indicate the existence of Sogdian presence in the fourth century CE in multiple cities such as Luoyang and Dunhuang. They also mention the trade of various goods such as different kinds of textiles, a defined amount of musk, cosmetics and pepper (Hansen 2012, pp 117-119). After the conquest of the Xinjiang province, Emperor Wu ordered the construction of several military outposts called 'tuntian' encompassing the entire Tarim Basin and populated them with thousands of people. These outposts were designed to be self-sufficient and their purpose was to be a fortification against western threats to the Han empire and to consolidate its economic power as a new player in the Silk Road network (Sheng *et al.* 2020, p.1). The site of Shichengzi concerns one of these tuntian and was located to the north of the Turfan kingdom. It contains multiple features such as a gate, multiple houses,

storage pits and a kiln. Recently a number of burials in different styles have been discovered as well. It concerns six pit burials and three pit burials which feature chamberlike structures at the bottom. A final pit tomb had a platform at the bottom along with several instances of sheep (*Ovis aries*) and half a horse (*Equus caballus*) (Sheng *et al.* 2020, p.8). The other graves each contained an individual body alongside multiple grave goods. These goods include bronze jewelry in the form of rings, earring and bracelets, and two Wuzhu. Additionally, excavation of the dwellings and storage pits has yielded multiple types of cereal in the form of naked barley (*Hordeum vulgare* var. *coeleste*), common wheat (*Triticum aestivum*), common millet (*Panicum miliaceum*) and foxtail millet (*Setaria italica*), as well as instances of pottery and several bone arrows. It has been suggested that an explanation for this variety could be to have a flexible agricultural strategy so as to minimise risk to the sustainability of the tuntian (Sheng *et al.* 2020, pp 4-8).

In the south lay the kingdom of Khotan, also known as Hotan, with its earliest material record dating to the third century BCE. These finds were located in the Shanpula cemetery containing a record ranging about 700 years (Hansen 2012, p. 201). The cemetery contains burials in many styles among which steppe burials for both people and horses and a mass grave containing up to 200 bodies. These again showed grave goods associated with both eastern and western empires. One man wore pants made from tapestry featuring a centaur and a soldier with western features. These depictions have been related to Parthian imagery. On the other hand there were also mirrors in Chinese style dated back to the first century CE as well as strings of eye beads associated with the late Western Han dynasty (Hansen 2012, p. 201; Brill 2009, p. 59). In total, of 68 tombs excavated in Shanpula cemetery, 15 contained glass material in the form of beads, bracelets, ear drops and ear pendants, adding up to 1405 beads. These beads are divided into two categories. The first category is dated from the first century BCE to the third century CE, which coincides with the late Western Han dynasty to the end of the Eastern Han. The second category ranges from the second half of the third century CE to the end of the fifth century, which places it during the Jin dynasty (Brill 2009, pp 305-306). At the start of the fourth century CE mass burials disappeared to be replaced by rectangular pits, which is curious as neither were in style during the Han dynasty with pit graves being phased out in favour of multi chambered tombs resembling a residence during the later period of the Western Han (206 BCE to 9 CE) (Campbell 2010, p. 227; Li 2017, pp 700-701). The type of burials present at Shanpula is, however, similar to the pit graves which appeared in Niya and is also similar to the Yingpan cemetery and so it has been suggested that the populations of these settlements immigrated to Shanpula at the start of the fourth century. Coins found in the Khotan kingdom dating to the third century CE bear the characteristics of both Chinese and Kushan coins, with Kothanite coins having one side written in Chinese characters and the other in the Kharosthi script used by the Kushan (Hansen 2012, p. 203).

The Xinjiang province was the first of the Chinese regions to feature glass objects in its archaeological record during the Zhou period (1100-800 BCE), 500 years earlier than that such objects were to be found in Central China, while China originated glass traveling westwards is at its earliest associated with the Han dynasty. Yet the Xinjiang province itself was also 500 years later than regions such as Mesopotamia and Egypt to have glass. Thusly it has been argued

that, while China would introduce the rest of the world to silk products, in exchange China would receive the technology of glass production (Brill 2009, pp 60-64). As the earliest glass found in Western and Central China is full of impurities, which indicate that the expertise used in production was not yet far developed, it is theorised that the exchange mostly concerned the technology to make glass, rather than actual glass products. The technology had yet to be developed gradually, using byproducts of bronze production and other available ores. Another aspect which sets the ancient Chinese glass apart from glass of western origins, is that lead isotopes are found in much higher ratios, which otherwise only occurs in a similar fashion in the Samartia culture located in contemporary Russia and Kazakhstan (Brill 2009, p. 255). Aside from lead isotopes, this glass is also poor in magnesium and aluminium, a property which it shares with glass from ancient India, therefore it has been theorised that the origin of Chinese glass lies there. Additionally, early glass production in China has been associated with moving nomadic tribes, rather than stationary production centers, since glass dispersal slowed down considerably during the third century BCE (Brill 2009, p. 64).

Han dominion over the kingdoms of the Northern Silk Road was not uncontested however and throughout their rule, various other polities would try to wrest control. Among these was the Kushan Empire from the north of contemporary India, which ruled from 40 to 260 CE. According to Chinese records, the Kushan sent several forces into the Xinjiang region in 90 CE, although the exact volume of these forces is contestable (Hansen 2012, p. 32). Another polity which remained a threat despite their defeat by the Han, were the Xiongnu, who, as documented by the Sogdian letters found near Dunhuang, even came as far as sacking Luoyang in 190 and 311 CE with the latter being connected to a general which the author connected to the Huns (Hansen 2012, p. 118). From 107 to 123 CE the northern Tarim basin was in the hands of the Northern Xiongnu (the Southern Xiongnu had been subjugated and subsequently assimilated), while the Kushan controlled Khotan. Although the Xiongnu were once again defeated in 126 CE, the Han empire would fall entirely due to internal strife. Following this the Kushan would capitalise on their position and assimilate the South-western part of the Basin into their empire during the first half of the third century (Bregel 2003, p. 10). The Xinjiang province would later be conquered by the Hephthalites in the south and the Xianbi (who ousted the Xiongnu and drove them west) in the north, before the latter were defeated by the Rouran in the fifth century CE during the Jin dynasty (Bregel 2003, p. 12). After the fall of the Han the Chinese would not be able to contest the Xinjiang province until the Tang dynasty in the seventh century.

## Treasures of the Yingpan cemetery

The Tarim Basin holds many cemeteries which can tell us about the various characteristics of the kingdoms located within it, as well as show markers for exchange both between each other and the larger empires in the east and west. These markers are the most visible indicators that start exploring different influences within the Xinjiang region. The Yingpan cemetery, located in the east of the Tarim Basin in what was once the kingdom of Kroraina, is one of these and has yielded data in the form of biological finds, material goods and a number of bodies, excavated within its borders. Among these finds are hundreds of objects that have been dated to the Han and Jin period as well as 32 burials. These burials usually contained a single body, lying straight on its back with its legs unbent, accompanied by various grave goods such as bronze and ceramic vessels, wooden and glass objects, and a collection of textiles (Liu *et al.* 2011, p. 1763). One of the most striking of these bodies is the Yingpan man, a figure found clothed in an elaborate ceremonial robe, dated to the third or fourth century (Larson 2011, p. 350) which, as has been suggested, bears characteristics belonging to areas located east and west of the Xinjiang province. This data might give us a better idea about immigration to the kingdom of Kroraina and the culture and goods that these immigrants may have brought with them.

To ascertain whether the textiles found at Yingpan are indeed the product of Silk Road exchange, they had to be analysed using multiple techniques such as optical microscopy, scanning electron microscopy and Fourier transform infrared spectroscopy. These methods work complimentary with each other. For example, although optical microscopy gives very clear and detailed pictures, its quality suffers a lot if the fibers of the textile have deteriorated beyond a certain point. Scanning electron microscopy however, does not suffer under these conditions and can then be used as an auxiliary identification method. To be able to judge how far a textile has deteriorated, and in extension which of the former techniques is more applicable, Fourier transform infrared spectroscopy can be used, as well as for identifying the materials of which the fibres are made. Three materials have been identified as the base of which the textiles have been made: silk, cotton and wool, aside from ramie fibers which have also been discovered at the Yingpan site. In addition to this, the silk has been sourced to two different species of silk moth: the domestic silk moth (*Bombyx mori*) and the wild silk moth (*Bombyx mandarina*) (Liu *et al.* 2011, pp 1764-1767).

Another way to identify exchange, is to look at the different dyes used in colouring the fabrics. Should a dye use ingredients, either chemical or natural such as saffron or turmeric, which were not readily available in the region, this could mean that there was exchange between neighbouring provinces, or at the least some sort of contact. Much like with identifying the fibres of textile, dyes can be identified using various techniques such as thin layer chromatography, high performance liquid chromatography, absorption spectroscopy and vibrational spectroscopy. Just like the techniques named earlier, these methods complement each other while identifying the different origins of dyes in various states of degradation. Multiple dyes originating from other cemeteries such as Shanpula have already been identified using these methods. One of these



is a yellow dye which is assumed to have been produced using a plant resembling weld (*Reseda luteola*), a plant which grows in Europe and Western Asia but has not been encountered in its natural form in the Tarim Basin (Liu *et al.* 2011, p. 1764; Flora of North America Editorial Committee 2010, pp 192-193). The composition of five different colours sampled from four different objects have been identified: red, yellow, green, blue and brown. Both the red and brown dyes have been made using alizarin, a pigment that was made using the roots of the madder plant (*Rubia spp*) (Vankar *et al.* 2008, pp 207-212). Additionally there was one instance in which purpurin was used in the red dye which can also be made using the *Rubia* genus (Liu *et al.* 2011, p. 1765). The blue and green dyes were made using indigotin and indirubin. Indigotin is a material which can be harvested from the leaves of the genus of *Indigofera* (Steingruber 2004). The yellow dye was made using luteolin, which was produced using the aforementioned *Reseda luteola* (Flora of North America Editorial Committee 2010, pp 192-193; Liu *et al.* 2011, pp 1764-1765).



Figure 3. Yingpan man with funerary clothing

The attire of the Yingpan man includes multiple articles made of wool and silk (Liu *et al.* 2013, p. 4447). His overcoat is made from a red based fabric decorated with yellow figures, of which the arms end in dark blue cuffs with yellow decorations and yellow fringes. Around his waist he has a brown belt upon which lays a miniature replica of a robe in brown and white. His trousers are a very dark blue upon which various patterns are embroidered in red, green and yellow. His footwear seems to consist of simple white wraps with strands of red cloth wrapped around his ankles. His head is covered by a white mask upon which his face is drawn depicting thin eyebrows, eyes and a moustache. Across the forehead of the mask a band of leaf gold is draped. His head further rests upon an off white pillow decorated with green and brown swirls. The patterns on his vermilion robe come in three forms. The first is two caprines (discernable from ovids by their tail) facing each other while rising on their hind legs. This pattern, as well as the other two, repeats itself down the length of the robe. Between the goats a tree is situated, sprouting two branches which end in diamond shaped leaves which some have identified as pomegranate trees (*Punica granatum*) (Liu *et al.* 2011, p. 1763). The final pattern is that of two muscular humanoids that face each other. They stand in a position as if preparing to throw something and it seems that they are clutching an object behind their head. The figures do not wear any clothing, save for a stola wrapped around one of their shoulders and looping underneath their other armpit. The pattern on the blue cuffs looks plant-like like the patterns depicted on his pillow, serpentine across the wrists with a yellow orb hanging above the tendrils. His trousers feature two distinct patterns. The first is a criss cross of yellow



orbs with a flower, reminiscent of an asteraceae, where they intersect. In the gaps between this criss cross a diamond shape is positioned. This shape consists of four petals in the cardinal directions with yellow, green and red colours, tipped with a blue bulb sporting two tendrils. In the diagonal intersecting these four petals are four plant shapes as well, their tips much the same as the cardinal leaves but here the bulbs are a yellow colour.

The dyes used for colouring the clothes of the Yingpan man have been subjected to analysis as well much like the dyes found in other textiles at the site, albeit in a more thorough manner. The techniques used for this include high performance liquid chromatography with diode array detection and on-line mass spectrometric detection. These techniques allow for the identification of the exact sources used for the dyes, which can then be correlated with the resources that were local to the area and those which had to be imported from somewhere else. The dyes were sampled from a variety of sources such as his robes and skirt, but also from his shoes and the pillow on which his body rested (Liu *et al.* 2013, pp 4444-4447).

Of the 38 samples taken, 20 were red or brown. The main components of these dyes were alizarin, purpurin, or a combination of the two, which are all produced with the *Rubia* genus, while no anthraquinones were found which were derived from insects. Through the techniques discussed above and earlier research, it is assumed that specifically the species of the rose madder (*Rubia tinctorum*) and the indian madder (*Rubia cordifolia*) were used in the creation of this dye, though different garments contain different dye compositions. Although the pigments gained from processing these plants are vivid red, it is not unheard of that they fade to a darker brown over longer periods of time. The dye also contained elements of emodin, a pigment that can be used to make a more orange tint when mixed with red. The source of emodin can be found in plants such as the rhubarb and dock genus (*Rheum* and *Rumex* respectively) (Liu *et al.* 2013, pp 4445-4447).

15 samples concerned yellow or green dyes. The dyes among these samples that were used to colour silk, were made with protoberberine compositions. The compound used in the creation of the yellow dye is not unique to Yingpan, but is commonly used to dye yellow silk throughout China. Many plants can be used in the production of protoberberine pigments, however as some of the dyes lacks the presence of other elements such as palmatine, it has been suggested that the source of the protoberberine is the chinese cork tree (*Phellodendron chinense*), which is native to the region surrounding Xi'an. Other instances found in the clothes of Yingpan man did contain palmarin, which means it is likely that these were made with the amur cork tree (*Phellodendron amurense*) which can be found in the more north-eastern parts of China. Other chemical markers indicate the use of the *Mahonia* genus (Liu *et al.* 2013, pp 4445-4447). All of the wool textiles however were made with pigments containing luteolin, which was more commonly used in Europe and the Near East, however the exact compound used for the dye in Yingpan has been found to be unique for the Tarim Basin (Liu *et al.* 2013, p. 4447).

Finally 3 blue samples were analysed and were found to contain indigo, which was also used to create green colours when combined with the yellow pigment. However, as it is impossible to

make a clear distinction between the different sources of indigo, it was deemed impossible to make a clear identification of the origin of this dye (Liu *et al.* 2013, p. 4447).

As the Tarim Basin was a largely arid region dotted with oases around which kingdoms formed, agriculture demanded to be composed of a diverse strategy. Research on the archaeobotanical record of the Yingpan cemetery can be divided into two categories: micro- and macrobotanical analysis. Microbotanical analysis concerns the starch grains, phytoliths and bran fragments found within a cake in one of the tombs. Macrobotanical research analyses multiple cereal, fruit and weed remains found within the tombs. These come in the form of full or partial grains, but also appear as leaves, spikelets and seeds (Chen *et al.* 2016, pp 167-168). Analysis of the starch grains reveals that they are most likely Poaceae such as common wheat (*Triticum aestivum*), barley (*Hordeum vulgare*) or naked barley (*Hordeum vulgare* var. *coeleste*). While phytoliths were too scarce to give a definite answer, bran fragment analysis could confirm within reasonable doubt that these starch grains belonged to *Triticum aestivum* (Chen *et al.* 2016, pp 170-171). Macrobotanical analysis on the other hand, showed a greater variety of botanical remains. While this too identified both *Triticum aestivum* and *Hordeum vulgare* var. *Coeleste*, other plants were identified as well. Stems were found belonging to *Sophora alopecuroides* and the rye genus (*Leymus* sp.), as well as fragments belonging to the common wild oat (*Avena fatua*) and cocksbur grass (*Echnicloa crus-galli*). Finally dried grapes belonging to the common grape vine (*Vitis vinifera*) were encountered within wooden ware (Chen *et al.* 2016, pp 168-170). While many instances of *Triticum aestivum* were found in the region surrounding the Yingpan cemetery dating back to the Bronze Age, not many sites dating back further than the Han, have been discovered to give a full archaeobotanical reconstruction. It is however known that during the Han and Jin dynasty, chaff of *Hordeum vulgare* var. *coeleste* was used to fill pillow cases. An iron plow found in the cemetery cements the theory that, while the Tarim Basin was arid, agriculture was possible on the fluvial plains present. Finally *Vitis vinifera* is usually associated with the Mediterranean area. The earliest instances of it being found on Chinese soil is in tombs belonging to the Turfan kingdom dated to 300 BCE. Grape cultivation in Xinjiang would flourish from the Jin dynasty onwards (Chen *et al.* 2016, pp 171-172).

As observed, these cemeteries contain objects which can be traced back to different regions both foreign and domestic to the Chinese empire. This includes objects which are foreign in style but made with local resources, but also objects which originate from entirely different regions. These examples of exchange would be accompanied by means for people of different nationalities to communicate with each other.

## Scriptures of the Tarim Basin

When immigrants and conquerors came to the oasis kingdoms of the Tarim Basin, they brought more than just their material culture. To be able to exchange this material culture, they needed a way to communicate with the local populace. They could not speak or write the local language and, at least initially, substituted it with their own. In a few cases some kingdoms did not even have a documented script and the only reason we know of their identity is through the writings of immigrants, such as the wooden slips written in the Kharosthi script belonging to the Kushan, found in the settlement Niya, written by travelers from Afghanistan and Pakistan. These documents dated to 200 CE are the first writings found in the Kroraina kingdom (Hansen 2012, pp 25-26). Another example are coins found in the Khotan kingdom which bear Chinese characters on one side and Kushan writing on the other, perhaps signifying the importance of both of these empires to the kingdom and the frequency that they had contact with these polities (Hansen 2012, p. 203). Aside from this, writing could convey many things such as trade contracts or religious writing, the latter of which will be discussed in the next chapter, making scriptures found in the Tarim Basin just as important in understanding all the foreign influences in the Xinjiang province as material culture and burials.

Wooden documents could be used for a variety of purposes. The aforementioned example from Niya does not only include letters to the homeland of the immigrants, but also contracts, royal orders and court rulings. These documents are one of the few reasons the existence of the kingdom of Kroraina is even known, as they only had a spoken language which was not written down. The only other mention is in Han historical documents in which the kingdom is called Shanshan, that describe the diplomatic dealings with the various kingdoms located within the Tarim Basin (Hansen 2012, pp 25-26). An example of such contracts has been found in an excavated dwelling near Niya. It concerns two pieces of wood which have been slotted together after which they have been bound together with rope. Then the joint was sealed with clay upon which two seals were imprinted. One of these was a traditional Chinese seal, while the other depicts a face in profile which has been associated with a western phenotype. It is known that these latter sorts of seals were used in Gandhara. It has been documented that these contracts were thoroughly adhered. An instance is known where one person bought a plot of land from another and when someone would later intrude on that land the contract was checked to verify the ownership of the land. The contracts all had a penalty associated with them should they be broken and were officially valid for a thousand years or as long as the parties lived (Hansen 2012, pp 45-46). Differently shaped scriptures were found as well and were theorised to be different in nature. These wedge shaped pieces of wood were tied together and sealed with stamps of various Greek deities and figures such as Athena and Herakles. After further research it was found that these wedges often carried royal decrees from the king of Kroraina and one example was addressed to the official overseeing Niya. Royal documents, which were deemed more important, were written upon pieces of leather. However very few of these survive to this day because of the transience of the material in spite of the arid conditions of the Tarim Basin (Hansen 2012, pp 46-47). It has been suggested that the governance of the Kroraina

kingdom was based on the Arthashastra, an Indian text from the Mauryan dynasty (320-185 BCE) which describes how to govern a kingdom, and while many immigrants were indeed from Indian descent and the decrees bear similarity to the different kinds of decrees described in the Arthashastra, no copy of it has been found in Kroraina. It is possible that royal decrees of any regime fall within those described in the Arthashastra since rulers of different polities often faced the same issues. In addition to this the Chinese government was known to be authoritative as well and since the king of Kroraina ultimately answered to the Chinese emperor, his way of governing might just as well have been dictated by the Han (Hansen 2012, p. 47). Aside from these documents the immigrants also brought with them Buddhist texts, a religion that would spread and become dominant in China in the centuries following the Han.

Although both Chinese and Kharosthi documents exist, the Han documents usually discuss formal matters such as the exchange of goods. For example the soldiers/farmers stationed in the Xinjiang province by the Han emperors were entitled to certain rations. Should the Chinese officials not be able to pay these rations, they would instead buy these from the local populace. These purchases and their associated exchange rates were then documented for the Chinese administration (Hansen 2012, pp 42-43). The scriptures written in Kharosthi, such as the contracts discussed above, cover many more subjects. They describe the multiple kings of Kroraina and in which years they ruled, but they also mention the names of many of the civilians living in Kroraina. These names can be discerned from the names of the Chinese and Indian immigrants as they used loanwords from their own language (Hansen 2012, pp 43-44). Another example of wooden documents are travel passes written in Brahmi or other languages. Travelers would need these to enter Chinese ruled territories and the passes would mention their identity and their business within the empire. In addition to this there was usually an inventory of all people and animals travelling with the owner of such a pass (Hansen 2012, p. 57). Such documents were also encountered in Niya. They held information such as whether the carrier was a free man or a slave and gave a short description of the wearer's appearance. They also described the route that the traveler was planning to take, from which he was not allowed to stray (Hansen 2012, pp 36-37).



Figure 4. wooden contract from Niya featuring both Chinese and Gandharan seals

The coins found in Khotan have been the subject of debate for years. While it is agreed that one side often bears the value of the coin in Chinese characters and the other side displays a horse alongside Kharosthi script, the interpretation of the Kharosthi has yet to be ascertained, with some arguing that it refers to six kings while others say that it refers to the same king (Fang *et al.* 2011, pp 245-246). Other coins in the same style have been found near Kabul and their Kharosthi inscription has been interpreted as “Maharadjasa Radjadiradjasa Mabatasa Heramayasa”, which could refer to king Hermaeus who is called Yin-mo-fu in Chinese. Other coins with the name of Hermaeus have claimed to be found in Khotan as well, which could imply the existence of trade relations between these two kingdoms (Fang *et al.* 2011, pp 250-251). These types of coins were first used by the Kushan, who modeled them after the ‘staters’ used by Alexander the Great, which were made out of gold. The Khotanese kings would adopt this currency, but would instead craft them out of bronze (Hansen 2012, p. 48). The style of the Chinese inscriptions on such coins comes in two variations. The first is the standard clerical style belonging to the Han dynasty. The second style is called Zhuang Xing and was used from the early Han to the late Jin dynasty. As coins with the Zhuang Xing style are relatively rare, it is assumed that these might have been used for ceremonial purposes rather than practical use (Fang *et al.* 2011, p. 253). Further research revealed that some of the inscriptions on these coins may not be Kharosthi, but rather what is assumed to be Brahmi, a different script from South Asia. The Brahmi inscriptions however have as of yet not been able to be translated (Fang *et al.* 2011, p. 254). It has been documented that these coins would not only travel west to India and the Near East, but also east to China, where they were used to forge diplomatic ties with first the Chinese kingdom of Wei and later the Jin dynasty, following the fall of the Han (Fang *et al.* 2011, p. 262). These coins have also been found in Kroraina. Although the native inhabitants would pay their king in a variety of material goods, bronze sino-kharosthi coins have been found to be in circulation in the kingdom, albeit sparingly. Because they were relatively rare and not produced in Kroraina itself, although taxes were officially to be paid in staters, it was deemed acceptable that non-central settlements would continue to pay in materials such as lengths of carpet or unminted gold (Hansen 2012, pp 48-49).

Writing could not only be found on usual materials such as slips, scrolls or coins. There are instances of writing occurring on woven objects such as blankets or shrouds (Wang 2019, pp 840-842). This way of writing adds another dimension to script. Where writing on coins was often symbolic in nature or associated with the rulers under whom they were minted and scrolls could be read in solitude, to be able to read the script on someone's clothes or personal items you would have to be close to the person in question, both emotionally and physically. This adds a social aspect to writing as well. The use of characters on textile also means that one could spread their script simply by traveling. Although the clothes would not necessarily have to be worn by a native Chinese or even have this as an intended function, Han culture would still be able to spread very far through this, with fragments of textiles found as far away as Palmyra . Since people far away from the core regions of the Chinese empire would most likely not be able to read Chinese characters, it has been suggested that these sorts of writings had an iconic value rather than communicative (Wang 2019, pp 837-838), something which might be comparable to the use of Asian scripts by tattoo artists in the modern world. Multiple articles featuring script have been unearthed during the excavation of a royal tomb in Niya. These

objects include a blanket featuring the phrase 'Marriage between nobility benefits descendants eternally', a shroud with the phrase 'Brocaded silk for eternal generations benefits the couple who bestows [it] upon descendants' and a pair of trousers with the phrase 'Eternal longevity ensuring lasting descendants'. In another tomb found nearby comparable items were also found whose inscriptions alluded to the descendants of the deceased as well, further substantiating the symbolic meaning of these forms of script (Wang 2019, pp 839-840). Another

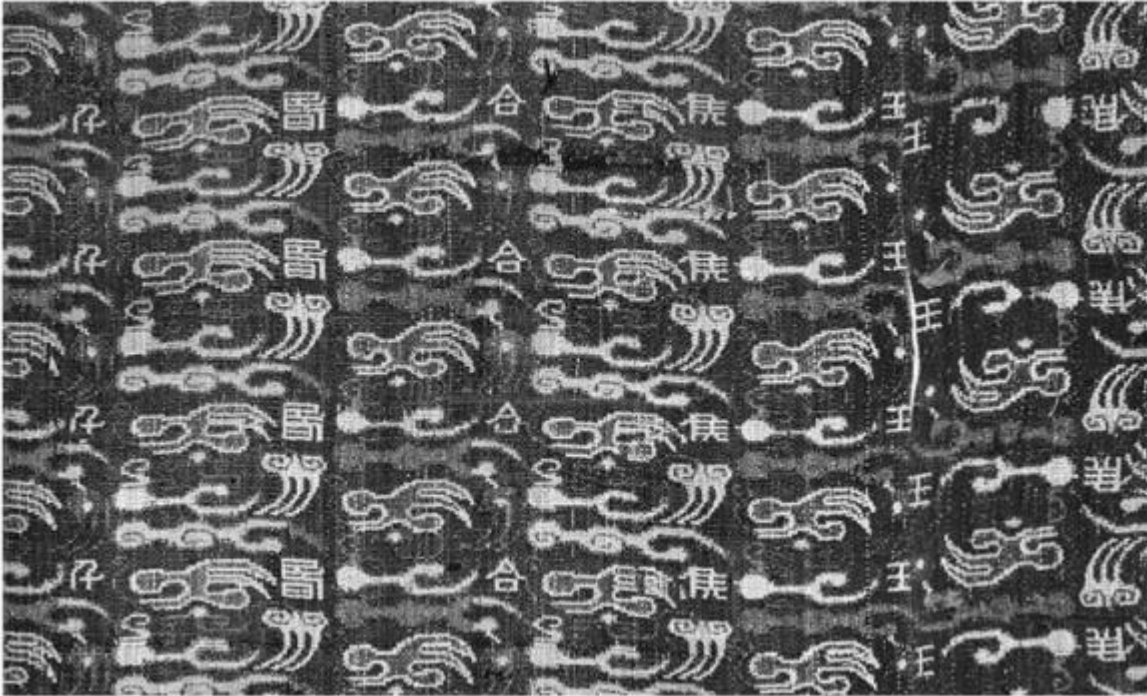


Figure 5. (Chinese Silk from a burial in Niya featuring Chinese characters which translate to "Kings and lords shall be married for thousands of autumns and tens of thousands of years; it is right that they bear sons and grandsons")

example has been found at the site of Loulan, also in the Kroraina kingdom. Here a textile fragment was encountered bearing the phrase 'illuminated longevity', which also seems to be iconic rather than convey an actual message (Wang 2019, pp 842-844). It has been theorised that these articles were given as diplomatic gifts to the kingdoms of the Tarim Basin, which operated independent during the times of the Western Han (202 BCE to 9 CE) before being usurped during the Eastern Han (25 CE to 220), as gifts of silk have also been found to be exchanged with the Xiongnu to the north (Wang 2019, p. 840). This might be validated by several finds in a tomb near Niya. Not only was pottery found with the Chinese character for king on it, there was also a piece of fabric with the text "kings and lords shall be married for thousands of autumns and tens of thousands of years; it is right that they bear sons and grandsons.". The frequent use of the word "king" has been interpreted as these being gifts for the authorities of Kroraina (Hansen 2012, p. 39-40).

Writing has been shown to have been very important in enabling various factions to be able to exchange material goods with each other. But it would also bring things that were intangible in

nature. Ideology and religion would spread and intermingle in the region, only visible from the texts and objects that would be derived from them.



## Buddhism in the Chinese Empire

When immigrants first came to the Xinjiang province they brought with them their culture and spirituality, Taoism and Confucianism from China and Buddhism from India, which they would spread through written teachings. As it seems that these immigrants would assimilate with local culture instead of attempting to conquer them, this would allow them to continue the customs they brought from their homeland and slowly spread these through cultural osmosis (Hansen 2012, p. 26). Buddhism in particular would later spread to the Chinese court and through there, become one of the most influential religions in the Chinese empire in many of the dynasties that followed.

During the Qin and early Han dynasty in the late third century BCE three philosophies were dominant within the Chinese empire, though to accurately describe their role in society has been deemed to be difficult as a unified imperial society had only just been formed of what hitherto been many different cultures and as such was subject to much change at the time. These movements were Taoism, Confucianism and legalism, though legalism was different from the other two in that it was not so much a religion as it was a philosophy on how to effectively run an empire. In addition to this, legalism would quickly fall out of favour during the Han dynasty after its dominant role during the Qin dynasty (Loewe 1986c, pp 649-653). Earlier it was believed that emperor Ming of the Han dynasty (28 CE to 75) was the first emperor to bring Buddhist monks and texts to China. However there have been no records found of an imperial edict commanding such a thing and instead Buddhism seems to have been gradually adopted by the Han court over a longer period of time (Kieschnick 2019, pp 533-534). Additionally instead of the imperial court actively bringing in Buddhist scholars and texts from abroad, it is also possible that it was brought over through the Kushan activity in the Tarim Basin and the immigrants that had been traveling to the oasis kingdoms located there (Hansen 2012, pp 26-32; Bregel 2003, p. 10). This seems substantiated by the fact that, although the arrival of Buddhism is largely associated with the Ghandarran immigrants who arrived in Kroraina and Khotan during the third and fourth centuries CE, there have been rock carvings found in the Karakorum mountains and ranges which lie adjacent to this region, which seem to depict Buddhist stupas. These carvings have been dated from the first century BCE to the early first century CE (Aerde 2019, pp 465-466), which is not long after the annexation of the Tarim Basin by emperor Wu (Yü 2008, p. 390).

The first Chinese Buddhist monk that would travel to the west to gather Buddhist scriptures however, occurred much later. It was the first ordained Chinese Buddhist called Zhu Zixing who lived during the second half of the third century CE. He traveled to the Kingdom of Khotan in 260 CE, which was by that point no longer considered to be a part of the Chinese empire since the fall of the Eastern Han thirty years prior, and collected a Mahayana Buddhist text titled 'Pañcaviṃśatisāhasrikā Prajñāpāramitā'. He copied the scripture, which was written in Sanskrit, and sent it back home to China. He did not write down any documentation however, so most of what is known about this journey was through second hand accounts from his disciple Fayi (Li 2020, p. 44). The first Chinese monk that did document his travels was Faxian, who lived during

the Jin dynasty in 399 CE. He traveled and lived in India for thirteen years, after which he returned to China in 412 CE with many Buddhist scriptures in his possession such as the Vinaya which contain the Buddhist commandments (Li 2020, p. 44). In 401 CE a Buddhist teacher from Kucha named Kumarajiva came to Chang'An. There he translated many of the Sanskrit Buddhist texts to Chinese until his death in 413, the most famous of them being the Lotus Sutra. His work was very important because although there had been many translators before him, their translations were of such a quality that only those who understood Sanskrit themselves could comprehend them, making them of poor use to sinophones. These new translations would make Buddhism accessible to all the Chinese people who could not read Sanskrit, which in turn allowed Buddhism to spread farther much faster. Another product of these translations was a system wherein Chinese characters would be associated with specific words in foreign languages, which is still used in modern times and is the basis for Pinyin spelling, which also makes it much easier for western language groups to learn Chinese. It has been theorised that this system caused a revolution within the Chinese language, resulting in an increase of its vocabulary with up to 35.000 words (Hansen 2012, pp 68-70).

During this time, Buddhism would gain ever increasing influence with the Chinese emperors. The court itself did not seem to have a particular preference to any religion, instead choosing to mix and match Taoist, Confucian and Buddhist doctrines as they aligned with its own goals while discarding the rest. As a result on an official level, Buddhism was largely treated as a curiosity. This meant however, that the emperor was relatively free to practise any religion as long as it did not interfere with court, meaning that Buddhist monks would come to perform rituals on the emperor's birthday and the emperor would make offerings to Buddha. What was difficult for the court was the exact position that Buddhist monks would occupy in Chinese society, which had a large focus on hierarchy. They were exempt from such things as taxes and military service, and did not produce anything of intrinsic value such as food or children. In addition to this, religion organised in large groups of individuals was foreign to the Chinese Empire. The position the imperial court eventually took was contradictory. On the one hand it would put limitations on the Buddhist orders, but on the other hand it would pay patronage to them in various forms such as the construction of monasteries or the gifting of objects. They also commissioned art in various forms such as the caves found in Yungang and Longmen (Kieschnick 2019, pp 533-534).

The earliest Buddhist associated architecture and objects found in the Xinjiang province were found at sites such as Niya in the kingdom of Kroraina and Rawak in the kingdom of Khotan. Despite the oldest petroglyphs found in the Karakorum mountains, the earliest that these finds can be dated is the third and fourth century CE. It was complicated due to the fact that for some of these, such as a stupa found in Rawak, it was impossible to conduct C14 dating so instead its typology had to be compared to examples found in India (Hansen 2012, pp 204-207). A stupa is a structure associated with Buddhist religion, worshipers would walk around these in a clockwise course (Hansen 2012, p. 53). Through a comparison with stupas in Gandhara, Mathura and Miran, it was concluded that the first phase of this stupa was constructed between the third and fourth century CE, while a second phase was constructed early in the fifth century (Hansen 2012, pp 204-207). It is important to note that because these datings were done

through typology, the deviation of this estimate might be quite big, since this typology would not be used instantly throughout the Buddhist influence sphere, but instead would have had to travel from India to Xinjiang, which could have taken a lot of time. Another example are the Kizil caves located along the northern border of the Tarim Basin in what was then the kingdom of Kucha. The earliest of these caves features a Buddha lying on his side in the final stages of his life and has been dated to around 400 CE. Because of the style of the Buddha and the other paintings featured in the caves, it is assumed that they were painted by craftsmen originating from India (Hansen 2012, pp 62-64). The earliest sign of Buddhism in the whole of Kucha is dated to the third century CE, when the populace was converted by Indian missionaries. These missionaries might have come from Gandhara as Kucha had extensive ties with that region. This was because the rivers that ran through Kucha also ran through Khotan and Yarkand, the first oasis kingdoms encountered when passing the Karakorum mountains from India (Hansen 2012, p. 66). More of these stupas have been found in Niya and Loulan in Kroraina. Loulan had one instance of this structure while Niya featured two in accompaniment with several houses and Gandharan wood carvings(Hansen 2012, pp 33-35, 52-53). It is known that although Gandharan Buddhist arriving in Niya traditionally followed the Vinaya, which dictated that monks should remain celibate, as they settled in Kroraina these monks would be allowed to marry and have children (Hansen 2012, p. 21).



Figure 6. square stupa found at Niya

When Buddhist figures were first introduced in the Chinese territories around the start of the first century CE (Kieschnick and Shahar 2014, p. 2), it was around the same time that Buddhism itself underwent a transformation as well. Before that time anthropomorphic depictions of

Buddha were scarce and had a different identity than what the Chinese would come to associate with it, namely art and relics. This identity would be propagated by Buddhist monks and nuns as well, with images of Buddhas being considered 'essential' with the purpose to be a focus to use during confessions as well as their use for visualisation (Kieschnick 2003, pp 52-53). Because of this, production of religious icons became popular in the Chinese regions and in turn would serve an important role in connecting the social stratigraphic layers in Chinese society through noble patronage of artists. So much so that it has been suggested that Buddhist art is an important part of what held Chinese society together, as not only was its effect the aforementioned patronage, but also the emergence of communities around reliquary sites (Kieschnick 2003, pp 54-55). The concept of religious art was also a new concept for China. Before artists could be categorised as either court painters or literati painters. The former were professional painters who only painted for the imperial court, while the latter were amateurs without formal training, although this would not mean that they were of lesser skill. The artists who painted for the Buddhists fell into neither category as they were professionals who did not paint for the court. Their painted subjects were also different, court painters usually painted idealised versions of real things, while literati painted much more stylistic and abstract with beauty as a purpose. The Buddhist painters would combine this by painting art with low expression, but having fantastical subjects. They had the function to be didactic and to be worshipped. In addition, where court painters painted with colour on silk and literati painted in grayscale on paper, Buddhist painters also painted the walls of caves (Kieschnick 2003, pp 54-55). Another innovation introduced by Buddhism to China was the concept of monasteries. Although shamans and other leaders of faith had existed in the various kingdoms that preceded the creation of the Chinese Empire, these were not organised in such a fashion as a monastery with its celibate lifestyle. These institutions were funded by donations of currency and land by various patrons. As they did not suffer from difficulties in holding on to their wealth by way of inheritance disputes, these monasteries could slowly gather their wealth over centuries to eventually become major forces (Kieschnick 2019, pp 539-541).

And so different ideas and religion would spread throughout the Tarim Basin by means of scriptures and material culture. And while objects got lost and documents faded, the cultures of the region would be permanently changed in their basic structure by the theories that foreign polities would bring with them along with their trade goods.

## Discussion

Primarily it is of importance to take in consideration that many of the sources about this subject are written in Chinese. As this examination lacked the resources for sophisticated translation software, an accurate translation could not be guaranteed and because of this it has been decided not to use sinophone sources so as to prevent errors. In addition to this the presence of covid impeded the procurement of other sources, imposing another limitation. The sources that were available mostly concerned three of the oasis kingdoms in the Tarim Basin: Kroraina, Turfan, Khotan. The exact nomenclature used for these kingdoms varied between sources, however for clarity only a single name was used for the sake of clarity. Within these kingdoms most data concerned a limited number of certain settlements and cemeteries such as Niya, Shichengzi, Loulan, the Shanpula cemetery and the Yingpan cemetery. Due to the aforementioned limitations it is unclear whether the focus on these sites is because these are the only (major) sites that have been found, or because other sites exist but have only been subject to Chinese research which has yet to be translated.

Despite the fact that there are petroglyphs in the area in and around Karakorum mountains dating back to the first century BCE and that human activity in the Tarim Basin has been dated back to at least 4000 BCE, the first recorded instances of immigration from western polities seem to be from Gandhara during the third century CE. This seems to be supported by the fact that burials with multicultural markers are dated the first centuries CE rather than already being present before that. Although it is possible that before this time, the peoples west and south of the Karakorum mountains did not have the means to first cross the mountains and after that the arid conditions of the Tarim Basin, it is also possible that these immigrants did exist, but that they did not leave documentation of their migration. This could be substantiated by the fact that the settlement of Niya did not have a written language. Therefore it could be possible that the immigrants were so few in number that their own writings have not yet been found while the oasis kingdoms simply did not document these occurrences. In addition to this, as our own documentation of the Tarim Basin seems to be largely limited to a few select sites, it could be possible that other sites have yet to be discovered with finds with indicate earlier instances of immigration and exchange, for example in the south-western reaches of the Basin where it borders the Karakorum range. On the other hand, if there were earlier instances of population exchange with Indian and Pakistani regions, it could be expected that, while documentation did not exist in the oasis kingdoms, it would at least be present in organised polities such as Gandhara or Samarkand. Lastly it could also be possible that immigration between regions was largely indirect and that documentation of this only reached the closest intermediaries while only slowly spreading to regions beyond the mountains into the Tarim Basin. Material remnants of cultural exchange can be found in the material record of the tombs found in for example Yingpan and Niya. Some of these have been associated with royalty who would have been the recipients of diplomatic gifts between polities. Another argument for this would be that instances of foreign culture did occur in textiles found in the Yingpan cemetery among other things, the perceived breadth of these influences seem to be extensive, going as far as the Parthian or

even Mediterranean provinces, with the earliest instances of silk in Europe being dated to the fourth century BCE. The same holds true for the various pigments which were found in the dyes with which these textiles were painted, with some pigments being made from plants found in East Asia, while others were made from plants native to Europe and the Near East or India. Another type of objects found within the archaeological archive which indicates influence of both eastern and western nations are coins found within several of the oasis kingdoms which are Chinese on one side and Kushan on the other. These too however are dated after the arrival of the Gandharan immigrants during the first centuries CE. One factor that does seem to indicate earlier contact with western regions however, is the occurrence of glass in the Xinjiang province. The technology of making glass in East Asia seems to have lagged behind regions such as Mesopotamia and Egypt, with the earliest instances of glass in the Tarim Basin being 500 years later than in the former regions. And in the Chinese core regions, which at that point held no control over the Tarim Basin, the earliest glass is yet 500 year younger. In addition to this the earliest glass seems to have been created using primitive technologies, rather than the further developed glass from the western regions, seemingly indicating that rather than glass wares, what was traded was the technology of producing glass. It could be possible that this technology developed independently in both the Tarim Basin and China from areas such as Mesopotamia. However as the production of glass is often connected with byproducts from creating Bronze, in combination with the fact that the Chinese developed bronze millennia earlier than they produced glass, it might be more probable that they gained the technology from an outside source, rather than that they developed it themselves 4000 years after the fact.

The first Chinese actors in the region have a much clearer demarcation as the subjugation of the Xiongnu tribes in the region and the following annexation of the Tarim Basin have been documented by the Chinese themselves. Before that the Chinese would have been limited to contact with the Xiongnu themselves as both polities vied for control over territories. After the conquest of the region, the Chinese emperor was quick to send several thousand people into the region and to secure them with multiple military fortifications. These outposts contained dignitaries which notated exchange of goods with the oasis kingdoms which were relayed with the imperial court. In addition to this, several textiles which are assumed to have been diplomatic gifts from the Chinese have been found in tombs. However these documents largely pertain to official matters of state and do not expand on any cultural exchange between the outposts and the kingdoms. Also Chinese supremacy in the area covers only a part of the timescale of this research, so Chinese documentation after the Han lost control over the Tarim Basin to the Xiongnu and the Kushan might be severely limited, though perhaps this could be supplemented by documents of Kushan origin.

Proof of both exchange and contact could however be seen in the spread of Buddhism first throughout the Tarim Basin and later into the Chinese empire. The first signs of this would be the arrival of Buddhist texts in Sanskrit in the oasis kingdoms along with the construction of stupas in many of the sites described in this research. These writings were brought to China by the first Chinese Buddhist monks during at least the second half of the third century CE. Considering that the first Indian, and thus possibly Buddhist, immigrants in the area were documented during the third century CE, this could either mean that these immigrants took their

spirituality with them from the beginning, or that earlier immigration did occur and that no records of this have yet been found. However, considering that there seems to have been no push from the oasis kingdoms themselves on a cultural level it is possible that the former assumption holds true. After this follows the development of many new concepts for the Chinese Empire such as monasteries and organised religion, which seems to have been adopted from earlier Buddhist occurrences of this. These new concepts were so radically new that the imperial court initially did not know how to deal with them. In addition to this, after new developments in the religion, the Chinese adapted Buddhism into a new identity with a greater focus on iconography and visual depictions.

It is important to note that, while the earliest instances of documented contact with other regions are quite young, the area itself had been populated for thousands of years. These populations must have come from somewhere whether that be through the Karakorum mountain passes or through the steppes to the North. This means that at some point there has to have been some sort of contact between the people in the neighbouring regions, though it is also possible that these contacts were lost after the conquest of the Tarim Basin by the Xiongnu. Although it is unknown whether these populations held some sort of contact with their origin regions, the possibility can not be ruled out especially considering the spread of technologies such as glass making.



## Conclusion

It can be concluded that in the few centuries since the Silk Road trade routes had opened, several changes occurred in the cultural and material archive of the Tarim Basin. These changes can be sourced both to the Han Dynasty that had conquered the area during their wars with the Xiongnu in the second century BCE and to Indian immigrants which traveled to the oasis kingdoms of the Tarim Basin throughout the first to third century CE. Although it can not be said with certainty whether this was through pressure by the Kushan of India or because immigration was better organized through Chinese influence (even after they lost control of the region). These foreign influences can be seen in the manifestation of several changes.

Most material of these changes is the import of foreign goods in the area. Several textiles with the characteristics of neighbouring regions, as well as textiles which combine these characteristics, can be found within tombs from several kingdoms in the basin. In addition to these are official signatures belonging to the Chinese and the Kushan empire which can be found on the features of local coins and contracts.

Another newly introduced feature of the region was the concept of written language. Before the arrival of the Chinese and Indians there were no scriptures in at least several of the local kingdoms. After the immigrants arrived these kingdoms started to use the language of both empires in documents. This came in the form of Sanskrit, Brahmi, Kharosthi and Chinese of several types of documents such as contracts, trade reports and religious scriptures.

Finally there was a profound cultural aspect of the changes of new arrivals. A new religion in the form of Buddhism was successfully introduced in the area. Buddhism would in the centuries that followed spread to the Chinese core regions up to and including the imperial court. Not only did this bring a new philosophy to China, it also introduced new societal concepts such as monasteries and a new religious caste in the social hierarchy. There was also an increased importance of iconography in religion which led to new hierarchical bonds between artists which made these objects and the nobles and monasteries who commissioned them.

While this research has indicated the existence of several influences of foreign polities within the Tarim Basin after the opening of the Silk Road, it was not possible to incorporate all existing data of the region. Because most of the existing sources are written in Chinese, an additional essay can be written incorporating the translated versions of these documents. In doing this it might be possible to include more kingdoms and sites in this overview of historical activity within the region. Doing so could also be conducive for international cooperation in archaeological research in the area both during the Belt and Road Initiative and the years that follow and in extension be a boon for the diplomatic ties between nations of various continents. Should the sources used in this research reflect the overall availability of information about the Tarim Basin, then there will be many more opportunities for Europe and Asia to investigate the area in the Xinjiang province for other sites to tell us about the history of the Silk Road trade network.

## **Abstract**

This thesis will analyse cultural exchange via the Silk Road trade networks in the Tarim Basin located within the Xinjiang province and its effect on the local populace during the time of the Chinese Han and Jin dynasties (202 BCE- 420 CE). This will be done by means of several case studies which will cover such topics as material culture, cultural technology such as writing and immaterial culture such as religion. In doing so this thesis will attempt to broaden the perspective of our understanding of the effects of cultural contacts both through people themselves as through the concepts and products they brought with them and how this is reflected in the local cultures of the Tarim Basin. This will hopefully give us further understanding of the workings of the Silk Road trade networks and the anthropological processes that came with them.

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## Figures

**Figure 1.** (Kmusser 2008, [https://en.wikipedia.org/wiki/Tarim\\_Basin#/media/File:Tarimrivermap.png](https://en.wikipedia.org/wiki/Tarim_Basin#/media/File:Tarimrivermap.png), accessed June 13th 2021, Own work using [Digital Chart of the World](#) and [GTOPO](#) data, labels based on [GEOnet](#).)

**Figure 2.** (Schreiber 2007, [https://commons.wikimedia.org/wiki/File:Tarimbecken\\_3.\\_Jahrhundert.png](https://commons.wikimedia.org/wiki/File:Tarimbecken_3._Jahrhundert.png), accessed June 13th 2021, based on data from Rhie, M., M., 1999, Early Buddhist Art of China and Central Asia Vol. 1, Leiden: Brill Academic Publishers)

**Figure 3.** (Liu *et al.* 2013, 4445)

**Figure 4.** (Hansen 2012, 46)

**Figure 5.** (Hansen 2012, 40)

**Figure 6.** (Hansen 2012, PS6)