Chapter 5
The Chinese Civilization Originated on the Southwest Silkroad

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Abstract This chapter explores the significance of the Southwest Silk Road in shaping Chinese civilization by examining paleo-archaeological, genetic, historical, and linguistic evidence. The Southwest Silk Road, connecting East Asia and Western Eurasia through Bangladesh and northeastern India, played a crucial role in the formation of Chinese civilization. Genetic analysis reveals migration routes of dominant Y-chromosome haplogroups (O, N, C, D) overlapping the Silk Road, with O-M134 becoming ancestors of proto-Sino-Tibetan speakers. Bangladesh likely served as a significant station for undifferentiated NO haplogroup members. With linguistic evidence, I also challenge the northern origin hypothesis, which placed the homeland of the Sino-Tibetan family in the middle Yellow River or Central Plain. Instead, I argue that early Sinitic speakers were highland pastoralists inhabiting the northern range of the Southwest Silk Road, specifically western Sichuan/ eastern Tibetan Plateau. Ancient Bangladesh region, situated on the Silk Road's western range, significantly contributed to proto-Sino-Tibetan populations and the emergence of Chinese civilization.

The Global Importance of the Southwest Silk Road

The Chinese civilization emerged as a synthesis of various technologically advanced Neolithic and early Bronze Age cultures, transmitted through two principal routes known as the northern route and the southern route. Contrary to earlier beliefs that attributed the development of subsistence products, metallurgy and pottery techniques, linguistic origins, transportation, and weaponry to indigenous Chinese innovation, recent research indicates that many of these elements were imported or directly influenced by civilizations along these two main routes. The northern route facilitated the connection between West Eurasia, Central Asia, and Central Plain in the Yellow River basin. This route passed through the upper Yellow River corridor, commonly referred to as the Hexi corridor, which traverses modern Gansu

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and Xinjiang. The northern route also encompassed the Mongolian plateau, where sites associated with the Afanasevo bronze culture were discovered, including the early bronze age Qijia culture in Ganzu.

The northern route has received relatively extensive attention from archaeologists and historians since the early twentieth century. For instance, the Yangshao culture, a hallmark of Neolithic culture within the realm of China proper, is associated with the agricultural domestication of millet (both foxtail and broomcorn millet species) around 6000 BP (before present). However, it is worth noting that millet cultivation initially took place outside the traditional boundaries of Central Plain in regions such as Bohai and West Liao River, dating back to 9000–8000 BP. These early cultivators are considered the ancestors of various Trans-Eurasian language groups, including Koreanic, Japonic, Tungustic, Mongolic, and Altaic languages (Robbeets et al. 2021).

The spread of millet cultivation towards the Yellow River basins occurred discontinuously over the following two millennia (Hosner et al. 2016; Leipe et al. 2019), as it was gradually adopted by local inhabitants and introduced to the region by Trans-Eurasian people from the West Liao River. Another compelling piece of evidence challenging the demic hypothesis of a Sino-Tibetan (ST) language is the absence of etymological cognates for staple agricultural products such as millet and pig across Sino-Tibetan languages. Collectively, these pieces of evidence suggest that the introduction of millet cultivation, which marked the neolithic Yangshao culture as the “dawn light” of Chinese civilization with its first settled agriculture, was likely an import from the West Liao River Trans-Eurasian cultures. This transmission occurred after the divergence of Old Chinese from the Proto-ST language.

In the northern route, the earliest bronze age site ever excavated is seated in the eastern end of the route connecting upper-middle YR to Central Asia. This bronze age culture became known as Qijia culture, which is a non-indigenous bronze culture extending the Afanasevo culture found in Inner Asia and southern Siberia. Studies by Hosner et al. (2016) showed a decline of archaeological sites based on millet and pig agriculture in the YR region during the 2nd millennium BCE was accompanied by the introduction and growth of products and technologies originating from West Eurasia, including sheep, goat, cattle, horse, chariots, wheels, wheat, and barley. The first archaeologically confirmed state of China—the Shang dynasty—was long suspected to have originated from Manchuria in the northeast by historian Fu Sinian. The overwhelming military advantage enjoyed by the Shang people is documented in their horse-driven chariots unseen by the contemporaneous foot soldiers in the YR basin (刘仲敬 2014). This exact chariot technology and horse domestication, along with sheep and cattle, was transmitted via the northern route by agro-pastoralists from Central Asia and the western Eurasian steppe, by a branch of the Indo-European people whose expansion took place in the 3rd–2nd Millennium BCE and reached YR Central Plain by the end of 2nd Millenium BCE (Downs 1961; Hosner et al. 2016).

In contrast, the southern route, although less explored, consisted of both a land branch and a maritime branch. The maritime route linked southeast Asia with the coastal regions of eastern China, leading to the settlement of proto-Austrasiatic, Kra-Daic, and Hmong-Mien people in the latter area. The land route connected southwestern China (specifically Yunnan and Sichuan) and the Tibetan Plateau to regions such as Burma, northeastern India, and modern-day Bangladesh. Ultimately, this route interacted with Semitic and Indo-European cultures in western Eurasia. The southern route later became known as the Southwest Silk Road, while the northern route evolved into the Northwest Silk Road.

The prehistoric human deployment of the resources, terrains, and structures of the Southwest Silk Road was very antiquated and far predated the earliest written record of this route by Chinese historians. The later Sinocentric historical narrative promoted by the "tianxia" worldview, however, sees the world from a centrifugal perspective that historical importance and cultural relevance were equated with the Central Plain of China, while other regions further from the Central Plain were dismissed as barbaric. The barbarians of all four directions (the Eastern Yi, Northern Di, Western Rong, and Southern Man), in the eyes of heavily ideologized Chinese literati bureaucrats, lived in ignorance waiting for salvation by memorizing Chinese characters and kowtowing to the benevolent but condescending Confucianist patriarch. By far, archaeological evidence has firmly refuted such denigration by the Sinocentric worldview. The newly discovered paleolithic cultures in the 2020s, i.e. Mengxi in Sichuan and Piluo paleolithic culture in Garze of Sichuan, reveal that prehistoric homo sapiens settled in southwestern China and mastered advanced stone craft while led a bountiful hunter-gatherer lifestyle before human occupied the Central Plain of China. The marvels of bronze age Sanxingdui culture in Sichuan, too obvious to mention, showed that the civilization on the Southwest Silk Road was not only heterogenous to early Chinese culture in the east but its metallurgy and manufacturing were also more advanced (Von Falkenhausen 2003).

However, the Sinocentric historical narrative continuously attempts to establish how the Southwest Silk Road was a trade and civilizational project largely developed by the sovereignty of Chinese dynasties. However, common sense in history and economics defies such assertation. A trade route requires the free flow of capital, liquidity of assets, and participating customers with diversified demands. None of these can be activated by a monopolizing agent. Quite contrarily, buzzing and booming transactional activities must already have been present among the different communities along the Southwest Silk Road, each brought with their unique products and demands before any central government can set up any profitable trade post to also benefit from trading with all other equal parties in this market.

The nationalist and Sinocentric narratives had simply concealed the independently important roles of the Southwest Silk Road and the history of the indigenous population along this route, including northeastern India and Bangladesh, in the making of the East Asian historical trajectory. If we uphold how the central government from Central Plain singlehandedly created the Southwest Silk Road and enriched inland China by setting trade posts in Sichuan (Basu Commandery or Basuria) that connect to "barbarian states" in modern-day northeastern India, Bangladesh, and Burma, how can we explain these official trade posts were short-lived and quickly abandoned due to insufficient maintenance and funding. Daily commerce had been conducted since the 2nd millennium BCE between Sichuan and western Eurasian via the Southwest Silk Road, whereas centralized Chinese attempt to establish an official trade post only first occurred in the first century BCE.

Fig. 5.1 Modern design of southwest silkroad as depicted by www.silk-road.com

For example, The Record of the Grand Historian documented: when Xiongnu cut off and monopolized the Northwest Silk Road, Chinese Han dynasty's emissary Zhang Qian found Sichuan Silk (蜀锦) and Sichuan-Tibetan Bamboo (邛竹杖) in Bactria and was surprised that indigenous people of Sichuan had been doing business with Central Asia and India via the "Sichuan-Hindu route (shu-shendu dao 蜀身毒道)" for millennia. The same book also documented that in the attempt to acquire a legendary sauce "qijiang (枸酱)", likely related to curry paste, traded in Sichuan (the most southwestern territory by then), Chinese General Tang Meng tried in vain to conquer southwestern states and could not monopolize the Southwest Silk Road. The failed conquest made the General replaced by a peaceful Sichuan indigenous Sima Xiangru, who convinced the Chinese emperor in the north that trading with "southwestern barbarians" was not worthy of military spending. More of a gesture to save face, the Chinese Emperor Wu knew that his military action was a failure and the Southwest Silk Road had been firmly controlled by indigenous states long before him. *The Record of the Grand Historian* also recorded that Sima Xiangshu used to wear a shorts known as "bullock nose pants" (犊鼻裈) in public, a deviant and vulgar act in the eyes of Confucianists. This shorts is associated with people who "wash horses". With archaeological evidence showing short pants were originally worn by horse herders in western Eurasia (刘仲敬 2014), it is not unlikely that Sima Xiangru and other Sichuan natives had learned about wearing short pants by interacting with western Eurasian merchants via the Southwest Silk Road (Figs. 5.1 and 5.2).

Bangladesh on the Southwest Silk Road

The Southwest Silk Road in traditional definition encompasses the human-constructed trails conjoining eastern South Asia and southwestern China, but it is one of the only two major land routes (the other being the Northwestern Silk Road) by which western Eurasian populations and goods can physically reach East Asia. Hence, in a broader historical and economic lens about global history, the Southwest Silk Road ultimately connects East Asian civilizations to Western Eurasian civilizations throughout millennia, including the Greek states, Persian empires, various

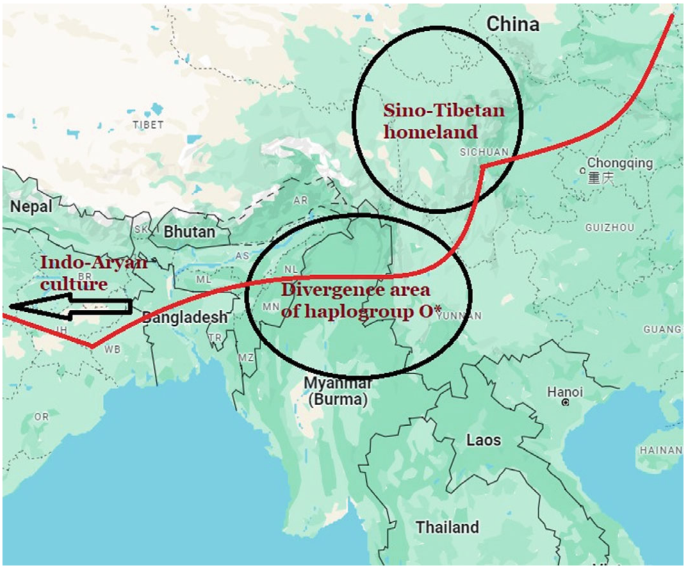

Fig. 5.2 Approximating the southwest silkroad (red) that connected China to Indo-Iranian states via Sichuan, Yunnan, Burma, and Bangladesh

Hindu and Buddhist states, Islamic Caliphates, the Roman and Byzantine Empire; once reaching South Asian trade centers such as Goa and Calicut, the Southwest Silk Road further sends cultural and commercial emissaries to commercial powerhouses on the East Coast of Africa such as Mogadishu and Zanzibar.

By either a strict definition or a broader one, Bangladesh sat at a pivotal position on the western side of the Southwest Silk Road. Homo sapiens migrated out of Africa in two to three major waves. The initial wave happened during the Pleistocene when the Glacial Maximum era permafrost and tundra occupied most of today's habitable land. Our ancestors during the last Glacial Maximum moved eastward but they were blocked by harsh glacial and dry environments north of the Iranian Plateau. To their east, the Himalayas and Tibetan Plateau were also insurmountable. Eventually, they moved through both coastal waterways and land routes to South Asia, where some of them spread across the Deccan Plateau to the south while others migrated further east along the Indo-Gangetic Plain toward modern-day Bangladesh. As the alluvial plain and estuary of the Ganges River, Bangladesh was not ideal for early hunter-gatherers, but it soon became an ideal habitat for agriculturalists facing population pressure since the Neolithic era. The country's early history is characterized by a succession of Hindu and Buddhist kingdoms and empires that fought for control of the Bengal region. The Mauryan and Gupta kings ruled the country from the third century to the fifth century BC.

Of course, human social interactions and their networked existence are not confined by the boundary and border of modern-day nation-states. Bangladesh is but an integral part of the broader socio-geographical concept of Eastern South Asia.

This conceptual region comprises the highlands and hills on the southern range of the Himalayas (including modern-day Nepal, Bhutan, Sikkim, and Arunachal Pradesh); northeastern India states such as Mizoram, Manipur, Assam, and Nagaland; western Burma states of Chin and Rakhine; and, of course, Bangladesh. This region roughly coincided with the Bengal Presidency during the British Raj and was a fertile and bountiful plain and forest land bounded by the Himalayas to the north and Chin Hills to the east.

Early humans settled in Eastern South Asia since the Pleistocene. It is not an exaggeration to say this region represented by Bangladesh was the final stop and rest area before human ancestors embarked on the adventure in East Asia and, eventually, led to the great divergence into the main genetic and linguistic groups in East Asia. The Eastern South Asia region, including Bangladesh, is home to a diverse range of ethnicities and linguistic groups. Besides the numeral majority that is Bengali, a language in the Indo-European family, there are also Sino-Tibetan, Tai, and Austro-Asiatic linguistic groups. Several important Sino-Tibetan linguistic ethnicities and nations exist in Bangladesh and its vicinity today, including Mrung, Kokboro, Meitei, and Koch. According to the famous Himalaya Hypothesis, the paleo Sino-Tibetan language family originated in this area in Eastern South Asia before they penetrated the Tibetan Plateau to the north and into China's Yunnan and Burma to the east (Blench and Post 2014). If this hypothesis undergoing heated debate proves to be correct, it would be fair to say that the Chinese people and civilizations had an ultimate origin in Bangladesh and India. The other famous hypothesis on the origin of the Sino-Tibetan language, i.e. the Sichuan Hypothesis which points the original homeland to western Sichuan, would also need to assume that the ancestral Sino-Tibetan people at least traversed across Eastern South Asia before they took a turn into southwest China (Van Driem 1999). This region is also the likely origin homeland of the Austro-Asiatic language family, a main branch of which (Munda) still lives in Bangladesh (Kumar et al. 2006). Below, I will describe the traces of human migration from here to East Asia with haplo-genetic and linguistic evidence.

The Genetic Footprints Along the Southwest Silk Road

The southern route of the grand cultural connection between China and western Eurasia, namely the Southwest Silk Road, consisted of a maritime and an inland trail. The connection occurred between China and northeastern India and modern Bangladesh took place along the land route, which will be the focal discussion of the current chapter. The maritime route spread the population belonging to Y-haplogroups O-M95 and O-M119 along southeast Asia and coastal China, from modern-day Guangzhou to as far north as Shandong. Haplogroup O-M95 overlapped and concentrated among the speakers of Austrasiatic languages, including Munda, Khmer, and Vietnamese, as well as southern Han Chinese, whereas O-M119 is often found among Austronesian and Kra-Daic speakers in addition to southern and eastern Han Chinese. These demographic groups correspond closely to Hundred Yue/Viet (

百越) and Hundred Pu/Pyu (百濮) barbarians recorded in Chinese historical writings including *Shiji* and *the Book of Han*. Even today, the endonyms of southeastern Han Chinese cultures still retain the vestige of this ancient connection to Austroasiatic and Austronesian roots by having the root word "Yue/Viet" in titular appellations, such as Wu Yue (Ngoyue), Min Yue (Menve), and Nan Yue (Namyuet). The festival activity of dragon canoe racing, New Year flower market, and flower boat tour, unseen in Central Plain but common in Southeast Asia, reflects the intimate cultural connection between southeastern China and southeastern Asia.

Our focal interest here—the inland route of the Southwest Silk Road—is of paramount importance to the peopling of East Asia because this is where major eastern Eurasia Y-haplogroups had evolved and split into modern genetic and linguistic groups since the out-of-Africa movement of homo sapiens. Ancient haplogroup D hailed from the Horn of Africa into the Arabian Peninsula, where it diverged from haplogroup M and took the maritime coastal route to Andamese Island and, northward, to Bangladesh. Around 60 kya, bearers of descendant haplogroup D1 and D3 traveled further north to Yunnan and across the Himalayas to the Tibetan Plateau. Today, approximately 20–40% of Tibetans, 20–30% of Yi, and 10–20% of Qiangic people belong to haplogroup D (Guo et al. 2019; Kang et al. 2012; Li et al. 2007; Song et al. 2022; Wang et al. 2014, 2018). This haplogroup is also found in some Han Chinese at a lower frequency. The relatively heavier concentration of haplogroup D in these Tibetan-Burman groups suggests that, first, the Tibetan-Burman branch of the Sino-Tibetan language family received a distinct genetic foundation different from Han Chinese; second, as an earlier human migrated into modern China, haplogroup-D predates haplogroup-O, which is the foundational haplogroup in most Chinese ethnic groups including Han Chinese. Traveling further north, haplogroup D is found among modern-day Mongolians, Koreans, and various Turkic groups in Xinjiang. The migratory map of haplogroup-D depicted that northeastern India and Bangladesh were the main watersheds that formed the initial peopling of China.

Twenty thousand years later, around 40 kya, ancient haplogroup-NO followed the steps of haplogroup-D to arrive in the vicinity of northeastern India and Bangladesh. Haplogroup-O is the major genetic lineage found in East Asia and is particularly prevalent in populations from China, Korea, and Japan. After diverging from its antecedent NO group and splitting from haplogroup-N around 20–10 kya, haplogroup O began to expand and diversify within East Asia around 25,000 to 20,000 years ago. This coincided with the retreat of the glaciers and the subsequent reoccupation of the region. The migration routes and patterns of this expansion are still being studied, but it is believed that Haplogroup O mainly spread across East Asia by (1) traversing eastward to southeast Asia and then into southern China, where O-M95, O-M119 and O-M7 groups were developed, and (2) northward route into modern Sichuan and Yunnan, before it finally reached upper and middle Yellow River and evolved into one major ancestral lineage of modern Han Chinese—O-M134*117 as well as other Sino-Tibetan groups (Ning et al. 2016; Wang and Li 2013). Another study (Shi et al. 2005) showed that most of the major STR haplotypes occurred in southern populations living in modern-day Burma, Yunnan, Thailand, and northeastern India, which is likely the origin place of haplogroup-O.

The intriguing evolution history of haplogroup-O reveals that this ancestral group probably stayed longer in the vicinity north of Bangladesh and southeast Asia before it diverged into different mutation groups. Analysis of haplotypes based on short tandem repeat (STR) indicates that O-M7 (mainly Hmong-Mien people) and O-M95 (mainly Austro-Asiatic people) were closer to undifferentiated O* before the evolution bottlenecks imposed by climate and topography were broken off by proto-Sino-Tibetan ancestors who were marked by O-M122 (Cai et al. 2011). This means that the ancestors of the Sino-Tibetan people stayed in the warmer woodlands of Asia for 20–25 kya and departed at this point to venture northward into the semi-arid scrubs of modern-day Yunnan en mass. The northward migration of O-M122 initiated around northeastern India and Burma around 20 kya, they traveled up to the Salween River or Mekong River into Yunnan. Through the Zomia highlands and forests, they moved into the Sichuan and eastern Tibetan Plateau, a region that then became the homeland of the proto-Sino-Tibetan language (Van Driem 1999). The estimated time of the arrival of the ancestral Sino-Tibetan people into China varies by studies, but a consensus is 25 kya, about 18–20 thousand years ahead of the Yangshao Neolithic culture, which ushered in ancient Chinese civilizations (Cai et al. 2011; Shi et al. 2005). Before their long march to China, both O-M122 and O-M95 had left genetic footprints in Bangladesh and northeastern India. Today, many Austro-Asiatic people live in Bangladesh (Munda and Khasi), and several Tibetan-Burman nationalities claim northeastern India and Bangladesh as their traditional homeland (e.g. Meithei, Kokborok, Garo), although the Tibetan-Burman groups in South Asia are likely later migrants from Tibet and southwestern China.

Many Chinese people today also carry haplogroup C, which is found concentrated among Mongolic and Tungustic people in northern Tran-Eurasian forests and steppes from Korea to Altai Mountain. Haplogroup-C is believed to have taken the maritime route of coastal southeast Asia and eastern China before reaching the West Liao River and spreading to Trans-Eurasia, thus it has left a genetic footprint all over eastern China, Korea, Manchuria, and the Mongolian Plateau. Both Ghengis Khan and Confucius prove to share the paternal lineage of haplogroup-C2b (Wu et al. 2020), confirming Fu Sinian's hypothesis of the Manchurian origin of the Shang Dynasty. However, the maritime transmission route of haplogroup C had less to do with northeastern India and Bangladesh, we will leave it out of the scope of this chapter. Nevertheless, Bangladesh and northeastern India are of crucial importance in the evolutionary history of human genetics because this region is the only gate for out-of-Africa homo sapiens to go into East Asia during the Last Glacial Maximum of around 20 kya. The northwestern Silk Road was closed off by extreme coldness, and the Himalayas were naturally inhibiting. Human migration into East Asia had to traverse through modern-day Bangladesh into Southeast Asia, where they flourished and developed new haplogroups including O, C, D, N, and F (Hallast et al. 2021) (Fig. 5.3).

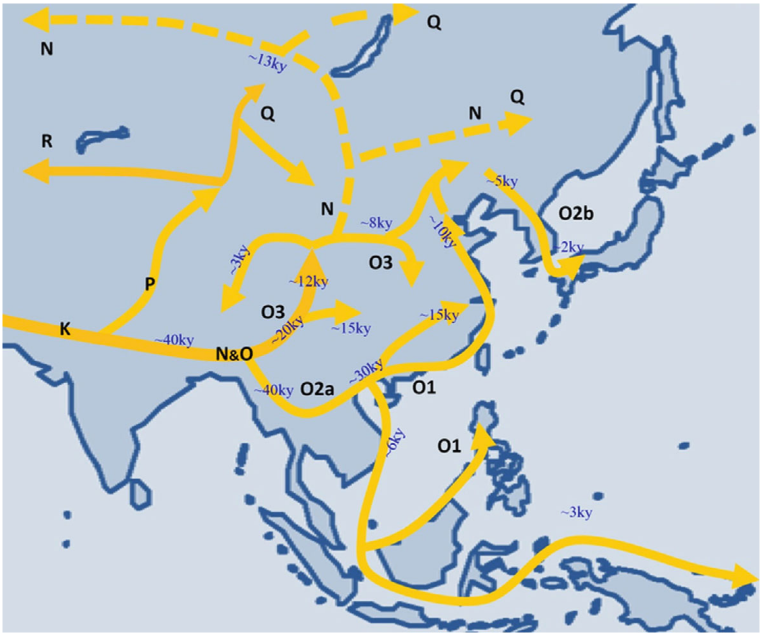

Fig. 5.3 Migration of the Y chromosome haplogroup O in East Asia, from Wang and Li (2013)

The Southwest Silk Road as the Homeland of Sino-Tibetans

The discovery that the eastern Himalayan ranges served as the birthplace of Proto-Sino-Tibetan peopling challenges the nationalistic narrative of China. However, this finding is supported by compelling geographical and genetic evidence. Contrary to popular belief, plains, and lowland estuaries were not suitable habitats for early human settlement until the development of advanced water management and sanitation infrastructure at a later stage.

In his inspiring work *Against the Grain*, James Scott (2017) presents a convincing argument, supported by earlier studies, demonstrating that highland regions with low humidity and ample sun exposure were favorable environments for early agricultural settlement. Both loess plateau (deposited by wind) and alluvial soils (deposited by floods) were ideal for Neolithic agricultural expansion. Notably, the earliest Neolithic civilizations and early capitals in Egypt were established in Upper Egypt (Thebes) or Lower Egypt (Memphis), rather than in the lowland estuaries of the Nile. Similarly, early human traces were discovered in the arid highlands of Eastern Africa, which later gave rise to ancient civilizations in Ethiopia, Nubia, and Egypt. In contrast, the lowland regions surrounding the Congo River or Niger River, which could potentially support even greater quantities of nutrients and biomes, lacked evidence of early human settlement. In East Asia too, nearly all early civilizations were situated on plateaus or hill slopes, except for the maritime Liangzhu civilization.

This can be attributed to several factors. Firstly, lowland river-rich basins are also abundant in disease vectors, posing significant challenges to human habitation. Secondly, competition against predatory animals within diverse biomes would have been intense, and hominids, like other apes, were likely prey until they acquired the skills of stone craft and fire-making during the Mesolithic Age. To effectively defend against predators, as documented in early inscriptions and hieroglyphs portraying humans being hunted, hominids would have required the use of sharpened weapons, which became prevalent during the Bronze Age. Finally, the management of water and flood control was only feasible with the emergence of state-making institutions during the early Bronze Age.

Overall, the geographical and genetic evidence strengthens the understanding that early human settlements and the development of civilizations were predominantly concentrated in highland regions. Not only are highlands suitable platforms for the development of early human settlement and civilization, but when combined with valleys, they altogether became almost the best platform for resource and reproduction. Early humans utilized caves for security, air conditioning, and storage, and we found prehistorical carvings and pictures mostly in caves (enclosed rock walls) or on open mountain walls. The altitude contrast found in highlands with valleys provides an astronomical range of vegetation and fauna. With a rapidly changing climate and diverse nutrients and materials, valleys and highlands offer almost all you need to survive and thrive as a prehistorical hominid: shelter, storage, air-conditioning, food, defense, and evasion. Folklores and proverbs in China still adhere to the term “run into mountains” to describe the first reaction when faced with enemies or danger. James Scott argued eloquently how people in East Asia would avoid exploitation and violence by intentionally migrating to highlands and hills (Scott 2010). This vein of research is consistent with the works by environmental anthropologists John Fleagle and Stanley Ambrose, who suggest that eastern African highlands and valleys provided the refugia shelter for the very first humans. Overall, the tectonic pressure arising out of the colliding Indian subcontinent and the Eurasian plates have created the Himalayan plateau and the range of mountains known as Hengduan Mountains. The geological characteristics and biosphere along the Southwest Silk Road are very similar to the Rift Valley, featuring rapidly changing altitudes and diverse biome, rich river system between mountain ranges, traversable traces along the valleys, etc. Here is what Wikipedia said of the mountain ranges regarding the ecosystem therein:

> The Hengduan Mountains support a range of habitats, from subtropical to temperate to montane biomes. The mountains are largely covered by subalpine coniferous forests. Elevations range from 1,300 to 6,000 meters (4,300 to 19,700 ft). The dense, pristine forests, the relative isolation, and the fact that most of the area remained free from glaciation during the ice ages provide a very complex habitat with a high degree of biological diversity.

Therefore, the physical, biological, and geological characteristics of the eastern Tibetan plateau make it a compelling candidate for the likely homeland of Sino-Tibetan groups. This region offered favorable conditions for the development of a more advanced civilization compared to the fluvial basin in China proper (the central plain) or the semi-arid Loess plateau. The migration of proto-Sino-Tibetan people from Sichuan to the Loess Plateau in Shaanxi and Shanxi, as well as southwest-bound towards northeastern India and the southern side of the Himalayan mountains, was likely driven not by attraction but by a population explosion in Sichuan and the subsequent Malthusian disasters that followed (Van Driem 1999).

E.O. Wilson's island biogeography theory states that species diversity (S) is determined by the size of the island (C), the rate of immigration (A), and the rate of extinction of original residents (z): $S = cA^z$. This concise equation shows insight into the relationship between areal isolation and genetic diversity. Higher areal isolation is associated with lower human genetic diversity, such as in the harsh paths south of the Himalayas and the forests of Burma. In contrast, genetic diversity tends to be higher in larger plains without natural defenses and shelters, such as in China. While biogeography cannot directly explain human demography, as cultural and technological factors play a significant role in human movement and success, early hominids were influenced by deterministic geographical and environmental factors that also shape animal movement patterns and biodiversity. When the original proto-Sino-Tibetans migrated to the southern Himalayan ranges, they likely displaced the indigenous inhabitants and became the dominant genetic contributors in these biogeographical "islands." However, their genetic contribution would be limited and progressively diluted due to the high rate of immigration (A) facilitated by the extensive areal connectivity (C) within China throughout history.

In summary, the eastern Tibetan plateau provided favorable conditions for the origin of Sino-Tibetan groups, and subsequent migrations from Sichuan and other regions influenced the genetic diversity and distribution of these populations. Factors such as areal isolation and connectivity have played a role in shaping genetic diversity throughout the history of China, although cultural and technological factors have also influenced human demography and movement patterns.

The island biogeography offers a strong theoretical perspective for us to interpret the high level of genetic diversity among populations residing along the Southwest Silk Road as evidence for their older ancestral position before other Chinese populations. The dominant Y-chromosome haplogroup O-M117 among Sino-Tibetans is concentrated in the southern Himalayan range and the forests of Manipur and Mizoram. The father clade of O-M117, i.e. O-M134, is found among 86% of Tamang, and over 85% of Sino-Tibetan groups in northeast India including Adi, Naga, Nishi, Apatani (Gayden et al. 2007). It is found among 34% of Bai, 34% of Tibetan, and 17.4% of Mosuo (Song et al. 2022). Wang et al. (2018) concluded that O-M117 and its mutation F8 is the predominant Y-chromosome in the paternal genetic pool of Tibeto-Burmo speakers. Similar findings about the high concentration of O-134 and its various mutations in Bai, Kachin (Jingpo), Nuosu (Yi), Mosuo, Sherpa, Tibetan, and Qiang were too documented (Bhandari et al. 2015; Guo et al. 2019; Wen et al. 2004; Xu et al. 2019). Accordingly, as a direct corroboration of the hypothesis of Sino-Tibetan peoples originating from western Sichuan, Kang Longli and the team (2012) went ahead to suggest that:

> O3-M117 is the only O3 sub-haplogroup appearing in certain Sino-Tibetan populations from the border of Yunnan and Tibet…A potential place for the origin of all Sino-Tibetan

> populations is the region east of Tibet, as we found the highest STR diversity of O3-M117 in the Qiang population from this area.

Similarly, Song et al. (2022) claimed:

> Our results indicated that 1) the highest genetic diversity was observed in the Qiang ethnic group compared to any of the former studied Chinese population, suggesting that the Qiang might be an older paternal branch.

On the contrary, China proper in the Central Plain is unlikely a place of origin of the Sino-Tibetan peoples. The defining O-M117 haplogroup is found in only 9.6–16% of modern Han (Bhandari et al. 2015). Only 4.7% of Yunnan Han and 4.3% of Xinjiang Han carry the O-M117 haplogroup (Song et al. 2022). This low level of existence is comparable to that among Vietnamese—a group barely related to the Sino-Tibetan (Huang et al. 2018). A larger study by Ning et al. (2016) found 11% of Han Chinese have O-M117. Shi Hong and colleagues from the China Academy of Science (Kunming) collected genetic data from 40 populations in East Asia and mapped the distribution of superclade O-M122 (including its subclade M134 and the equivalent mutation M117). The results again pointed to a conclusion that haplogroup O-M122 originated in the south of East Asia about 25,000 to 30,000 years ago (Shi et al. 2005).

Linguistic Evidence

The linguistic evidence for the Eastern Himalayas as the cradle of East Asian civilizations is a ripening field waiting for harvest. Generations of linguists have worked on the family tree of Sino-Tibetan languages. Through the works of Paul K. Benedict and James Matisoff, we now have a much clearer understanding of what did the proto-Sino-Tibetan sounded like. The reconstruction is less than complete but already has shed light on the relationship between Old Chinese and other Sino-Tibetan languages.

Century-long research of comparative linguistics strongly indicates that eastern Tibet/western Sichuan was the homeland of the proto-Sino-Tibetan speakers. Some of these proto-Sino-Tibetans emigrated toward the Yellow River and established Yangshao Civilization. Later, another wave from the eastern ranges of the Himalayas joined the first wave to form the Zhou tribe that later conquered the Shang people in China.

Now we know that Old Chinese with the earliest records of reliable pronunciations came from the Zhou period. The Shang bone inscriptions have left no reliable and clear patterns of pronunciations and their sizes fell far behind the bronze inscriptions of Zhou. We also know through Zheng-Zhang Shangfang, Sagart, and Matisoff's various restoration efforts that Old Chinese resemble Old Tibetan in being a more agglutinative language with complex consonant clusters. If anything, Old Chinese was not an isolating monosyllabic language that represented the middle Chinese since the Qin dynasty. In phonology, morphology, and lesser extent syntax, Old Chinese is a closer relative of written Tibetan and Qiangic languages, rather than Middle

Chinese. The mysterious disappearance of initial sound clusters, verbal agreement, and the lack of corresponding tone change rules between middle Chinese and other Sino-Tibetan languages, when considered in tandem with the fact that middle Chinese phonology and its isolating tendency resembled Hmong-Khmer and Austronesian languages, all of these led Benedict to postulate that Sino-Tibetan is only a language spoken by elite Zhou ruling class but not among the Chinese who occupied central plain:

> It might be argued that the ST elements constitute only a superstratum in Chinese and that the substratum is of distinct origin. In historical terms, the Chou people might be regarded as the bearers of an ST language, which became fused with, or perhaps immersed in, a non-ST language spoken by the Shang people (Benedict 1972, p. 72).

After all, Fu Sinian and Chinese scholars have long suspected that the Shang people originated from the northeast of China. The kings of Shang were shamanic religious leaders who practiced human sacrifice during trance dance and consumed human blood and flesh. Shang is suspected to be an offshoot of the Dawenkou/Longshan civilization continuum, and we also know Longshan artifacts can be found in the Korean peninsula and Manchuria. Thus, Shang people may well speak a Tungustic or Koreanic language and incaved their religious rituals and commands on bone inscriptions that carried little hint about the phonetics. As a result, scholars now suggest that modern Chinese is indeed a creoloid language once used as lingua franca among Hmong-Mien, Kra-Daic, and Austroasiatic people (DeLancey 2013; Van Driem 2022). Instead, Old Chinese spoken by Zhou people is an offshoot of the proto-Sino-Tibetan language that sprang out from western Sichuan.

We now have overwhelming evidence that the Zhou people themselves were part of the proto-Sino-Tibetan barbarians in the eyes of the Shang people, who occupied Central Plain and eastern China. Fu Sinian and Gu Jiegang, among others, proposed that the Zhou people intermarried with Qiang tribes. This now seems correct but further evidence suggests Zhou people are just Qiang themselves. To begin with, *Shi Ji* recorded that the ancestors of Zhou (古公亶父) escaped from Yong into "Di" (northwestern barbarian) territory in evasion of the Rong (another barbarian). They brought in and married "姜媛" (lit. Jiang girl). But the character Jiang (姜) is just the same as Qiang (羌), and their Old Chinese sounds are identical to "klaŋ". Pulleyblank (2000) argues that "Jiang", despite its radical of "female", bore no implication to restrict its use to females only because this female radical was also used to denote "surnames" as in 姬, 嬴, 姚, 姜, 姓. Therefore, the clan 姬 that founded the Zhou dynasty cannot be distinguished from 羌/姜 tribe since they engaged in the exogamous exchange of brides for generations and gradually became a tribal federation. In addition, it's well known that 羌 appeared frequently in Shang bone inscriptions to describe barbarians, who were often captured and enslaved as human sacrifice and even food for the Shang court. However, descriptions of 羌 were vastly lacking during the Zhou era because the founders of the Zhou dynasty were part of 羌 themselves.

Second, beyond the 羌 clan, Zhou people likely intermarried and participated in collective communal activities with other Sino-Tibetan groups in the southwest. Due to its tribal federation nature, the Zhou people were able to summon eight tribal countries in its victorious conquest of Shang dynasty. Even more interesting is the fact that these eight tribal countries (庸,蜀,羌,髳,微,卢,彭,濮) were all from the greater Sichuan and Tibetan Plateau areas, coinciding with the homeland of proto-Sino-Tibetan people. *The Book of Documents* recorded that the King of Shang from Chinese Central Plain called out these tribal countries including Zhou: “Arrived from afar, people of the west” (逖矣!西土之人). Combining with the routes of genetic transmission discussed in the preceding section, I argue that prehistoric Zhou people originated in western Sichuan/eastern Tibetan Plateau and only later moved to the Loess Plateau basin. During the first century BCE, the Sinitic Zhou people could still converse with their Tibetan-Burman brethren nations and united them in their conquest of Shang.

Finally, Liu Zhongjing (刘仲敬 2021) has postulated another theory that 成-*deŋ as in Chengdu (the capital of basin Sichuan), 氐-*til as a Qiangic tribe all refer to the same meaning as “highland”. I found preliminary evidence for this theory from the reconstructed proto-Sino-Tibetan. If confirmed, would prove that 氐, 羌, 成, 姬, 姜, all are related to the same etymon of “highland” or “highlanders”. See: (1) 成-*deŋ, a variant of the root for the mountain in proto-Sino-Tibetan *m/r-duŋ, a modern Mandarin version of this root etyma is 冢(zhong, *ti̯wong); (2) 羌/姜in Old Chinese is *klaŋ, this is perhaps cognate with another proto root *klaaŋ, which means mountain in Tibetan-Burmo speakers of northeastern India, such as Kuki and Chin. The Chinese variant derived from this root is 京-* kraŋ and 岗 -*kluŋ, denoting both capital and mountain. (3) if the hypothesized velar final suffix -ŋ above does exist, adding -ŋ to *til-氐 derives sound variation of *tieŋ and the palatal *l merged with velar -ŋ. Then, 氐 is just another form of 成-*deŋ, which itself is a variant of the proto-Sino-Tibetan root m/r-duŋ, meaning highland/mountain. In the third century ACE, a Qiangic kingdom established by the Di Qiang tribe (氐羌) named their dynasty 成汉. The titular 汉 refers to the Han dynasty in Central Plain, an honorary word reserved for the royal and civilized world. Claiming symbolic attachment to civilization was a strategic conduct among technologically advanced military societies to claim diplomatic legitimacy with culturally advanced agricultural societies, such as the Bulgarians receiving baptism and Christianization from Byzantines. However, the word 成 in their title is a tale-telling sign that 成 as in “成都” and 氐 as in “氐羌” shared the same underlying meaning related to highland people.

The language spoken by Sichuanese living in the basin today is Chinese Mandarin (southwestern dialect), but other Sichuanese living in highlands and valleys are various groups of Tibetan, Nuosu, Nisu, Qiang, and Tujia, whose languages still preserve the ancient traits of proto-Sino-Tibetan. Sichuan had continued to be the spring of Sino-Tibetan tongues to the rest of East Asia. One example shows that Sichuanese retained proto-Sino-Tibetan pronunciations, even a thousand years after the Zhou/Qiangic conquest of China, while the Chinese creole spoken since the Zhou era had lost the original pronunciations. In a comment to *Erya* (尔雅), it was mentioned “蜀人呼笔为不律也”. The comment was added by Guo Pu in Eastern Jin Dynasty around 300 AD and it means “Shu people call pen as *pu-ljeut”. Linguists now know that the etyma in proto-Sino-Tibetan for the pen as a writing device is exactly *brəy*, evolved to be *bri* in written Tibetan, *brui* in Tsangla, *brjar* in

Tangut, *re* in Burmese, and *bi* in Mandarin. People in Sichuan, at least during the third century AD, still preserved the proto-Sino-Tibetan pronunciation for pen while the Chinese had lost it due to intensive creolization.

In summary, from a paleo-linguistic perspective, the harbinger of today's Sinitic language was a group of proto-Sino-Tibetan offshoot population living in northwestern China, but their ancestral origin was related to the Qiang people living in the hills and mountains of western Sichuan and Eastern Himalaya ranges. The Southwest Silk Road connecting East Asia and Northeast India left vestigial evidence that the early Chinese civilization was born out of and propelled by the proto-Sino-Tibetan communities spread from today's Bangladesh to Sichuan.

Ancient Cognates and the Homeland of Sino-Tibetans

There are two main competing hypotheses of the homeland of the Sino-Tibetan language (ST): the northern China hypothesis versus the Sichuan-Himalaya hypothesis. The northern China hypothesis is a catch-all umbrella term to put both central China Yangshao culture along the middle Yellow River (YR) and the upper YR Qinghai-Gansu area in the same designation. However, upper YR and middle YR are very distinct culturally and geographically, as well as in terms of their access to other contemporaneous cultures that bore the peopling of the Y haplogroups of C2, Q, and N. Linjia site of Majiayao culture at upper YR in Gansu is the earliest site for bronze metallurgy, suggesting an Inner Asia route of technological spread from the west. On the other hand, Yangshao culture as a millet farming population has acquired millet from the much earlier Transeurasian cultures in today's Amur and Liao River areas (Robbeets et al. 2021), who had cultivated millet as hunter-gatherers and only needed to partly domesticate millet because its harvest cycle is a short period of 45 days. The spread of technological advances such as millet cultivation or bronze metallurgy does not mean a parallel spread of genetic and linguistic bearers. Archaeological findings that formed Majiayao culture may have appeared later than Yangshao and its people acquired millet farming from Yangshao, but they only imply the route of technological transmission, not a genetic and linguistic one. An archaeologist from the future may dig out sites in Hong Kong with much-advanced semi-conductor technology, compared to Gansu, owing to Hong Kong's convenient maritime commerce route with the United States, then s/he may wrongly conclude that Guangdong precedes and leads the peopling of Gansu in a form of demic diffusion. Interestingly, a recent Bayesian phylogenetic study (Zhang et al. 2020) that purported the northern origin hypothesis, ironically, found the highest probability density for northwestern Sichuan to be the homeland of proto-ST in its supplement analysis.

The assumption of demic diffusion has undergone critical evaluation recently. Given that millet cultivation was discontinuously transmitted from modern Manchuria (West Liao River) to Yellow River, and only then spread to Sichuan and Tibetan Plateau over two to three thousand years (Hosner et al. 2016), being an earlier culture to cultivate millet says nothing about whether the population of this culture migrated to and replaced other later adopters. For example, there is simply no common cognate for millet (both broomcorn and foxtail species) across ST. The Old Chinese 稷 *tsik* can only find a correspondence with Nungish *cek*. The lack of etyma for millet in ST languages refutes the assumption that millet was very important for proto-ST people. If the middle YR area in north China was the homeland of ST, then other ST clades would have known how to say "millet". Similarly, the pig is another hallmark species used to prove Yellow River agriculturists initiated the demic diffusion of proto-ST. Unfortunately, just like millet, Sagart (1999) found in the Roots of Old Chinese that "No outside comparisons have been found for a root *hlaj? 'pig'. It is possible that we are dealing with a Chinese innovation".

Finally, Jade Guede's (2018) review of archaeological fieldworks in the eastern Tibetan Plateau and western Sichuan showed that millet farmers did not fully expand into this region but gave way to millet and pottery technology to the local foragers and hunters. The rapid penetration of millet farmers into the Himalayas was also questioned as implausible for a short period by Liu et al. (2022). Then, the more realistic scenario is that the local foragers traded, conflicted, and inter-married with millet farmers, forcing the latter to hold steady in the low-elevation river valleys of the Plateau. Local foragers maintained a versatile economic advantage over millet farmers by adopting multitudes of subsistence strategies including hunting, subsistence farming, and herding. Thus, Neolithic sites in the eastern Plateau such Karuo received Yangshao pottery and millet infusion only to a limited extent during a limited timeframe. Millet farmers intermingled with local advantageous foragers, instead of replacing them in the manner that the Indo-Europeans did to prehistoric Europeans and the Indus River civilization. This peaceful coexistence scenario likely reflects the fact that the indigenous inhabitants of the eastern Tibetan Plateau were already cultural and genetic relatives of Yangshao millet farmers before the domestication of millet and pigs, and this possibility is attested by genetic studies on Y-haplogroup O-M134.

One way to settle the debate over the homeland of proto-ST language is by tracing the common etyma to a natural environment. In paleontology, word roots from related languages in a family may reveal the common knowledge shared by the proto-speakers of the language about their familiar natural environment. The lack of true cognates to signify a common object in the initial environment where the same linguistic family occupied will undermine the assumption that the earliest forebears of the proto-language may have lived in this environment before splitting into the extant languages. For example, Abram had been seeing automobiles and calling them "car" by the time he had three kids, all his three kids would learn the word "car" and retain it as a basic root to describe car-like objects even when they change the term with certain morphological adaptations. On the other hand, if Abram has never seen and called a "car" and all his kids learned about this machine on their own after they moved out, they may call the machine with their convenient word root, e.g. auto-mobile, big wheel, transporter, vehicle, etc.

After all, we may locate the homeland of ST by tracing it to a natural environment, in which most members of the ST family would have common cognates to describe the typical products from this natural environment. For etymology, I have consulted Jacques Guillaume's forthcoming article "Origins of Sino-Tibetan, bringing in evidence from history, biology and archaeology" and Matisoff (2009) "Stable Roots in Sino-Tibetan/Tibeto-Burman", as well as the STEDT database. What are some stable and reconstructible ST etyma then? There are three bear species, monkey, bamboo, birch, pine, and fog. But agricultural terms cannot be reconstructed, undermining the Yellow River demic diffusion hypothesis. Interestingly, we will see these natural objects in their totality could be found only in prehistoric western Sichuan/eastern Himalaya along what was later known as the Southwest Silk Road.

1. *Bear*

Above all, the animal bear (*ursidae*) is of the utmost interesting story that further helps us pinpoint the homeland of ST to western Sichuan/eastern Himalayas.

1.1 *Black Bear (ursus tibetanus)*

The etymon for bear in proto-ST is *dɣwjəm*. In Tibetan-Burmo, it evolved to be *d-wam*, and later *d-wom* due to a vowel shift. In Old Sinitic Chinese, the word root evolved to be *gwjəm*, with a g-d replacement of the consonant, which is common in Tibetan-Burmo languages like Kanauri. Zhang Shuheng's (2019) article in Sino-Platonic Papers "Three Ancient Words for Bear" proposed that a *d-wam—g-wom* shift is possible due to the above patterns of evolution.

Cognates based on *dɣwjəm* are overwhelmingly common across ST languages, evident in basically every single ST language and this fact can be checked in the STEDT database. On the ground, *dɣwjəm* most likely refers to Asian Black Bear (*ursus tibetanus*) and this species is the most widely distributed in East Asia. Therefore, the fact *d-wam* as an etymon for bear is seen in most ST languages reveals that the Asian Black Bear had a very wide scope of geographical distribution across East Asia, from the Tibetan Plateau to Korea, but coastal East China has not seen fossils or existence of Asian Black Bear. Today, *d-wam* as an Asian Black Bear in Continental East Asia is present in southern China, Yunnan, western Sichuan/eastern Himalaya, Korea, and outer Manchuria. Since *d-wam* is a validly confirmed ST etymon, all of these above regions could have been a homeland for ST.

However, we cannot rule out other regions that historically had seen *d-wam* could have also been the ST homeland. The only problem was when did Asian Black Bear went extinct from where its fossils were uncovered. If it had gone extinct a long time (say, Pleistocene) before human settlement in East Asia in the Holocene, then those regions that only historically featured Asian Black Bear, e.g. middle Yellow River, cannot possibly be the homeland of ST because the first ST speakers could not have seen Asian Black Bear there. However, supporting literature documenting the fossils and the carbon-dated ages of Asian Black bears found in China is extremely obscure and lacking. The historical limit of Asian Black Bear's existence in China is largely based on literary tradition such as 山海经, 尚书, 楚辞, whose mythological depiction of animals was ambiguous at best. Thus, on the more conservative side, we should restrict our identification of the ST homeland to where the fossils, not the story documentation, of Asian Black Bear are found and recorded, such as western Sichuan, Shaanxi, and Yunnan. This region is where ST ancestors of different tribes all witnessed Asian Black Bear and called it *d-wam*.

1.2 *Brown Bear (ursus arctos)*

Other than the Sinitic descendant of proto-ST *d-wam* that is *gwjəm* (熊), Old Chinese had another term for a different species of bear and wrote it as 羆. This character often appeared together with 熊 as 熊羆 in the Book of Odes. Zhang Shuheng (2019) meticulously documented the historical mentioning and evolution of these two characters in Chinese literature. The consensus is that 羆 is a bear with stripes or spots, and is most likely associated with Eurasian Brown Bear (ursus arctos arctos).

The Old Chinese sound for 羆 is prayed, it is reconstructed to have the same root with *pran* "spots/stripes" (斑), and both are related to the proto-Tibetan-Burmo **pral*. Since both black bear and brown bear in East Asia have a white ring/stripe on their chest (up until maturity for brown bear), it is likely Old Chinese use *gwjam pray* 熊羆 together to either (1) denote both species as a common class, or, as suggested by Zhang Shuheng, (2) to use *pray* as an adjective to denote stripe-shaped bear.

The proto-TB root for stripes has a deeper origin as *p(w)ay* ⋉ *b(w)ay*, which means "encircled, ringed, striped". This etymon evolves to be *pai* in Mikhir to mean ring, *pài* in Jingpho to mean spotted, lo^{55} pi^{33} in Nuosu to mean ring the jewelry. In rGyalrong languages, *pri* or *pre* specifically means yellow (brown) bear, contrasting it with black bear (*tawom*) and carrying the same meaning as the Old Chinese prayer. The *rjɨj* in Tangut is a proven variant of the rGyalrongic *pri*.

Since several ST languages possess a common root for the meanings of stripe and brown bear, ancestors of the ST language probably lived close to the natural habitat of brown bear (ursus arctos). Whereas the Asian Black Bear has a widespread distribution in China, the The brown bear's habitat is quite restricted to the Tibetan Plateau and the Himalaya ranges. This, for the second time, strongly suggests the homeland of ST is in western Sichuan/eastern Himalaya.

1.3 *Panda Bear (Ailuropoda melanoleuca)*

Now, Eurasian bears of both the black and brown kinds are relatively well studied by comparative linguists. There is little controversy regarding what Old Chinese word each species corresponds to and what proto-ST root can be reconstructed for each, as seen above. One bear species that surprisingly went unnoticed by comparative linguists is the Giant Panda (Ailuropoda melanoleuca), whose habitat today is strictly western Sichuan. Giant Panda may have had a larger habitat limit in the past, but when was it and where is their habitat limit during the Holocene only? Do ST ancestors have a common etymon for Giant Panda too?

Giant Panda is sporadically called 貔 (pi) or 白豹 (bai bao, lit. white leopard) in *the Book of Documents* from the first century BCE, but the depiction of 貔 is very ambiguous and figurative. However, from the previous section, we know that *pway* is the proto-ST root for spot/stripe. If 貔 (pi) in ancient Chinese literature signified Giant Panda, then it would match well with the intended meaning of "striped animal" embedded on the etymon *pway*. As supporting evidence, I found that ɣɔ^{44} be^{33} in Lisu is the name for Panda. *ɣɔ* is a common Loloish cognate for bear, deriving from ɣɔm, and *be* is an adjective cognate deriving from proto-Tibetan-Burmo *p(w)ay* ⋉ *b(w)ay*.

Where Giant Panda was possibly distributed then? Although dental fossils of Giant Panda are said to be found as far north as Hebei, new studies excluded this northmost site because the size of the dental fossil was too large to be from Giant Panda. Additionally, the Zhoukoudian fossil was dated to the Pleistocene era, far too early for human interaction with the animal. About the claimed Giant Panda teeth fossil found at Lingjing, Henan, the only source identifiable came from a few Chinese websites without further citation of any original publication. The only academic paleoarchaeology study on this fossil record was a study by 李占扬 and 董为 (2007). This study explicitly stated that the fossil tooth belonged to an unspecified ursidae bear, likely a brown bear, without attributing it to Giant Panda. But, similar to the Zhoukoudian fossil, Lingjing fossil was then probably taken by nationalist propaganda to exaggerate the historical limit of the Giant Panda habitat. Correcting the exaggeration, the real distribution of all known fossils of Giant Panda is exclusively in southern China and Southeast Asia.

A few fossil sites are in the traditional area of Yangshao culture, but the main cultural center of Yangshao (i.e. Shanxi, northern Shaanxi, Hebei) does not contain any site of panda fossils. Furthermore, the descendant of Yangshao—Majiayao culture, does not contain any such site either. If proto-ST ancestors originated from Yangshao culture, they would not have any knowledge of the Giant Panda, let alone naming it with a word related to the common ST etyma *pway*.

On top of the overall distribution of all known fossils, a study published in MDPI-Genes (Sheng et al. 2018) found that panda diversity was rapidly lost during the Holocene, as a part of the Holocene extinction. This means many of the mid-Pleistocene sites of panda habitat should have already disappeared by the time humans appeared in East Asia, leaving the panda-active areas during the Neolithic era to be closer to where they are mostly active today, which is western and northern Sichuan.

2. Monkey.

STEDT has a proto-form as *m(y/r)uk*, corresponding to Old Chinese *mə-gˤ(r)o*, which then survives as Mandarin 猕猴 (mihou) and Cantonese 马骝 (marou). This root word is widely found in other ST languages, such as Lolo-Burmese *myuk*, Jirel Tibetan *moro*, and *yok* in various Himalaya languages.

An interesting evolutionary biology study (Li et al. 2020) showed that Asian macaques entered East Asia from Yunnan and southeastern Himalaya before reaching into Central Plain. The early humanoids should have started to see monkeys first in the Eastern Himalayas. Having a common cognate shared across so many ST languages for monkeys strongly suggests that the urheimat of ST is also within the same areal range. In addition, the lack of non-human primate fossils in northern China cautions against locating ST urheimat in northern China at all.

3. Birch and Pine.

Old Chinese 桦 *$ɢ^{wʕ}$ra* corresponded to Tibetan *gro.ga*. For pine, Tibetan t^{h}aŋ, Gyarongic tutho, Tangkhulic mə.tɐŋ are related to Sinitic 蒸tɕiŋ ← *təŋ.

Both birch and pine trees grow and thrive in cold climates. Its temperature tolerance is an upper limit of 30 Celsius. Today, its famous habitats in East Asia are Manchuria, Mongolia, Loess Plateau, and southwestern China. Central Plain is simply not where it grows. In addition, the temperature in the Neolithic era is 3–5 Celsius higher than today, leaving the loconym 豫 to the Central Plain of China due to its elephant produce. The summer temperature of modern Central Plain often reaches 38 Celsius, making its neolithic upper temperature, which would have ranged from 40 to 45, a killer of any healthy birch growth. Alternatively, Eastern Himalaya and its slope ranges extending from Qinghai to Sichuan would be the ideal habitat for birch forests. Heat also makes pine trees extremely susceptible to diseases, delisting lower YR and Central Plain from the ideal place for pine forests and making them unlikely a homeland to languages that share the etyma of birch and pine. The ecological needs of birch and pine do not, however, exclude Loess Plateau in northern China as a urheimat candidate.

4. Bamboo and Peppercorn.

Proto-ST *(g-)pwa* is constructed, from which Old Chinese 匪 (**pəjʔ*, meaning bamboo ware) derives. Bamboo is also an ST cognate according to Matisoff, only that he does not see it as pervasive enough. The common word in Middle and Modern Chinese–竹(tʂu1)—was originally a radical in the logograms to denote tall plants. This radical does not carry phonetic information and its sounding as "tʂu1" proves to be a loanword from Kra-Dai people in the south (c.f. *-*twuːk*).

While temperate flora like birch and pine do not prefer areas with high summer temperatures, subtropical flora such as bamboo also preclude further north in East Asia from the best Urheimat candidates. Thus, certain Yangshao sites such as Shimao, and Liao River Hongshan cultures would neither be the homeland of ST.

Another flora often associated with southwestern China is Sichuan peppercorn. Modern-day Sichuanese cuisine is famous for its heavy use of chili pepper (introduced) and peppercorn (indigenous). Jacques and Guedes (2023) found this spice was cultivated in Neolithic times in Sichuan and its name pervasively exists in many ST languages. Peppercorn fossil was first found in Liangzhu culture in 6–5 kya BCE, but this location is isolated. Then it was found in western Sichuan in 3400–2900 BCE. Its appearance was much later in northern China around 1400 BCE. Sichuan peppercorn has a common ST etymon *S.tew: such as *tsjew* in Middle and Modern Chinese; *ço* in Bodic; *tɕapʂə* in Achang; *rtsav* in Lavrung; *tɕ^{h}ap* in Deng. This phenomenon suggests, whoever the proto-ST people were, they must have inhabited a fertile region favorable to the growth of Sichuan peppercorn.

5. Fog.

Mway is both fog and cloud in Tibeto-Burman. For proto-ST, the cognate for fog is *mruk*, which is the Old Chinese *kə.mok* and *mi̯ug* (雺, or 霿). Corresponding pervasively with Baic *mu*^{21}*ko*, Nuosu *mu*^{33} *hɔ*^{55}, Gyalrong *ʐdo mə*, Tani *doŋ muk*, Tibetan *rmuk.*

Ding and Dong (2023) have found an interesting phenomenon that ST people living on higher altitudes tend to not distinguish cloud from fog in their language, due to the topologically identical position of both meteorological phenomena. The proto *mway* refers to both cloud and fog interchangeably. This is the same case for Old Chinese. The Old Chinese word sharing the common etyma with other Tibeto-Burman languages is *kə.mok* and *mi̯ug* (雾, 霿), they predicate "wet air from ground" (in 尔雅) in the case of 雾 or "air from the sky" (in 诗经-终风). Another term without a proto-ST root for cloud in Old Chinese is 雲(-*gwun), but unlike its usage today, this word means "wet air from mountain and river" (in 说文解字), effectively interchangeable with fog. Overall, the existence of a co-lexified word cloud/fog in ST suggests locating its urheimat at somewhere with higher altitude. Again, the Eastern Himalaya appears to be a more likely place over northern China because the latter either lacked the high altitude (Central Plain) or high humidity (Loess Plateau) required to develop cloud/fog.

Conclusion

In this chapter, I have reviewed relevant paleo-archaeological, genetic, historical, and linguistic evidence in support of the argument that the Southwest Silk Road that connects East Asia and Western Eurasia through Bangladesh, and northeastern India was of principal importance in the making of the Chinese civilization. The Southwest Silk Road had its initial shape and boosted commercial and intercultural exchanges since modern humans (*homo sapiens)* first entered East Asia through Bangladesh and northeastern India. Modern genetic analyses revealed the migration routes of three haplogroups that dominated the Y-chromosome haplogroup composition in modern East Asians (O, N, C, and to a lesser extent, D) overlapped Southwest Silk Road. Haplogroup O-M134 diverged from others, including O-M119 and O-M95, and took the road of Southwest Silk Road northbound to become the ancestors of proto-Sino-Tibetan speakers. Modern genetic studies also showed that this departure region that separated O-M134 and other O haplogroup subclades was likely modern-day Yunnan and Burma. Before the great divergence of haplogroup NO, Bangladesh was probably the last station in which the undifferentiated NO haplogroup members remained a single clade.

I also demonstrated an overwhelming amount of paleo-linguistic evidence in support of the unique importance of the Southwest Silk Road, especially its middle range covering Sichuan and Yunnan, in the origin story of the Sino-Tibetan language family and its continuing contribution to the Chinese civilizations to the east in the Central Plain of China. I first questioned the northern origin hypothesis which placed the homeland of the Sino-Tibetan family in the middle Yellow River and even in Central Plain. Following that, I argued that the early Sinitic speakers were a group of highland pastoralists who lived in the northern range of the Southwest

Silk Road, namely western Sichuan/eastern Himalaya. Their occupation of this vital route facilitated the exchange of advanced metallurgical and agricultural technology from Indo-Iranian states in the western range of the Silk Road, and finally led to the victorious conquest of the Sinitic-speaking Zhou people over Tungustic or Koreanic Shang ruling class in eastern China. The common cognates widely retained in most Sino-Tibetan languages indicate that western Sichuan/eastern Himalaya was the most likely natural environment for the signified objects of these cognates to exist. Sitting at the western range of the Southwest Silk Road, Bangladesh was an undeniably significant source that contributed to the growth of proto-Sino-Tibetan populations, and ultimately, the appearance of Chinese civilization.

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