

Preface



Written script is an important part of culture and an invaluable cultural treasure. Written symbols are considered to be carriers of culture, crystals of human wisdom, the essence of human civilization, and a pearl-like artifact illuminating the progress of human beings. To be able to communicate through writing is something highly remarkable and exclusive to human beings.

Nowadays, Chinese culture and its carriers are increasingly appealing to international scholars and friends, who are eager to have an overall and in-depth understanding of Chinese characters. In the TCSOL (i.e. teaching Chinese to speakers of other languages), current and future learners of Chinese language also show interest in learning Chinese characters. This book, written in English, presents them with the basics about the development and structure of Chinese characters; it hopes to facilitate their learning of Chinese characters and Chinese culture, which in turn promotes international communication and dialogue.

This book consists of ten chapters.

Chapter 1 explores the origin of Chinese characters, introducing Neolithic signs as embryonic forms of Chinese characters, and ancient pottery signs as the precursor of Chinese characters, differentiating between linguistic and non-linguistic symbols.

Chapter 2 sketches the forms of Chinese characters along the history of evolution, including oracle scripts, bronze scripts, great seal scripts, small seal scripts, clerk scripts, cursive hand scripts, regular scripts, and running hand scripts.

Chapters 3—8 are devoted to the “Liu Shu” principles (six logographic principles) respectively. The compositional motivation of characters is explained and illustrated with

sample characters. For most of the samples, this book provides the form variations of oracle scripts, bronze scripts, and small seal scripts. For some characters, there is no final conclusion about the particular forms, so the relevant forms are left out.

Chapter 3 explains the pictographs denoting the human body, animals, plants, forms of dress and implements, as well as astronomical and geographical phenomena.

Chapter 4 explains indicative characters, by dividing them into two categories: indicative characters as pure symbols and those composed of pictograph plus symbol.

Chapter 5 analyzes ideographs. Distinctions are made according to whether their compositional elements are identical or different.

Chapter 6 presents signific-phonetic characters. Their internal structures are presented in terms of the following categories: left signific and right phonetic structure, left phonetic and right signific structure, top signific and bottom phonetic structure, top phonetic and bottom signific structure, outside signific and inside phonetic structure, outside phonetic and inside signific structure, cornered signific structure, and cornered phonetic structure. The book further explores the horizontal expansion and vertical extension of signific-phonetic characters, to demonstrate the systematic nature of signific-phonetic characters.

Chapter 7 and Chapter 8 present mutually defining characters and phonetic loan characters respectively with examples.

Chapter 9 presents the components of Chinese characters and analyzes construction types of compound-element characters, including the basic and complex construction types. The book adopts the computational linguistic approach and draws tree graphs to analyze the compositional configuration of compound-element characters, according to the number of components, including three-components, four-components, five-components, six-components, seven-components, eight-components, and nine-components.

Chapter 10 presents strokes of Chinese characters, classifies the strokes of Chinese characters, and explains the rules of writing order of Chinese characters, including the order of components in Chinese characters and the order of strokes in the component.

In the process of preparing the book, we strive to observe the following five principles (WWWAC):

1. Well illustrated with figures and graphs. A large number of pictures and figures are employed to show the ancient forms of Chinese characters, and many tree graphs are employed to show the internal structure and organizing mechanism of Chinese characters, so as to make the book more vivid, interesting and readable.

2. Well supported with examples. In order to avoid subjective speculations and

assumptions, Chinese characters are analyzed through a large quantity of examples, so as to increase the degree of objectivity.

3. Well organized. The first two chapters are devoted to the origin and evolution of Chinese characters, with the middle six chapters to the six logographic principles and the last two chapters to the structural and compositional patterns of Chinese characters. The contents unfold from remote to proximate era, the transition and connection between the chapters being natural and logical.

4. Academically rigorous. This book is solidly based on the findings of previous research. Arbitrary interpretation is avoided for the motivation of construction of Chinese characters. When faced with a controversial issue, we are not biased toward any argument, precluding any hasty conclusion and simply presenting all sides of the debate, so as to make this book more scientific.

5. Convenient to read. An index is given at the end of this book, which is convenient for readers to refer to the exact words described in the book.

The above-mentioned five features are what we aimed at in writing this book. It's up to the readers to judge how far we have succeeded in our objectives.

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Chapter 1

Origin of Chinese Characters

Chinese is one of the oldest living languages in the world. Chinese characters, as its writing system, play an important part in Chinese language and culture. The knowledge of Chinese characters is helpful in understanding Chinese culture.

What is the origin of Chinese characters? So far, there is no definite answer to this question, due to the lack of historical records from the earliest periods.

According to legend, Chinese characters were invented by Cangjie (仓颉, c. 2650 BC), a bureaucrat under the legendary Yellow Emperor. There are quite a few variations of the legend. One of them says that Cangjie was hunting on Mount Yangxu in modern Shanxi when he saw a tortoise whose veins caught his curiosity. Inspired by the possibility of a logical relation to those veins, he studied the animals of the world, the landscape of the earth, and the stars in the sky, and invented a symbolic system called zì (字) — the first Chinese characters.

The commonly accepted starting point of Chinese characters is the oracle bone script (甲骨文; pinyin: jiǎ gǔ wén; literally “shell-bone script”; this book uses “oracle script” for short in view of both the bone and the shell scripts) of the late Shang Dynasty (c. 1000 BC) (for more information, see Chapter 2). The oracle bone script was a fully-developed and matured writing system. It would be as ridiculous to take it as the origin of Chinese characters, as to say someone is born with a beard. This suggests that the birth of Chinese characters can be traced back to even earlier times.

A writing system is a form of recording spoken language. Chinese characters were not formed in one day. There must have been a long incubation period before the writing system became full-fledged. In this sense, we can assume that Cangjie’s inventing Chinese

characters is merely a legend.

In this chapter, we are going to explore and present the potential evidence of embryonic Chinese characters, by means of referring to some of the latest archaeological findings.

Writing systems are created to meet people's need to keep records of the matters in their lives. How did people keep records at the very beginning? There was evidence indicating that ancient people kept records by notching wood or tying knots, and they conveyed messages by drawing pictures. Later on, some elements of the pictures were singled out to represent a particular object or event. These elements took the form of pictorial writings, script-like marks.

In recent decades, inscriptions have been found on pottery and on bones at a variety of locations in China. These simple, geometric marks are similar to some of the earliest known Chinese characters.

We can structurally divide them into two types: the incised signs and the pictorial signs. The incised signs originated from the mnemonic devices of tying knots in string (knotted cords), and incising notches on wood as documented in ancient Chinese literature. The pictorial signs originated from the drawing pictures. Both types of signs are primitive methods of recording events.

1.1 Neolithic Signs in China: Embryonic Forms of Chinese Characters

Signs discovered at the archaeological site of Jiahu

Archaeologists reported finding a few inscribed symbols on tortoise shells at the Neolithic site of Jiahu (贾湖) in Henan (河南) Province, a division of Peiligang ancient cultural relic (裴李岗文化遗址), dating to c. 7000—5800 BC.



Fig. 1.1 Incised signs on the tortoise shells excavated from Jiahu site (贾湖刻符), from the Internet

Cliff carvings discovered at the archaeological site of Damaidi

Damaidi (大麦地) is a small village located in Zhongwei (中卫) County of the Ningxia Hui Autonomous Region in northwest China. At Damaidi in Ningxia, 3,172 cliff carvings have been discovered, dating to c. 6000—5000 BC. Most of them are pictorial signs.



Fig. 1.2 A sign in Damaidi Cliff carving, from Yang et al., 2007

(1) denotes the meaning of “surrender”; (2) depicts a hunting scene.

1.2 Ancient Pottery Signs: the Precursor of Chinese Characters

Pottery is one of the most important cultural remains in archaeology and the practice of incising signs on pottery vessels has a long history in China. The signs that are inscribed on pottery are called pottery inscriptions or pottery signs. The number of early pottery inscriptions is very limited, but they are of paramount importance, because they are the earliest sort of inscriptions so far discovered.

In the second half of last century, pottery inscriptions of the Shang (商) and pre-Shang (商以前) periods that were discovered by archaeologists have made a great contribution to the exploration of the origins of Chinese characters.

These pottery inscriptions are found at the following sites: Banpo (半坡) and Jiangzhai (姜寨) in Shaanxi (陕西); Dawenkou (大汶口) and Chengziya (城子崖) in Shandong (山东); Taixi (台西) in Hebei (河北); Erlitou (二里头), Erligang (二里岗) and Xiaotun (小屯) in Henan (河南); and Wucheng (吴城) in Jiangxi (江西).

Pottery signs discovered at the archaeological site of Banpo

The group of pottery inscriptions discovered at Banpo is one of the most important recent finds. They were discovered in the village of Banpo near Xi'an (西安) in Shaanxi, between the autumn of 1954 and the summer of 1957. In terms of Chinese archaeology, the Banpo site belongs to the culture of the Yangshao period (仰韶时期). Radiocarbon

dating extrapolates the time to be c. 5000—3000 BC, and the result of bristlecone pine dating is a few centuries earlier.

According to the archaeological site report, numerous pottery vessels and potsherds were excavated. Among them, 113 pieces bear 22 incised signs or symbols, all of which are used independently, and are possibly the marks indicating the potters or owners of the vessels. The marks of owners may represent clans, families or individuals.

The Banpo signs are the earliest surviving examples of Chinese characters.

The following pictorial signs are found on Banpo pottery:

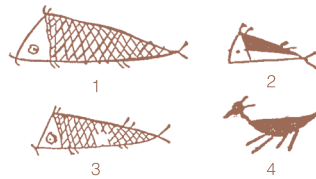


Fig. 1.3 Pictorial signs on Banpo pottery, from Archeology Institute of Academia Sinica (中国科学院考古研究所), 1963: 167-8, 180, Figs. 12 -2, 128

In Fig. 1.3, Sign No. 1, 2, 3 can be interpreted as “fish”, and No. 4 as “animal”. They bear a close resemblance to the drawing pictures.

The following incised signs are found on Banpo pottery:



Fig. 1.4 Incised signs on Banpo pottery, from Archeology Institute of Academia Sinica, 1963:197, Fig. 149

- 1 can be interpreted as the numeral 一 (one) or 十 (ten).
 2 can be interpreted as the numeral 二 (two).
 3 and 4 can be interpreted as the character 示 (ancestral table).
 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 18, 19 are the unidentified signs until now.
 15 can be interpreted as a pictograph of a young plant 屮.
 16 can be interpreted as the numeral 五 (five).
 17 can be interpreted as the numeral 七 (seven).
 20 and 22 can be interpreted as the combination 四十 (forty) or 十四 (fourteen).
 21 can be interpreted as the combination 三十 (thirty) or 十三 (thirteen).

Pottery signs discovered at the archaeological site of Jiangzhai

Some more pottery signs were discovered between 1972 and 1974 at the archaeological site of Jiangzhai. Radiocarbon dating extrapolates the time to be about 3500 BC. The village Jiangzhai is situated in Lintong (临潼) County, only 15 kilometers northeast of Banpo. Some of the archaeological remains found at the Jiangzhai site are very similar to those found at Banpo. This seems to suggest that the two sites are closely related in culture.

On Jiangzhai pottery, the following pictorial signs are found:



Fig. 1.5 Pictorial signs on Jiangzhai pottery,
 from Xi'an Banpo Museum (西安半坡
 博物馆) 1975:83, Fig. 6; 1972:141,
 Fig. 13, Plate 1

In Fig. 1.5, two sorts of creatures are depicted: one of them is the fish (2 and 4), and the other is the frog (1 and 3).

The following incised signs are found on Jiangzhai pottery:



Fig. 1.6 Incised signs on Jiangzhai pottery, from Xi'an Banpo Museum, 1975:82, Fig. 1

1 can be interpreted as the numeral 五 (five).

2 can be interpreted as the numeral 一 (one) or 十 (ten).

Pottery signs discovered at the archaeological site of Dawenkou

Archaeological sites of the Dawenkou culture have been excavated since the early 1950s, mainly in Shandong Province. Archaeological finds show that the appearance of the Dawenkou culture was earlier than that of the famous Longshan culture (龙山文化) in this area. Dawenkou is believed to be the direct ancestor of the Longshan culture. According to radiocarbon dating, the Dawenkou culture lasted some two thousand years, ranging from about 4500 BC to 2300 BC, which is only slightly later than the Yangshao culture represented by the Banpo site.

The discovery of the Dawenkou pottery inscriptions is of great historic significance. The Dawenkou pottery inscriptions are supposed to be the close ancestors of Chinese characters in the Shang and Zhou (周) dynasties because the connection between the Dawenkou inscriptions and the characters of later periods is strong.

The following pictorial signs are found on Dawenkou pottery:

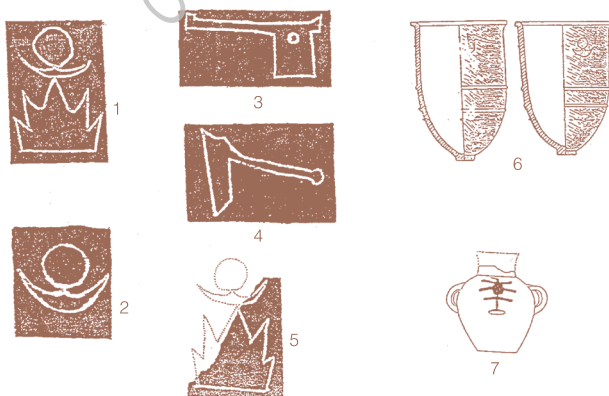


Fig. 1.7 Pictorial signs on Dawenkou pottery, from Jinan Museum (济南博物馆), 1974:118, Fig. 94

In Fig. 1.7, Sign No. 1 shows the character 旦 (morning). This sign consists of three elements: 日 (sun) on the top, 山 (mountain) at the bottom, and the middle part which can be explained as a picture of cloud. Thus it is a picture character portraying the sun rising above the cloud on the top of the mountain. Hence its meaning is “morning”.

2 can be interpreted as a simplified form of Sign 1.

3 can be interpreted as the character 戌 (read as /xū/), a pictograph of a long handle axe.

4 can be interpreted as the character 斤 (read as /jīn/), a pictograph of an adze (手斧).

5 is an incomplete sign of 1, so it shows the character 旦.

6 is the pottery where the signs 4 and 2 are incised.

7 is the pottery where a sign which shows the character 葉 (read as /hū/), a pictograph of a flower, is incised.

Pottery signs discovered at the archaeological site of Chengziya

The most important site of the Longshan culture of Shandong was discovered in 1928 at Chengziya, near the town of Longshan. Two ancient culture layers were unearthed at this site, a Neolithic type which was closely connected with the Shang civilization in the lower stratum, and an Eastern Zhou type in the upper stratum.

Incised pottery signs were found in both the upper and the lower stratum.



Fig. 1.8 Incised signs on Chengziya pottery, from *Chengziya*,
Institute of History and Linguistics, Central Academy (《城
子崖》, 中央研究院历史语言研究所), Nanjing, 1934:534

In Fig. 1.8, Signs 1 and 2 can be interpreted as 一 (one) or 十 (ten).

Pottery signs discovered at the archaeological site of Taixi

The Shang culture site at the village of Taixi in Gaocheng (藁城) County of Hebei was excavated in the summer of 1973. The radiocarbon dating of the site shows this culture was in the middle Shang period.

Twelve pieces of potsherds bearing inscriptions were found among the pottery remains. The following pictorial signs are found on Taixi pottery:

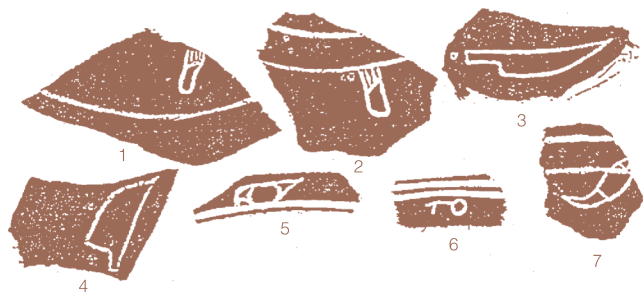


Fig. 1.9 Pictorial signs on Taixi pottery, from *Cultural Relics* (《文物》), 1974:219. 50, Fig. 1

1, 2 can be interpreted as the pictograph 止 (foot).

3, 4 can be interpreted as the pictograph 刀 (knife).

5 can be interpreted as the pictograph 目 (eye).

6 can be interpreted as the pictograph 兒 (child).

7 is an incomplete form. Its upper part is missing, but it can be suspected as a pictograph of a fish.

Pottery signs discovered at the archaeological site of Erlitou

The Erlitou site near the town of Yanshi (偃师) in northwestern Henan has been excavated since the spring of 1959. The radiocarbon dating extrapolates the year of the site to be c. 1900—1600 BC.

Twenty-four different incised pottery signs were discovered.

The following incised signs are found on Erlitou pottery:



Fig. 1.10 Incised signs on Erlitou pottery, from *Archeology Institute of Academia Sinica*, 1965 b:222

1 can be interpreted as the numeral 一 (one) or 十 (ten).

2 can be interpreted as the numeral 二 (two) or 廿 (twenty).

3 can be interpreted as the numeral 三 (three) or 卅 (thirty).
 4 can be interpreted as the character 俎 (ancient sacrificial utensil).
 5, 6 are unidentified signs.

Pottery signs discovered at the archaeological site of Erligang

The Shang cultural site at the village of Erligang in the southwestern suburb of Zhengzhou (郑州) in Henan has been excavated since the early 1950s. The Erligang phase came in the middle Shang period, between the Erlitou site of the early Shang and the Xiaotun site of the late Shang.

Twenty-nine signs inscribed on pottery were discovered at Erligang. They are similar to the other pottery signs of previous stages in both form and style.

The following incised signs are found on Erligang pottery:

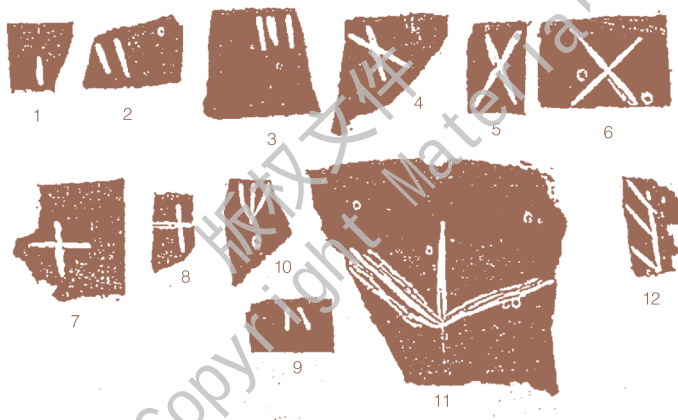


Fig. 1.11 Incised signs on Erligang pottery, from *Journal of Archeology* (《考古学报》), 1954:105, Fig. 12

1 can be interpreted as the numeral 一 (one) or 十 (ten).
 2 can be interpreted as the numeral 二 (two) or 廿 (twenty).
 3 can be interpreted as the numeral 三 (three) or 卅 (thirty).
 4, 5, 6 can be interpreted as the numeral 五 (five).
 7, 8 can be interpreted as the numeral 七 (seven).
 9 can be interpreted as the numeral 八 (eight).
 10, 11 can be interpreted as the pictograph 中 (small plant).
 12 can be interpreted as the pictograph 阜 (mound).

Pottery signs discovered at the archaeological site of Xiaotun

The Xiaotun site in Anyang (安阳) County of Henan Province has been one of the most important Shang cultural sites excavated in the last Shang capital Yin (殷) during the successive reigns of the twelve kings from Pangeng (盘庚) to Dixin (帝辛), for about 273 years (c. 1300—1027 BC). The most important excavations of this site were carried out between 1928 and 1937. Since then, a series of Shang cultural sites have been excavated in this area.

The most important finds at Xiaotun are the numerous inscribed oracle bones and shells which furnish important new evidence pertaining to Shang history and writing. The discoveries at Xiaotun are indeed a milestone in the history of archaeology in China. Apart from the inscribed bones and shells, some potsherds bearing incised signs were also discovered at this site.

The Xiaotun pottery inscriptions are the largest group of early pottery inscriptions so far discovered, consisting of 70 signs. Most of them are intelligible.

The following picto-signs are found on Xiaotun pottery:



Fig. 1.12 Picto-signs on Xiaotun pottery, from *Report of Chinese Archaeology: Volume II*, (《中国考古报告集之二》), Taipei, 1956: Figs. 61-3

1 can be interpreted as the character 庚. This character was originally a pictograph of a musical instrument, probably a hand-drum. The upper part is its

ornament, the middle part is the drum proper, and the lower part is its handle and two swinging knobs.

2 can be interpreted as the pictograph 见 (see).

3 can be interpreted as the pictograph 石 (stone).

4 can be interpreted as the character 旨 (delicious).

5 can be interpreted as the character 祀 (sacrifice).

The following incised signs are found on Xiaotun pottery:



Fig. 1.13 Incised signs on Xiaotun pottery, from *Report of Chinese Archeology: Volume II*, Taipei, 1956: Figs. 21-2

1 can be interpreted as the numeral 一 (one) or 十 (ten).

2 can be interpreted as the numeral 三 (three) or 卅 (thirty).

3 can be interpreted as the numeral 四 (four).

4, 5, 6, 7, 8 can be interpreted as the numeral 五 (five).

9, 10, 11, 12, 13, 14, 15a, 15b can be interpreted as the numeral 七 (seven).

Historical and archaeological evidence shows that the center of the Shang civilization was on the lower and middle reaches of the Yellow River (黄河). Although the reaches of the Yangtze River (长江) was remote from that cultural center, archaeological remains show that the ancient civilizations of the two areas are closely related.

Pottery signs discovered at the archaeological site of Wucheng

As an extremely important archaeological site of Shang culture, Wucheng in Qingjiang (清江) County, Jiangxi Province, located on the lower reaches of the Yangtze River, has been excavated since 1973. A total of 66 characters were incised on pottery and stone molds. Most of them are unidentified and do not occur in the oracle bone and bronze inscriptions, but many of them are identical with the Shang and Zhou characters.



Fig. 1.14 Incised signs on Wucheng pottery,
from Tang Lan, 1975

In Fig. 1.14,  can be interpreted as 曲 (/qǔ/).

Pottery signs discovered at the archaeological site of Liangzhu

Another ancient civilization of the Yangtze River is Liangzhu culture (良渚文化), dating to c. 3250—2150 BC. It is named after the archaeological site of Liangzhu (良渚), Yuhang (余杭) District, Hangzhou (杭州), which is located on the lower reaches of the Yangtze River. A large number of potteries with incised signs were excavated, and the total number of signs was more than two thousand.



Fig. 1.15 Incised signs on Liangzhu pottery, from He et al., 2009:7

Pottery signs discovered at the archaeological site of Shijiahe

The archaeological site of Shijiahe (石家河), dating to c. 2600—2000 BC, is located on the middle reaches of the Yangtze River in Tianmen (天门), Hubei (湖北) Province. Each of the following signs is found to be incised separately on a pottery vessel. The meanings of most of the signs are intelligible, and the configuration of the signs features curved strokes and patterned lines.



Fig. 1.16 Incised signs on Shijiahe pottery, from He et al., 2009:7

1.3 Mapping Non-linguistic Symbols onto the Language System of Chinese

The early pottery inscriptions have been found in an area approximately 1,000 kilometers long, north to south, and 900 kilometers wide, east to west. They range from the Yangshao period in the c. 5000 BC to the late Shang period in c. 1000 BC. Thus, by the late Shang Dynasty, these inscriptions on pottery had undergone a history of at least 4,000 years. Most of the major sites are located in the central area of ancient China, on the middle and lower reaches of the Yellow River.

According to the study of these pottery inscriptions, we can say that Chinese characters have a history of some 7,000 years, tracing back to the Banpo pottery signs. These pottery inscriptions can be seen as the original Chinese characters or the survival of original Chinese characters.

However, scholars are divided in their interpretations of such inscribed symbols. Some have identified these with specific Chinese characters. Others interpret them as pictorial symbols such as clan insignia, rather than writing.

Although the distinction between characters and pictures seems to be indeterminate, writing is clearly distinguished from drawing theoretically. A language consists of

three strata: meaning, wording, and expression (Halliday 1985:14). Writing is a part of language. Specifically, writing is the visual mode of language expression, as an alternative to the vocal mode, i.e. speech sound. The expression may take the form of either sound or writing.

One essential principle to determine whether something is a character or a picture is to see whether it can be read aloud. Since writing is the alternative to spoken language, characters can always be read aloud. On the other hand, if we look at a painting, or any other visual art form, we can describe it, comment on it and say what it means, but we cannot read it.

Although we cannot document the process in which writing first evolved, it is reasonably clear how it happened. Writing did not begin by somebody deciding to write language down until by somebody saying it aloud. It evolved from the coming together of two independent semiotic systems: language, on the one hand, and visual imagery on the other. Writing begins when pictures are interpreted as (units of) language (Halliday 1985:14). The same visual form can be interpreted in two ways: representation of things, or representation of words, which correspond to pictures and characters respectively. So, a character is similar to a picture in that they have meaning, but a character differs from a picture in the function, to stand for the vocal words in language.

Another important point of writing development is using visual forms to represent abstract meanings (Lü Shuxiang, 1998:4). As we know, not everything in language can be drawn into a picture. It is easy to use pictures to serve as characters to represent the concrete concepts like *tree*, *mountain* and *horse*. However, if we were to start to create characters for English, we would find it difficult to draw a picture representing *of*, *the*. When all the possible wording (both concrete and abstract, or lexical and grammatical) are able to be (more or less unambiguously) represented, the writing evolves into a full system. In this sense, the representation of the non-concrete wording in a language is of special significance.

In the development of Chinese writing, a number of meaning-making methods are exploited to make the characters systematic and efficient. These methods are to be explored in the following chapters.