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Urbanism in Prehistoric China as a Driving Force in Technology Hybridization

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Abstract: *Background*: Hominids used stone tools for hundreds of thousands of years without exhibiting significant technological progress. The latter first occurred after the end of the last ice age, above all with the introduction of agriculture. At that time, agrarian societies emerged with production techniques, including ceramic technology, basketry, weaving, and cordage, that individuals could master and for which the raw materials could be obtained through subsistence farming. The question arises as to the process by which early societies – in this case in China – were able to advance to a higher level of technology. The working hypothesis is that this was made possible by the hybridization of technologies in urban centers. The exchange among specialized artisans led to cross-fertilization, which facilitated the development of new techniques. *Objective*: This study first discusses some prominent earlier models of thought on the development of urbanism. It then attempts to apply the concept of technology hybridization to the development of various technologies in ancient China. In particular, topics such as hydraulic engineering, bronze metallurgy, jade industry, and scribal art are discussed. *Method*: The approach of comparative archaeology allows an understanding of the dynamics of long-term social and technological change in early Chinese societies. A transdisciplinary and diachronic approach is used to reveal long-term social variability and cross-cultural connections. *Results*: Urbanism is both an expression of technology and a catalyst of further technological progress. Technology hybridization, the convergence and cross-fertilization of technologies of different natures in urban centers, is ultimately an important driving force of cultural progress. *Conclusion*: Despite great differences in terms of geological substrate, topography, climate, and vegetation, early Chinese cultures shared several common characteristics. These included complex social organization, the existence of social classes, and an increasingly urban landscape with specialized workshops and sophisticated technologies such as copper and bronze metallurgy, jade carving, divination, and writing. This Chinese civilization did not simply emerge from the Central Plains and then absorb and assimilate the cultures of the surrounding regions. Rather, it is the result of a process in which various traditions, peoples, languages, and ethnicities were woven into a historically complex and multilayered fabric. Presumably, the early polities were independent cities or city-states that retained their political autonomy. Actual technical progress took place primarily where population density was high, i.e., in urban centers.

Keywords: Urbanism, Technology, Early China, Hybridization, Hydraulic Engineering, Bronze Age, Jade, Writing

1. Introduction

For over two million years, hominids used stone tools of a similar type and shape, without exhibiting any significant technological progress. Then, after the end of the last ice age, something occurred in terms of cultural development to spark apparently ever more rapid technological progress. Even before the introduction of agriculture, monumental sites such as Göbekli Tepe (9500 and 8000 BC) in southeastern Anatolia were erected [20]. The special characteristics of these megalithic sites included the temporary assembly of large numbers (>500) of otherwise nomadic people in a confined space and their desire to establish a permanent ceremonial center. These characteristics have turned out to have accompanied technological development ever since.

The agrarian societies that subsequently emerged were characterized by durability on the one hand and slow technological progress on the other. In addition to the domestication of plants and animals, they developed ceramics technology as well as cordage, basketry, and

weaving. Subsistence agriculture offered relative protection from the dangers of political and cultural disruption, but little opportunity for technological progress beyond what could be achieved by individual craftsmen. Actual technological progress occurred mainly where population density was high, in other words in urban centers. It is argued here that urbanization, beyond being an expression of technology, is essentially a catalyst of technological progress. The driving force of this advancement is hybridization, i.e., the coming-together and cross-fertilization of technologies of different types. This essay discusses some prominent earlier ideas about the development of urbanism and then attempts to apply the idea of technology hybridization to the development of different technologies in ancient China.

2. Models of Thought

Conducting archaeological inquiries to determine the interrelations between technological progress and cultural development requires some defining of terms. Archaeology is understood here as the systematic study of material remains to reconstruct past human activities, such as diet, demography, social organization, ritual, technology, and subsistence patterns, as well as the evolution of these achievements. The term culture refers to a set of common characteristics found in a defined time frame in a particular region. Culture is thus not synonymous with an identifiable ethnic, linguistic or political identity. It denotes the common ways in which people at the time shared, for example, a comparable iconography or had the same technological means. Technology is defined here as a system of practices that combines abstract and practical knowledge about the transformation of material resources, encompassing social and political relations as well as cultural attributes [8].

In his 1865 book *Prehistoric Times, as Illustrated by Ancient Remains and the Manners and Customs of Modern Savages*, John Lubbock introduced the terms Paleolithic and Neolithic defining the Paleolithic as the epoch of chipped stone and the Neolithic as an age characterized by the use of polished stone axes [16]. He also associated technological progress with moral progress in the sense of an evolution towards a superior state of being. This inspired other scholars to elaborate on the unilinear processes of cultural evolution. They included Lewis Henry Morgan, who in his 1877 book *Ancient Society* [18] presented a view that informed Friedrich Engels and Karl Marx, thereby establishing a taxonomic framework for understanding social organization in ancient China that was adopted by thinkers including Morgan, Marx, and later Mao Zedong. The critical evaluation of this evolutionary approach in the twentieth century led to the works of Morton Fried and Elman Service, who proposed models to explain why people in the past gave up the autonomy of the hunter-gather subsistence-style community that was essentially without stable ranking and stratification, either because they saw a benefit or because they were forced to [9, 21].

Numerous attempts have been made to capture the essential characteristics of urban centers. Among them, the definition proposed by the Marxist archaeologist V. Gordon Childe is particularly prominent [3]. According to this definition, a city is characterized by its size and population density as well as by the presence of monumental public buildings. The urban population is divided into classes with craft specializations that are pursued full-time. Craftsmen and artists produce surplus commodities and valuable goods [8]. Long-distance trade in these items in combination with a knowledge of writing and record-keeping yields an accumulation of wealth, which in turn provides tasks for administrators and priests; among other things, the latter had to make predictions and reinforce the divine justification of aristocratic rule.

Paul Wheatley's epochal monograph *The Pivot of the Four Quarters: A Preliminary Enquiry into the Origins and Character of the Ancient Chinese City* illuminates additional aspects of early urbanism [23]. Urban societies could only develop where intensive agriculture was possible. Consequently, a favorable climate, fertile arable land, and irrigated agriculture were indispensable to high population density and thus great productivity. Wheatley examined the six regions of the world in which people independently invented cities: northern China, Mesopotamia, Egypt, the Indus Valley, Peru, and Mexico. In these six areas, the first important institution was always the ceremonial center. This was not just a religious place, but also a technological marvel and an expression of economic wealth, which in turn was under divine and military protection. The ceremonial centers served as an integrating mechanism of space, leading to the effective organization that characterizes urbanism. The religious component forced people to accept and internalize the fact that they did not have equal access to the gods and goods. Only the rulers were in direct contact with deities. With divine support they acted as the leaders of the armed forces. Wheatley wrote:

"Urbanism is used to denote that particular set of functionally integrated institutions which were first devised some 5,000 years ago to mediate the transformation of relatively egalitarian, ascriptive, kin-structured groups into socially stratified, politically organized, territorially based societies, and which have since progressively extended both the scope and autonomy of their institutional spheres, so that today they mold the actions and aspirations of vastly the larger proportion of mankind."

According to Wheatley, cities drive cultural development by bringing together different technologies and thus enabling cross-fertilization [23]. Wheatley's reflections echo the thinking of Mircea Eliade, who emphasized the cosmic order that is reflected on earth. Urban organization expresses this cosmovision by manifesting, for example, astronomical parameters such as cardinal directions. It thus displays "… an intimate parallelism between the mathematically expressible régimes of the heavens and the biologically determined rhythms of life on earth (as manifested conjointly in the succession of the seasons and the annual cycles of plant regeneration)" [23]. Religion, according to Wheatley, serves

as the unifying element of urban and thus cultural evolution. Religion provides order, an order based on and reinforced by celestial cyclicities. This order is reflected, for instance, in the social classes and groups of craftsmen producing new technologies, which in turn created surpluses. According to Wheatley, cities are places of surplus and rulers are persons of surplus.

The economist W. Brian Arthur gives an overview of the potential of technological development in his lucid book *The Nature of Technology: What It Is and How It Evolves* [1]. In his definition of technology, he refers to a collection of phenomena that are captured and harnessed. "The phenomenon is harnessed, seized, secured, used, employed, taken advantage of, or exploited for some purpose" [1]. In terms of stone tools, the longest-used technology in human history, the phenomenon is the hardness and durability of the stone and the fact that it can be given a sharp edge when shaped manually with another stone. A hand axe produced in this way is a tool that can be employed to cut down trees, the wood of which can then be used, for example, as fuel for stoves or for building houses or ships. Consequently, leveraging a specific technology, namely the production of stone tools, leads to the development of other and novel technologies such as pyrotechnics, architecture, and shipbuilding. As the number of available technologies increases, so do the possible combinations. With five technologies there are 26 possible combinations; with ten initial technologies there are already 1,013 possible combinations [1]. This effect is referred to here as technology hybridization.

In addressing the question of what urbanization stands for, it makes sense to disregard specific terms that might define a city. According to Flad [8], what all early cities around the globe had in common was that they enabled the accomplishment of economic and ritual tasks through the size of their population, the differentiation of their societies, the centrality of their geographic location, and – perhaps as a result of the former – their level of technological achievement. What matters most, then, is how a society is organized.

The densification of population in a confined space inevitably promotes the emergence of hierarchies and thus social stratification. This goes hand in hand with increasing specialization in terms of crafts, but also with an inevitable increase in the hybridization of technologies – in other words, an exchange among engineers and craftsmen. Social stratification leads to a need to make status visible, which in turn creates demanding tasks for artisans. This is why particularly appealing and precious prestige objects are created in urban centers. Outstanding art presupposes wealth, and wealth is expressed, among other things, in the form of outstanding art. Urbanism is thus a technology in its own right, composed of many other technologies. It promotes and sustains technological development [8].

3. Rural Communities

Among the technologies already developed by hunter-gatherers is the production of ceramics. Archaeologists found ceramics in Xianrendong dating to 20,000 cal BP, in Yuchanyan from 17,000 cal BP, and in Miaoyan from 15,600 cal BP. In Japan there was also a developed ceramic tradition among nomadic hunter-gatherers. The use of pots suggests that food was cooked at that time. Since vessels had to be carried when moving, pottery was rarely used by nomadic tribes and became truly abundant only with the sedentism that came with the domestication of plants and animals. The dominant technology of village communities is, of course, agriculture – that is, the systematic production of domesticated plants and the corresponding tillage of the soil. Owing to different climatic conditions, millet was initially the predominant crop in northern China, while rice was the main staple food in central and southern China. Excavations of the Hemudu culture (c. 5500–3300 BC) yielded about twenty tons of rice husks, including cooked rice, from the fifth millennium BC [10, 22]. Wild rice has been found at Yuchanyan, Diaotonghuan, and especially Shangshan along the Yangzi River, dating to 15,000–9000 cal BP; this rice became domesticated to some extent by about 8000 BC [14]. The use of wild rice appears to have continued; it therefore took millennia for rice and other plant species to exhibit all the characteristics of domestication [22].

Traditions related to the manufacture of baskets and textiles seem to go back as far as the manufacture of ceramics, although artifacts are seldom preserved because they are made of organic material and therefore tend to decay. The typical technologies of village communities are thus agriculture and animal husbandry, as well as pottery, basketry, and textile production – all production techniques used by individual people for which the raw materials can be generated through subsistence cultivation, and which can be passed down from generation to generation within the family.

4. Hydraulic Engineering

A co-evolution toward more complex societies with incipient urbanism is found in China in the Middle Neolithic cultures (5500–3500 BC), including the Yangshao culture (5000–3000 BC).

The earliest evidence of increasing social complexity comes from burial practices. In Xishupo (c. 4500 BC), some deceased persons were treated individually. At the same time, segmented settlement organization indicates incipient social complexity. Population then densified further in tightly defined and ecologically favored areas in the Late Neolithic/Chalcolithic cultures (3500–2000 BC), thereby creating clearly identifiable urban clusters and becoming fully expressed in the Longshan culture (c. 2600–2500 BC). In addition to the arts and crafts, which continued to evolve rapidly, social development was also expressed in the form of intricate politico-religious ideologies. The grave goods of the leading class became opulent, and feasts and shamanism took hold. All these cultural achievements only make sense within a condensed, urbanized society. At the same time, urbanism enables the emergence of other achievements that require

high population density. These include, for example, the administration that becomes necessary when many people live closely together or trade with each other over certain distances. It also includes, in particular, hydraulic engineering and the construction of fortifications, which requires knowledge of physics as well as systematic planning and implementation in a hierarchical society with clear command structures, as well as logistics for the supply of materials and food for the workers (Demattè 1999, 119). The use of pyro-scapulimancy in divination, the production of jade objects for ritual purposes, and metallurgy (because of the complex supply and production chains it involves) are also typical results of the hybridization of technologies [4].

Hydraulic engineering is a technology that is only conceivable in conjunction with urbanism. One of the oldest examples of large-scale water management in the world is from the Liangzhu culture (3300–2300 BC) in the Yangtze River Delta [13]. The ancient city of Liangzhu had an estimated size of about 300 hectares. Sophisticated water management technologies were built up early on to cope with the potentially catastrophic floods that resulted from frequent fluctuations in rainfall. A total of 30 kilometers of river arms and canals surrounded the Neolithic city center of Liangzhu. A prominent feature of the hydraulic system was a dam 5 kilometers long and 20 meters wide, which consisted of individual "sandbags" made of reed sheaths and seeds as fill. Upstream, 25 meters above sea level, a dam complex helped regulate the discharge of a large lake. Geographically lower, at 15 meters above sea level, another dam complex on the alluvial plain helped regulate flooding. In this way, the city center was protected from both flooding from the river and salt water from the sea [13]. At the same time, the system ensured that rainwater could be stored for irrigation. The date of construction corresponds to that of the earliest hydraulic systems in Mesopotamia and Egypt.

Given that the late Neolithic population of the urban center was 23,000 to 34,000 people, and considering the effort involved in designing and constructing the hydraulic structure, a highly developed social community must have prevailed at the time. Constructing canals and dams requires knowledge of the laws of nature, systematic planning, and structured implementation over a long period of time by hundreds or thousands of workers. Hydraulic engineering projects are therefore only possible in the vicinity of urban centers, and indeed occur around the globe together with the earliest cities. These measurements contributed to the expansion of food production systems and thus also accelerated political development [13]. In order to coordinate the supply chains and workers, a strictly hierarchical division of contingents must have been in place. Hence, in addition to urban planners, a central administration was required [13]. Such technological achievements are thus both an expression and a result of urbanization, in which a functioning territorial state system becomes apparent. Ancient hydraulic engineering proves to be a core product of increasing social, political, and economic complexity. A state society may have existed in China long before the Shang dynasty, but nowhere is it more clearly expressed than in Liangzhu [19].

Similar logistics to hydraulic engineering were required in the use of rammed earth (*hangtu*) in the construction of city walls and platforms for public buildings by various Longshan cultures (after c. 2600 BC). These structures, too, can only be implemented in an urban environment and are thus a sign of technological progress as an expression of incipient urbanism.

5. Five Thousand Years' Use of Jade

The Neolithic Liangzhu culture, with its major sites at Fanshan, Yaoshan, Yuhang, Sidun, Mojiaoshan, and Huiguanshan, brought not only one of the earliest water management systems, but also the rise of the jade industry. Graves in cemeteries dating to 3400–2000 BC contained over 5,000 carefully worked jade artifacts, although the material used is actually nephrite, not jadeite [22]. The highly developed jade industry of the time reflects the craft specialization and technological sophistication that can be found only in urban centers. To produce the objects, a very hard raw material had to be worked, requiring the skills of specialized craftsmen and many hours of labor. In addition to flint tools, advanced technologies and new materials such as sharks' teeth were probably used in the processing. Many objects are flat round disks with a hole in the center (*bi*). The production of the central hole, up to 25 centimeters long, is a challenging task even with modern technology [22]. Other objects combine a square exterior with a hollow cylindrical interior (*cong*). Some of these forms are decorated with a human-like figure and a mysterious animal; the two reliefs together form a stylized, monstrous face. A high degree of organization and coordination was crucial to manage the procurement of raw materials from locally available quarries and its distribution to the workshops. The objects probably served ritual purposes. They are both a product and an expression of a hierarchically structured society, and are considered gifts from the king.

6. Manufacture of Bronze Objects

Metallurgy is a complex production process that requires sophisticated technological knowledge and a reliable supply chain. The technology of bronze production begins with the search for and mining of ores containing copper, tin, and lead, and continues through preparation, smelting, alloy mixing, mold making, casting, and finishing. This technology is first documented in northwestern China during the late Neolithic period. In Linjia in Gansu Province, a bronze knife made of tin alloy (c. 2900–2700 BC) was found during excavations. It is considered to be the earliest currently known bronze artifact in China [22]. Most scholars now believe that metallurgy was introduced to northwest China via the Eurasian steppe, as copper and bronze objects from these two regions share many typological similarities [17]. In West Asia, the eponymous Bronze Age began around 3000 BC. Soon afterwards, compact objects made with simple forms were

likely traded over long distances. In northwest China, archaeologists have found knives, axes, spear points, and earrings. Other Late Neolithic copper alloy artifacts attest to the emergence of the new technology in this particular region. In some cases, the finds were made in simple graves, suggesting that bronze objects were not originally prestige items.

It is highly unlikely that knowledge of these production processes spread over long distances, since craftsmen as a rule kept their knowledge secret, and passing it on over long distances would have required translations into many different languages. More probably, the first imported bronze objects represented a "proof of concept" that encouraged local craftsmen to explore new production techniques. Using reverse engineering, these artisans may have then attempted to generate similar objects in a process that was probably based on trial and error. In other words, technology transfer has both an element of diffusion and an element of local development. It also involves both the exchange of experience between craftsmen with different specializations, and a trial-and-error process of tinkering with alloys and manufacturing techniques in the privacy of one's own workshop. It is this local development in particular that characterizes Chinese handicrafts. The finds at Erlitou (c. 1900–1500 BC), where a total of 117 bronze artifacts were discovered, already testify to highly specialized craft production in separate workshops. The bronze foundry was located only 300 meters from the palace district, indicating the great importance of this industry. Obviously, the palace controlled the processing of metals. Of the more than 100 metal objects found at Erlitou, most contain varying levels of copper, tin, and lead to produce different colors [22]. A real technological breakthrough, first demonstrated at Erlitou, was the production of molds from several elements for casting complex bronze vessels. Seventeen such bronze vessels are currently known from Erlitou. Although these vessels are small and poorly decorated compared with those from later periods, they are considered the pinnacle of craftsmanship at the time [22].

The Shang period (c. 1600–1050 BC) saw a dramatic increase in craft production, particularly bronze work. Bronze is, in fact, the craft for which the Shang dynasty is best known. At this time, workshops were always located in political centers, suggesting that the palace exercised direct control over this craft [22] and emphasizing the interdependence between political leadership and sophisticated artisanship that is only feasible in urban centers. Piece-mold casting technology, already developed in the Erlitou period, then reached a new level of sophistication [22]. To achieve this, extensive knowledge of clay mixing and processing must have been acquired [11]. Lead isotope studies show that there were no extensive metal imports in China at this time [15]. The entire production process took place within the country's own borders. Over time, operations were even relocated to be closer to the mines.

From Sanxingdui in Guanghan, Sichuan, come anthropomorphic bronze sculptures with a very unique art form and production technique. They were found together with a large number of valuable objects made of stone, jade, bronze, gold, ivory, pottery, and shells in two sacrificial trenches from around 1200 BC. The city flourished c. 1700–1150 BC and was surrounded by massive walls enclosing an area of over 3 square kilometers. The population is estimated to have been less than 10,000.

At Sanxingdu, the bronze casting techniques may have been derived from external origins, but the technology was then developed into a coherent system that was local and thus unique [22]. The scale of Shang and early Zhou bronze production, considered the largest industry in the world at the time, required the delivery of large quantities of copper, tin, and lead. The basin of the middle and lower Yangtze River offered rich ore deposits for this purpose. Tin, on the other hand, had to be transported over longer distances from southern China. The objects at Sanxingdui demonstrate how actively the Sichuan basin was involved in such effective long-distance relationships [7]. The less complex societies in the immediate vicinity may indeed have been under the control of the urban center. The more distant sites, on the other hand, were certainly not controlled by these urban centers.

Sanxingdui was a central hub in the Sichuan valley and a focal point of the densely populated region with its closely interconnected settlements. It was unquestionably the center of collective labor that is characteristic of urbanization. The production of exquisite bronze and ivory artifacts requires a well-organized and integrated system of specialized artisans. It also entails the use of gold, which was hardly used in the Central Plains at that time. Agriculture also differed, as rice rather than millet was grown in Sichuan. The Sanxingdui culture is thus a prime example of the effect of technology hybridization in urban centers, creating entirely original new forms and production techniques.

7. The Art of Writing

The knowledge of writing is another cultural achievement that makes most sense in the context of dense habitation, sophisticated social organization, differentiated religious customs, and long-distance trade. A single person may well develop a writing system, but it will be useless. Writing is a standard that requires systematic dissemination and transmission to other individuals through curricula in schools. The actual origins of Chinese writing are not really known. Based on the currently available evidence, the Chinese writing system appears to have emerged entirely on its own [2], with no indications that the script was imported into China from elsewhere. Ancient Chinese textual sources claim that a certain Cangjie, who lived during the time of the legendary Yellow Emperor (c. 3000 BC), invented Chinese writing [12]. It is quite possible that the first Chinese writing originated on perishable materials such as wood, bamboo or silk – materials that have perished [5].

The first carved characters on Chinese bones and turtle shells date to over 8,000 years ago. Researchers have

distinguished eleven different characters carved on organic objects dating from 6600–6200 BC [12], but their meaning and interpretation is controversial. After 3000 BC, single characters applied with a brush to the underside of pottery appear more frequently. More than 50 such symbols have been described from the Longshan era (3000–2000 BC) [12]. However, the signs from this early period are not understood as writing in the strict sense, although some researchers see them as the beginnings from which the later writing system may have developed (Li et al. 2003, 31). The extent to which these early symbols might be related to the Chinese writing system that emerged in the late Shang dynasty is controversial [2]. Although the characters bear a formal resemblance to Shang-period characters, there is no evidence that they had the same meaning as the later Shang (Yinxu) characters [12].

The first clearly documented evidence of Chinese language with complete sentences are the oracle bone inscriptions from Anyang in modern Henan, dated to the late Shang period (c. 1200 BC) [2]. The oracle bones were shoulder blades from cattle or plastrons from turtles that were scraped and cleaned and then carved with characters for the purpose of divination. The diviners would carve the person's question into the bone and then heat it with a hot poker or place it near a fire. When the bone cracked, the lines created were interpreted as the answer to the person's question. Inscriptions found at Yinxu (c. 1250–1046 BC) show that this pyromancy was closely associated with the Shang court and that the king served as the chief diviner during this period [6]. However, Shang oracle bone divination is thought to represent the continuation of a tradition that was well established throughout northern China during the Late Neolithic [22]. Accordingly, a language related to modern Chinese was already spoken in this region. The logographic script used can also be seen as a precursor of the Chinese writing system still in use today [5].

The knowledge of writing thus results from the hybridization of various technological and social achievements, including a class society with an aristocratic rulership and its servant priesthood. Conversely, this achievement serves to consolidate and expand the social differentiation once it has been acquired, for example, through divination, in the form of bookkeeping in trade and in the control of tax revenues.

8. Conclusion

Some archaeologists have applied the world system model developed by Immanuel Wallerstein to assert Shang hegemony over China's other territorial states, which can be partially supported by evidence of a tribute system. According to this model, in the centers a technologically advanced society was able to exploit the less developed areas through unequal trade relations [22]. Archaeologists have adopted a simplified form of this model in attempting to describe interregional polities in which the periphery provided cheap labor and raw materials, while the center managed to produce valuable objects with the help of technological and economic expertise.

The earliest polities, however, were presumably independent cities or city-states that maintained their political autonomy [2]. The geographic arrangement of the fortified cities indeed suggests rival communities that interacted in key areas of China in an increasingly competitive environment. Long-distance trade for the delivery of raw materials and the shipment of finished goods flourished along an established network of communication routes that likely utilized waterways.

The hypothesis according to which dense urban settlements lead to an agglomeration and hybridization of technologies [8] is confirmed by the observations made here. Several common features are found in early Chinese societies, despite great differences in geological substrate, topography, climate, and vegetation. Among them are complex social organization, the presence of social classes, and an increasingly urban landscape with specialized workshops and sophisticated technologies such as copper and bronze metallurgy, jade carving, divination, and writing. The established distinctions of different economies between agrarian communities and urban centers, with a chance of technology hybridization in the latter – as discussed here – suffice to explain the political organization which relied on subsistence agriculture in the countryside providing stability and technological development in the city, thus affording cultural progress.

Chinese civilization did not simply emerge from the Central Plains and then absorb and assimilate the cultures of the surrounding regions. Rather, it was the result of a process in which various traditions, peoples, languages, and ethnicities were woven into a historically complex and multilayered fabric.

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