The Presidential Address

The Chinese Civilization: A Search for the Roots of Its Longevity

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The longevity of Chinese civilization is generally conceded to be a unique phenomenon in world history; as such it has evoked explanations ranging from the plausible to the esoteric. A search for the roots of its longevity is now feasible, thanks to the massive archaeological and scientific data pouring out of China since 1949. A preliminary integration of such multifarious new data with rich archaic Chinese literary records has enabled me to reach the conclusion that the trait-complex of each of the major Chinese cultural elements—field agriculture, animal husbandry, pottery, metallurgy, script, language, religion including the system of divination, social and political thought—is marked at once by a regionally distinctive Sinitic character and by a pattern of centrifugal geographic spread from the southeastern portion of the loess highlands of North China. The detailed evidence and argument that the Chinese civilization, in spite of its later coalescence and articulation, was just as pristine as the Mesopotamian, have been presented in my recent book, The Cradle of the East: An Inquiry into the Indigenous Origins of Techniques and Ideas of Neolithic and Early Historic China, 5000–1000 B.C.1

In the course of my research I have uncovered three basic factors that may provide a fresh interpretation as to why the Chinese civilization is the only major civilization of ancient origin that is still distinctive and vital today.

First, there is China’s self-sustaining agriculture. Combined archaeological and scientific data indicates that a self-sustaining agricultural system made its debut around 5000 B.C. in the nuclear area of Yang-shao culture, which is the earliest full-fledged Neolithic culture so far discovered in China. The Yang-shao nuclear area embraced the Wei River basin in Shensi, southern Shansi, and western Honan. This self-sustaining agriculture was an outcome of the response of the Yang-shao proto-Chinese to a natural environment which was in some ways restrictive but in one peculiar way uniquely favorable. The environment was restrictive in terms of extremities of climate, light rainfall, relative scarcity of plant resources, and rather dissected landforms. The one most important endowment of this area, which on balance more than offsets its natural disadvantages, is the loess. With a sense of history rare among pioneering investigators of the loess, Raphael Pumpelly, an American geologist who led an archaeological expedition to Russian Turkestan in 1904, pointed out the important role played by the loess in the history of man, with special reference to the loess of China:

Its fertility seems inexhaustible, a quality it owes partly, as [Ferdinand von] Richthofen remarks, to its depth and texture, partly to the salts brought to the surface after rain by capillary attraction acting through tubular channels left after the decay of successive generations of the grass stems inclosed during its accumulation, and partly to the

1 The Chinese University of Hong Kong and the University of Chicago Press, 1975.

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increment of fresh dust that is still brought by winds from the interior. Its self-fertilizing ability is shown by the fact that the crops have been raised continuously, through several thousand years, on its immense areas in China, and practically without fertilizing additions. It is on these lands that dense populations accumulate and grow up to the limit of its great life-supporting capacity.  

Since the slash-and-burn system of the tropics is dictated primarily by the inability of the soil to restore its fertility without long fallow, and since the loess of China is famous for its self-fertilizing capacity, it is fairly obvious from the point of view of agronomy that the Yang-shao agricultural system was not slash-and-burn in the conventional sense and may be regarded as self-sustaining from its very inception.

As a precaution, before I undertook a reconstruction of Yang-shao agricultural practices, I had consulted Dr. Jack R. Harlan of the National Academy of Sciences and of the University of Illinois at Urbana, a leading authority on the history of crops in general and on the origins of wheat and barley in particular. Without first telling him anything about the fallow system recorded in Chou literature, I asked him what he would think, in the perspective of agronomy and comparative primitive agriculture, to have been Yang-shao agricultural practices. He said without hesitation that the Yang-shao practices would be different from those of the slash-and-burn system, which would require at least eight times as much land as was actually cultivated each year to make a long fallow feasible; that the Yang-shao farmers would probably need no more than three times as much land as was actually cultivated each year; that part of the land cultivated by Yang-shao farmers would require a two-year fallow; and that loess soil of superior moisture-holding capacity could grow Setaria millet consecutively without difficulty. His most important conclusion, hitherto little understood by archaeologists specializing on China, is that the crucial problem in the slash-and-burn system is fertility, while the crucial problem in Yang-shao agriculture is not fertility but moisture.

The Yang-shao system of short fallow which Dr. Harlan and I have reconstructed out of principles of agronomy accords almost exactly with the fallow system described in those parts of The Book of Documents and The Book of Odes datable to the beginnings of Chou times. The three key terms for agricultural land in these early Chou works are: tzu, b hsin, and yu. The character tzu consists of three components—the upper part is the radical for grass, the middle part is an archaic form of the character which means ‘to bring calamity to’ or ‘to kill,’ and the lower part means the field. From various ancient Chinese etymologists’ commentaries, we learn that tzu has two essential meanings: first, the process by which ‘grass residues are returned to the soil’ after the virgin sods have been turned, and, second, the first-year land that is not yet ready for planting. As a matter of fact, without prior experience in field agriculture, the first Yang-shao farmers almost certainly would have planted millet soon after the sods were broken up. It should not have taken them long to learn that the yield of the first year was meagre but the yields of the second and third years were much better. This is because during the first year the nitrogen in the soil is mostly consumed by the various microorganisms that are the main agent in decomposing plant residues. This is precisely the first meaning of tzu, a process by which grass residues are returned to the soil. By the second year, when the plant residues have already been decomposed, the various microorganisms, instead of continually tying up the nitrogen in the soil, release it to nourish the seed plants. This phenomenon of vastly different yields would naturally lead Yang-shao farmers to the

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formulation of the simple rule that freshly broken land be rested for a year and millet be grown from the second year onwards.

The term hsin means the land in its second year of preparedness, ready for planting. This word literally means "new," because it is the new land to be actually planted. The term yu means the well-treated land in its third year of preparedness, still good for planting. For types of loess soil which do not hold moisture too well, the land that had grown millet for two consecutive years had to be rested for a year or two because of the necessity of conserving moisture. This short three-year cycle is further confirmed by the principle of land allotment stated in the Chou-li, a comprehensive but somewhat idealized treatise on Chou institutions, the compilation of which does not seem to have been completed until the second century B.C.: "In case of the nonchanging land, each [peasant] household be allotted 100 mou; in case of the once-changing land, each household be allotted 200 mou; and in case of the twice-changing land, each household be allotted 300 mou." The science of agronomy and archaic literary records, therefore, act like the two halves of a tally stick in establishing the self-sustaining character of northern Chinese agriculture since Yang-shao times.

In retrospect, it was largely nature, more specifically the loess, that from the very beginning shaped the self-sustaining character of the northern Chinese agricultural system. But it was mainly because of human effort and ingenuity, exerted for more than two thousand years, that the agricultural system of monsoon China south of the Huai River has become self-perpetuating and highly productive. Whereas "progressive changes in soil salinity and sedimentation contributed to the breakup of past civilizations" in Mesopotamia, and whereas "the destruction of the local ecological patterns and the consequent failure of food resources" contributed to the decline and fall of the ancient Harappan civilization in the Indus valley, even today Chinese agriculture still manages to support nearly a quarter of humanity from a cultivated area amounting to only some seventy-five percent that of the United States. By virtue of its ability to endure, Chinese agriculture has contributed significantly to making the Chinese civilization the most enduring in the annals of man.

Second, there is the overriding concern of the Chinese for biological and social perpetuation. To use an anthropological expression, this preoccupation with biological and social perpetuation may well be regarded as a focal value in Chinese culture, which can now be traced back to the beginnings of Chinese religion in prehistoric times. The discovery since 1949 of ceramic and stone phallic symbols in a number of regional prehistoric cultures, the etymology of the character for ancestor, tsu, itself a phallic symbol, and detailed cumulative knowledge about Shang religion indicate that the center of gravity of earliest Chinese religion was ancestor worship. There were three prerequisites to ancestor worship. First, a kinship group had to be able to perpetuate, if not constantly to multiply, itself biologically, for without descendants there could be no ancestor worship. Second, since in Shang-Chou times ancestor worship was a cult mainly for the high ruling class, it was an absolute requisite for descendants of royal and noble

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3 Chou-li chu-shu (Ssu-pu pei-yao ed.), ch. 10, p. 9a.
lineages to maintain their status, if not further to improve it. This was because the political hierarchy determined the ritualistic hierarchy of ancestor worship. Third, since the sacrificial rituals had to be performed by the legal heir, and since that heir had to be a male, ancestor worship required therefore the breeding of sons and grandsons. This earnest desire for male heirs was amply reflected in early Chou literature and bronze inscriptions.

It is impossible fully to discuss in this paper the metamorphosis of ancestor worship since Confucius (551-479 B.C.), but two important changes should be briefly explained. First, Confucius seems, on the surface, to have weakened ancestor worship as a religion. His skeptical and agnostic attitude toward the afterlife and spirits is summarized in the following terse statements. "He sacrificed [to the ancestors]," he said, "as if they were present." On another occasion, Confucius said: "To devote oneself earnestly to one's duty to humanity, and while respecting the spirits to keep away from them, may be called wisdom." The subsequent rationalization of sacrificial rites by Confucian thinkers of the third and second centuries B.C. has often been interpreted as a necessary and useful expression of man's affectionate longing for and gratitude to the dear departed, hence as a catharsis of emotions. But the social value of ancestor worship was actually more crucial to the self-conscious Confucianist than was its personal, psychological value. Hsiun K'uang, commonly known as Hsiun Tzu, the great synthesist of Confucian and Legalist thought of the third century B.C., offered a more balanced view on sacrificial rites:

Sacrificial rites are the expressions of man's will, emotion, remembrance and love. . . .
With sorrow and reverence, one serves the dead as he serves the living. . . . What is served has neither appearance nor shadow, and yet the social order is completed in this way.

While diluting the original religious tenets of Shang-Chou ancestor worship, Hsiun Tzu and the Confucianists thus made such worship all the more viable by their full realization of its social purpose.

Second, with the passing of feudalism in 221 B.C., ancestor worship was no longer a cult mainly for the ruling aristocracy; it gradually permeated all social strata. The long historical process of universalization of this ancient focal value—the emphasis on the continuity of patrilineal descent—was facilitated by the efforts of the elite from Later Han times onwards to strengthen family and kinship ties, and by the efforts of both the elite and commoners since A.D. 1050 to organize themselves into common descent groups. Consequently, the famous saying of Mencius—of all unfilial deeds none is more serious than the failure to produce male descendants—has exerted abiding influence over high and low alike, even though it seems to have referred originally only to the aristocracy. In fact, what was perpetuated was a line of descent, which could be continued by the adoption of a son when a man biologically failed to produce one. It is therefore social perpetuation, achieved biologically whenever possible. While man's desire to reproduce his own species is certainly universal, never in world history has a large nation been more subjected to such powerful and sustained pressures for biological and social perpetuation than the Chinese.

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6 Both sayings are in The Analects; these versions are taken from Fung Yu-lan, A History of Chinese Philosophy, I, trans. by Derk Bodde (Peiping, 1937), p. 58.

7 Hsiun-tzu (Ssu-pu pei-yao ed.), ch. 13, pp. 14b-16a.

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The present Chinese government has succeeded remarkably well in transforming much of traditionally family-oriented values into nation-oriented values. Yet there is little in its repeated public exhortations that is not in keeping with a long series of didactic sayings to the effect that the individual, the family, and the nation should work hard, live frugally, and make sacrifices, if necessary, for posterity. Throughout the millennia, therefore, except for this enlargement of scale from the family to the nation as a collective social entity, there has been no weakening of the overriding concern of the Chinese for posterity, which offers a sharp contrast to the current Western way of "living on credit." In making a long-range historical perspective, the uniquely Chinese preoccupation with biological and social perpetuation—which originated from the prehistoric and early historic cult of ancestor worship and which in the course of time became the most primary of all human considerations—has contributed probably as much to the endurance of Chinese civilization as China’s self-sustaining agriculture.

Third, if a civilization is to endure, it must be able to maintain its individuality; and, in retrospect, it is the Chinese script that probably has been more instrumental than anything else in preserving the distinctive identity of Chinese civilization. The peculiar characteristics of the Chinese script and its important function during periods of recorded history are so well known as to require no elaboration. What is needed here is to trace its very beginnings back to the early half of the fifth millennium B.C. and to assess briefly the role it had played in expanding the Sinitic world from its original nucleus in the southeastern portion of the loess highlands before samples of Chinese writing in the form of oracle inscriptions became abundant from 1300 B.C. onwards.

One of the most important post-1949 archaeological finds was the discovery in the mid-1950s of 113 pieces of potsherds at the famous Yang-shao cultural site of Pan-p’o near Sian which bore 22 incised word-signs. This custom of incising word-signs on pottery was not confined to the Pan-p’o village in Yang-shao times, for potsherds bearing similar word-signs, sometimes in slightly variant forms, have been discovered from other Yang-shao sites at Ling-t’ai, Ch’ang-an county, and at Hsin-yeh-ts’un, Ho-yang county, both in Shensi. Since Hsin-yeh-ts’un is nearly 150 kilometers northeast of Pan-p’o, there must have been various groups of proto-Chinese in the Wei River basin who, shortly after 5000 B.C., had reached a stage of cultural development sufficiently advanced as to feel the need for creating a simple script.

Unlike the Sumerian cuneiform, which was deciphered through parallel Akkadian and Old Persian texts, and the Egyptian hieroglyphics, which were deciphered through parallel Greek texts, the Pan-p’o word-signs can only be identified through a few samples of pre-Shang and vast amount of Shang script. This is because the linguistic and cultural isolation of prehistoric and early historic Chinese was so great that even as late as the thirteenth century B.C., a time when abundant Shang oracle texts indicate that the Chinese script had already reached a fairly mature stage, the Chinese were still the only literate people east of the Urals and the Indus valley.

The scarcity of pre-1300 B.C. samples of Chinese writing can be explained by the prolonged lack of suitable and nonperishable writing materials. In the light of the history of other ancient civilizations of the Old World, it is most striking that the pre-Shang Chinese seem never to have learned to use clay as a writing material. It was natural for

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the Sumerians to make clay into tablets in order to keep records with a simple wooden
stylus, because clay is a raw material of virtually unlimited supply and is easy to handle.
This method was borrowed all over the Near East for more than two thousand years, and
yet it was completely unknown to the pre-Shang and Shang Chinese. Insofar as writing
material was concerned, the Chinese system was developed entirely in situ. Since pottery
was not usually used as a medium for keeping records, potsherds bearing word-signs are
very rare—so rare that out of a quarter of a million Shang potsherds unearthed from the
late Shang ceremonial precinct of Hsiao-t'un of the last Shang capital city, near modern
An-yang in northern Honan, only 82 pieces contain simple word-signs. Small wonder,
then, that not until North China had entered well into the high bronze age did the
Chinese begin to inscribe effectively on such hard nonperishable materials as animal
shoulder blades and tortoiseshells. It is by no means coincidental that samples of Chinese
writing began to become abundant only after 1300 B.C.

In spite of these restrictive factors, potsherds bearing basic numerals and simple
logographs have been found from at least eight prehistoric and four pre-1300 B.C. Shang
sites. These sites and their time ranges are shown in the Table.

Comparing all the word-signs yielded by the above sites with abundant Shang oracle
and bronze inscriptions of the post-1300 B.C. period, we can draw the following
conclusions.

1. The decipherable Pan-p'o word-signs consist of some basic numerals, some clan
insignia, and some archetypal Chinese logographs.10

2. The striking consistency in the form of the numerals, throughout some three and
a half millennia from the Pan-p'o phase of the Yang-shao culture to the late Shang
period, should rule out any possibility of coincidence and should push the beginnings of
Chinese writing back to the early half of the fifth millennium B.C. Since the earliest
Sumerian cuneiform script dates back only to 3100 B.C. or, at most, to 3200 B.C., the
numerals and some archetypal Chinese logographs antedated the Sumerian script by
some fifteen hundred years and should therefore be regarded as the earliest writing ever
created by man.

3. It is true that, in spite of the differences in form, the basic concepts underlying the
composition of the numerals from 1 to 4 in the ancient Chinese, Sumerian, and Egyptian
scripts are all iconic. But from the numeral 5 on to 9 the conceptual similarities end.
Whereas in the Sumerian and Egyptian scripts the numerals from 5 upward remain
iconic and additive, the Pan-p'o numerals became strictly symbolic and nonadditive. This
peculiarity, together with the place-value principle in the archaic Chinese mathematical
notations, which is almost as economical and sophisticated as the modern place-value
system used the world over,11 makes the Pan-p'o numerals the most intelligent ever
created by man, before the appearance of the Hindu-Arabic numerals fairly late in
historic times.

4. Necessarily fragmentary as samples of earliest Chinese writing are, our table
clearly indicates a remarkably early and wide dissemination of the archetypal logographic
script. Within a few centuries of its debut in the proto-Chinese Yang-shao nuclear area,
it had already been adopted by various peoples of the Shantung area, generically referred

10 For detailed discussion, see Ho, The Cradle of
393–405.
11 Archaic Chinese mathematical notations and
the place-value system are discussed in Ho, The
Cradle of the East, pp. 233–35, and in Joseph Need-
ham, Science and Civilization in China, III, Math-
ematics and the Sciences of the Heaven and the

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TABLE I. SITES WHERE SAMPLES OF EARLY CHINESE WRITING HAVE BEEN FOUND

<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
<th>Time Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pan-p’o</td>
<td>Sian, Shensi</td>
<td>4865 ± 110 B.C. (4115 ± 110 B.C.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4555 ± 105 B.C. (3955 ± 105 B.C.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4490 ± 105 B.C. (3890 ± 105 B.C.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4235 ± 105 B.C. (3635 ± 105 B.C.)</td>
</tr>
<tr>
<td>2. Ling-t’ai</td>
<td>Ch’ang-an, Shensi</td>
<td>roughly contemporary to Pan-p’o</td>
</tr>
<tr>
<td>3. Hsin-yeh-ts’un</td>
<td>Ho-yang, Shensi</td>
<td>roughly contemporary to Pan-p’o</td>
</tr>
<tr>
<td>4. Ta-wen-k’ou</td>
<td>Ning-yang, Shantung</td>
<td>probably late 5th millennium B.C.</td>
</tr>
<tr>
<td>5. Ling-yin-ho</td>
<td>Lü-hsien, Shantung</td>
<td>probably slightly later than Ta-wen-k’ou</td>
</tr>
<tr>
<td>6. Ch’ien-chai</td>
<td>Chu’eng, Shantung</td>
<td>probably slightly later than Ta-wen-k’ou</td>
</tr>
<tr>
<td>7. Ma-chia-wan</td>
<td>Yung-ching, Kansu</td>
<td>2570 ± 100 B.C. (2185 ± 100 B.C.)</td>
</tr>
<tr>
<td>8. Ch’eng-tzu-yai</td>
<td>Chang-ch’iu, Shantung</td>
<td>probably shortly before 2000 B.C.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1345 ± 95 B.C. (1245 ± 95 B.C.)</td>
</tr>
<tr>
<td>11. T’ai-hsi-ts’un</td>
<td>Kao-ch’eng, Hopei</td>
<td>circa 1500–1300 B.C.</td>
</tr>
<tr>
<td>12. Wu-ch’eng</td>
<td>Ch’ing-chiang, Kiangsi</td>
<td>pre-1300 B.C.</td>
</tr>
</tbody>
</table>

Explanations:
1. All dates are in bristlecone-pine chronology, converted from the original radiocarbon dates released by the Institute of Archaeology, Peking, which are bracketed.
2. Ta-wen-k’ou (Peking, 1974), p. 121, states that this culture should be roughly synchronized with the Ta-tun-tzu phase of the Ch’ing-lien-kang culture, which has been radiocarbon-dated at 3835 ± 105 B.C., or 4435 ± 105 B.C. according to bristlecone-pine chronology.
3. Sites 11 and 12 contain Shang cultural strata both earlier and later than 1300 B.C. and both strata yield samples of writing.

Sources:

to in Shang–Chou times as the 1st or Eastern 1. By the middle of the third millennium B.C. the archetypal script had reached as far west as Kansu. Physical anthropological evidence shows that the prehistoric populations of Kansu belonged to the Southern Mongoloid race, but they were certainly outside the original pale of Sinitic culture. Before 1300 B.C. the script had spread to the central Yangtze hinterland. According to Chou literary works, these southern peoples were proto-Ching-Man and proto-Yüeh, by origin definitely non-Sinitic.

From relatively abundant Chou literary records, it is clear that the criteria by which the various peoples were differentiated into Sinitic and non-Sinitic were cultural rather than racial or ethnic. As to whether these criteria had been the same in more remote antiquity, a startlingly iconoclastic saying of Mencius supplies some clue: "Shun was a man of the Eastern 1 [barbarians]; King Wen [of Chou] was a man of the Western 1 [barbarians]." As is well known, Shun was a legendary sage-king and King Wen was...
the most illustrious Chou ruler, who laid the foundation for the Chou conquest of the Shang. What Mencius really meant to say is that the original “Sinitic” group was relatively small and that any subsequent leaders of non-Sinitic tribes who adopted the Sinitic way of life and contributed to its enrichment were retrospectively to be regarded as sage-kings. It is almost certain that after adopting the archetypal script the men of genius of various originally non-Sinitic ethnic groups contributed to the enlargement of the Chinese vocabulary, and that the script even in pre-Shang times had been probably the most important criterion for membership in the progressively expanding Sinitic world. We need mention only briefly that throughout the millennia of recorded history the Chinese script continued to serve as a main agent in the prolonged process of sinicizing the various non-Han ethnic groups and as a culturally unifying force, even during periods of alien conquest and political division.

To recapitulate, the three fundamental but functionally different characteristics we have discussed are: an agricultural system that has been not only self-sustaining from the very beginning but also one of the most successful in terms of maximal calory output per unit of land; an early religious belief in the necessity to perpetuate patrilineal descent lines that has long been metamorphosed into values and endeavors aiming at assuring the immortality of the entire social body; and a script system so unique in concept and form that it still brands the field of Chinese studies as the most “exotic.” Thanks to the constant interplay of these factors involving the biologically necessary, the socially essential, and the culturally basic, the Chinese civilization has been able periodically to revitalize itself and to retain its discernible identity even today.