Chinese Writing System

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Abstract: With an aim to assist the Chinese learners to have comprehensive understanding and overall knowledge about Chinese character and writing, this paper mainly discusses the origin and development of Chinese character and writing, analyzes the structure of Chinese character, the phonology of Chinese (Pronunciation) and the reform of Chinese.
Keywords: Chinese; Character; Writing

1. Introduction

There are more native Chinese speakers than any other language's native speakers in the world ——Over one billion people speak Chinese. Being an important communication tool among a huge population, Chinese has a great impact on China's neighboring countries' writing and become the written Lingua Franca and the diplomatic language in Far East Asia. Since Chinese writing was invented about 3,500 years ago and the discovery of oracle-bone-writing in late Shāng dynasty, Chinese writing/character has gone through various stages of development: Carapace-bone-script, inscriptions on bronze, seal character, clerical script, and regular script. Also, the carriers of Chinese character have experienced different evolvement: the inscribed shells and bones, inscriptions on bronze, written on bamboo and silk and the regular script on paper.

There are several major dialects groups in China, such as Mandarin, Wú, Mǐn or Cantonese and most of dialects are written in the same way with only some minor variation like the writing of Cantonese (Rogers, 2005, p.20). For clarification, in this text, the word Chinese refers to modern standard Chinese, and the writing system means Mandarin writing system. This paper will center on the regular/modern script from four aspects: The origin and development of Chinese writing; the structure of Chinese character; the phonology of Chinese; the reform of Chinese. With an attempt of assistance the understanding of Chinese writing system, some differences between Chinese and English will also be addressed as well.

2. The origin and development of Chinese writing

There was a legend about Chinese writing saying that Chinese writing was invented by a person named "Jie Cang" who had created thousands of Chinese characters overnight. However, anyone who has common sense will know any writing must go through great efforts of innumerable people with countless evolutions. The shape of characters originated from Carapace-bone-script and varied with inscriptions on bronze, seal character, clerical script and regular script. The earliest material used for Chinese writing was oracle-bone writing (shell-and-bone), which has been dated to 1200-1050 B.C. during the late Shāng dynasty in the central east area of China. The early inscription have been found on the bone of cattle, the plastron turtles (Rogers, 2005, p.29) or even the rib of tiger. Inscriptions were also made on various kinds of metallic and clay materials and on pottery. Bronze inscriptions' importance as historical documents is considered to be more significant during the Zhou dynasty when bronze was the most important metal in ancient Chinese civilization (Shaughnessy, 2004, p. 40). However, the studies of stone inscriptions were developed much earlier than that of bronze, which were associated with the Chinese term of epigraphy. Among the earliest inscribed stones of historical significance extant today are the ten so-called stone drums, which were traditionally dated from the period of King Xuan (827-782 B.C.) of the Zhou dynasty (pp. 69-70). Bamboo and wood were the earliest material used for books and documents in China and had a strong and far-reaching impact on Chinese culture. All the essentials of Chinese civilization were originally recorded on these hard-surfaced materials, but the origin of using bamboo or wood for writing in China is uncertain (pp. 96-97). Writing on silk in pre-Qin literature seemed to have been limited to important and sacred documents but it became very common and popular in the Han dynasty (p. 130).

However, all these writing material mentioned-above have some sort of disadvantage: silk is too expensive, bamboo and stone are too heavy. To solve this problem, a light but less expensive material—paper—was invented/introduced by Cai Lun in A.D. 105, thus became the most popular writing material from then on (p. 155).

3. The structure of Chinese character

From the shape of graphemes/appearance, writing can be divided into alphabetic and non-alphabetic writing; from pronunciation of the word, writing can be divided into phonogram and ideogram. Chinese characters are not alphabetic writing but meaning-phonetic writing. That is Chinese characters are not consisted by letters, instead, they are made up of graphemes that are formed with strokes. For this reason, it's necessary to discuss the graphemes and strokes before we move to the structure of Chinese character.

3.1 Strokes and graphemes

Instead of neat rows of 26 simple alphabetic letters, there are tens of thousands of unique characters formed with a varied number of strokes. The great majority of Chinese characters are formed by more than two strokes. Stroke is the smallest unit of graphemes, and grapheme is the smallest unit of character. Their relationship can be seen in this way: stroke→grapheme→character. Table 3. 1 gives some examples of grapheme formed with a varied number of strokes, and some examples showing how character is formed with these strokes.

Table 3. 1

Number of strokes	samples of strokes (grapheme)	sample characters
1	丨 亅 丿 乀 一 乙 乚	川(plain, river), 亿(a hundred million)
2	八 氵 厂 刀 儿 二 阝	冰(ice), 刃(blade), 穴(hole), 队(team)
3	艹 女 马 口 囗	花(flower),妈(mother),国(country),吃(eat)
4	火 木 气 日	烧(burn), 椅(chair), 氧(oxygen), 晒(bask)
5	白 禾 目 鸟 石	皓(bright), 香(fragrant), 眼(eye), 鸡(chicken)
6	虫 米 衣 竹	蛙(frog), 糖(sugar), 裤(pants), 篮(basket)
7	赤 豆 角 足	赫(hertz), 登(ascend), 解(to loosen), 跳(jump)
8	雨 齿 金 鱼	雷(thunder), 龄(age), 铁(iron), 鲤(carp)
9	革 骨 鬼	鞋(shoe), 骷髅(skeleton, skull), 魂(soul)
10	高	敲(knock)
11	鹿	麒(mythical unicorn)
12	黑	墨(ink), 黔(abbreviation of Guizhou province)
13	鼠	鼬(stoat)
14	鼻	齆(the nose is blocked and the pronunciation is not clear)

(Note that the explanation of the character is only one meaning of that character)

(Language Institute, Chinese Academy of Social Sciences, 2004, pp. 17-23)

There are a lot more graphemes than these, for some grapheme, the number of strokes ran up to as many as 56 strokes, like the word "biang". The order in which the strokes of a character are written is important. There are some rules for the order of writing strokes. In order to be legible when a character is written quickly, it is necessary to write the stroke by following these rules. According to Rogers (2005), the general guideline for stroke order are: (1) top to bottom; (2)horizontal before vertical; (3)outer before inner finished; (4)left to right; (5)middle before sides; (6) close bottom last (p.40). Of course, there are many special rules for stroke ordering

3.2 The structure of character

The structure of Chinese character can be discussed in two ways: from morphology (the relative position of graphemes) perspective and from the semantics and phonology perspective.

3.2.1 Morphlogy (relative position of the graphemes)

From what have been discussed above, knowing that Chinese characters are ideographic characters, but in what way the graphemes can be combined together to form character? Generally speaking, there are seven ways in which the graphemes can be combined together in order to form a character.

3.2.1.1 Left + right

Two graphemes stand left and right to form a character. Form example, the character "妈" (mother)is formed by grapheme "女" (woman)and "马"(horse) with each one standing on the left and right side respectively. Similarly, the character "林"(forest) is combined with two graphemes "木"(wood, tree) together side by side.

3.2.1.2 Left + middle + right

Three graphemes stand in the left side, middle and right side respectively. For example, the character "树"(tree) is formed by three graphemes "木，又，寸"in left, middle and right position; also, character "彬"is composed by "木，木，彡".

3.2.1.3 Top + bottom

One grapheme is on the top and the other grapheme is at the bottom. For example, the character "宝"(treasure) is constituted by "宀" on the top and "玉" at the bottom; the same with the character "炎"(hot) is formed by two graphemes "火" overlapped together.

3.2.1.4 Top + middle + bottom

The first grapheme is on the top, the second grapheme locates between the top and the bottom, and the last grapheme is at the bottom. For example, character "空" (empty) is formed by three graphemes "宀，八, 工".

3.2.1.5 Inside + outside

One grapheme is surrounding or is be enveloped in another grapheme. For example, the grapheme "国" (country), the grapheme "玉" is enveloped in grapheme "囗"; similarly, character "闭", grapheme "门" is surrounding "才".

3.2.1.6 Intersection/crossing

Two or three graphemes intersect each other from left to right, top to bottom or inside or outside. For example, "戈" ("弋" and "丿" intersect each other); "本"(root) ("木"and "一" intersect each other).

3.2.1.7 Mixture

This method combines several of the above-mentioned ways together. For example, the character "赢" (win) is formed by 6 graphemes "亠、匚、口、月、贝、凡" combining "left + middle + right" and "top + middle + bottom" forms together.

3.2.2 The semantics and phonology

Generally, from the perspective of semantics and phonology, there are four methods in constructing Chinese characters: pictograms, abstract pictograms, semantic-phonetic compounds and semantic-semantic compounds (Rogers, 2005, p. 34).

3.2.2.1 Pictograms (Pictography)

Pictography writing can also be called "picture writing". This is the basic form of writing in early stage of the development of character, which is also applied in other languages like Egyptian, Cuniform writing. It is a very good way to describe a certain type of concrete object since it is a "picture" about that object. For example, the character "马"(horse)has gone through 6 stages before we got the modern form writing "马". The first stage was actually a picture of "horse", and then it was evolved into a character "马" meant "horse" (as shown in first row of Figure 2.1.1). Similarly samples like目(eye), 弓(bow), 月(moon), 水(water), 日(sun)and 山 (mountain), which are shown at the second and third rows of Figure 3.2.2.1

(Figure 3.2.2.1 Pictograms)

马(horse) (Loewe, M., 1991, p. 134)

日(sun)　　目(eye)　　弓(bow)　　月(moon)　　水(water)　　山(mountain)(self-drawing)

3.2.2.2 Abstract pictograms

When we need to describe something abstract, which don't have a concrete shapes. How can we mean them? Here comes the second way of character formation "abstract pictograms", which mean describe something form their meaning instead of shape. Let's come up with some examples as follows:

We want to express the meaning "the end". We will use the character/grapheme "木" (wood or tree) and then add a line on its' top to form "末", means "the end". However, if the line was added at the bottom of the "木" (wood or tree), "本" means "root" (imagining a line like the root hair of a tree).

A point "丶"was added to a knife "刀" to form "刃" means the sharp point of a knife. So we get the meaning of "blade, knife-edge".

When we need to mean "up" and "down", we will write the grapheme "卜" (like a person) on the grapheme "一" (like a bench), so we get the character "上" means "up" ("上" looks like a person sitting on a bench), but if we write the "卜" under the "一" to get a character "下", we then get the meaning of "down" ("下" looks like a person under a bench).

3.2.2.3 Semantic-phonetic Compounds

Semantic-phonetic compounds is the most common type of structure in Chinese character. Obviously, one part of the character is related to the meaning of the character, and another part is related to the sound. For example: the word "材" (material or timber): The grapheme "才" (pronounced as "cai") form the sound of the word and the grapheme "木" (wood) form the meaning of "材" (material or timber); the word "财" is also pronounced as "cai" but it means "treasure" because the grapheme "贝" has the meaning of shell or valuables. More examples can be seen form the word "忠"(loyal, faithful) : the grapheme中(pronounced as "zhong") determine the sound of the word as "zhong", and the grapheme "心" (heart) means the word "忠" as "loyal, faithful"; the word "盅"(handleless cup）is also pronounced as "zhong" , but the grapheme "皿" means "utensil", so we use this word to mean "handleless cup" (cup is something that is related to utensil).

3.2.2.4 Semantic-semantic compounds

The fourth method to form Chinese character is semantic-semantic compounds. It's the combination of two independent graphemes or characters on the basis of their meaning. A lot of Chinese characters are formed in this way. For example, the word "明"(bright): The sun plus the moon, so it's bright; the word "好"(good): if a family has both daughter and son or a twin of one boy and one girl, it is good or perfect; the word "旦"(dawn): the sun is rising from the horizon means "dawn"; the word "众"(crowd, many, numerous): three graphemes/characters "人" (people) come together means many or crowd; the word森林(forest) : there are a lot of trees in forest; the word "男" (male) is formed by "田" (field) and "力" (strength) . Traditionally, man works in the field and woman does the household.

Of course, there are not only these four ways with which Chinese character can be formed. For example, the creation of the borrowing words—we translate them base on the sound of borrowing words, e.g., Florida is pronounced as "fúlólǐdá"(佛罗里达), which is similar with the sound of Florida; the word "water Gate" is translated into "水门", in which "水" means "water" and "门" means "gate". (Rogers, 2005, p.39).

4. The phonology of Chinese (Pronunciation)

Traditionally, there are three parts in Chinese syllable (pinyin): initial, final, and tone. The initial consists of the initial consonant, and the final consists of everything else, except the tone (Rogers, 2005, p. 24). The initial is equal to consonant in English, while the final can be treated as the vowel. Table 4.1 shows the Mandarin initials (23 totally) and finals (24 totally).

Table 4.1

Initial	b p m f d t n l g k h j q x zh ch sh r z c s y w
Final	a o e i u v ai ei ui ao ou iu ie ve er an en in un ün ang eng ing ong

(Referring to Garry, & Rubino, 2001, pp.147-148)

There are four tones in Chinese syllable: the first tone (, the second tone, the third tone, and the fourth tone (as shown in Table 4.2). In some language, pitch patterns doesn't have the power to change the meaning of the word. In Chinese, however, different

pitch patterns distinguish different words (An example is shown in figure 4.2) (Rogers, 2005, p. 25). In this example, "g" is the initial (consonant), and "e" is the final (vowel); the shapes on the top of "e" (一、／、∨、＼) are the four different tones.

Table 4.2

The first tone	(High level)	gē	哥	brother
The second tone	(Rising)	gé	隔	separate
The third tone	(Falling-rising)	gě	葛	Arrowroot, kudzu or use as a surname.
The fourth tone	(falling)	gè	个	individual

Normally, the pronunciation of the word base on the tone as stipulated on the syllable, but there are also some instances that the tone of the word changing as the word they combined with. For example, if both of two characters in one word are pronounced in the third tone, the sound of the first character needs to be changed in the second tone. One example for this is a very common word "你好" (hello), both "你" (nǐ)and "好"(hǎo) are pronounced in the third tone when they are alone, but the third tone of the word "你好"(níhǎo) has been changed to the second tone.

UP to this points, the differences between the phonology of Chinese and English can be seen from three aspects: First, in English, the numbers of syllable depend on the length of the word, like the word "box"[bɑks], it only has one syllable, but for the word congratulation [kən.græʧju'leiʃən], you have five syllables, but in Chinese, the number of the phonemes have nothing to do with the form of the character. Sometimes, a very complicate character like "囍" (happiness) pronouncing "xǐ" (a short syllable), but for some simple character like "上" (up) pronouncing "shàng" , which is a long syllable. Second, in English, base on its appearance, maybe you can pronounce the word that you don't know. But in Chinese, you can't always do that because in many cases the sound of the parts is not relevant with the sound of word. Third, both English and Chinese have tone changing in the sound of the word, but in English, changing the tone (stress or unstressed) will not change the meaning of the word, however, different tone means different word in Chinese, e.g., the word "好" (hǎo, third tone) means "good", but it means "like" when it was pronounced as "hào" (fourth tone).

5. The reform of Chinese

Since Chinese is written in characters and there is no any indicator for the pronunciation of the words, which has created a great difficulty for the outsider to pronounce the word, several schemes of reformations were under way in the past few decades.

A scheme to represent utterances of other alphabets or writing systems is know as a romanization. There were several different romanizations which have been suggested and "pinyin" became the official Romanization of the People's Republic of China (PRC) and is widely used (Rogers, 2005, p. 25).

In 1917, Xuantong Qian, the first person who suggested that the traditional vertical writing of "right to left" should be changed to horizontal writing of "left to right" with an attempt to relieve the eye weariness. This proposal was soon met with general acceptance and the horizontal writing became popular; furthermore, in the early days of the foundation of PRC, the Minister of Education, Moruo Guo, was one of the persons who had put forward the suggestion of simplification of Chinese characters. The following years witnessed a great success of these reformations even though the traditional Chinese characters have been using in Hongkong, Macao and Taiwan and vertical "right to left" writing order is still seen in some instance like the invitation card of wedding (Rogers, 2005, p. 197).

6. Conclusion

The overview on the Chinese Writing System not only helps to understand Chinese writing in more depth regarding its history, structure, phonology, and reform, but also expands the realization of the diversity of the writing systems of the world. Some languages use alphabetic writing, while others use non-alphabetic writing. Some languages belong to phonogram writing, but others are ideogram. However, no matter which writing system a language is written, writing carries a mission of recording and conveying information beyond the immediate moments, and it is one of the most significant cultural accomplishments of human beings (Rogers, 2005, p. 1)

There are about 250-300 kinds of written language were read in the world. Almost all the writing systems in use today, except for Chinese, involve some sort of borrowing (p. 4). The uniqueness of Chinese writing system increases the difficulty of an outsider learning and deciphering thus impeding the cross-cultural activity in some degree. Therefore, a steady effort should be made with the reformation of Chinese writing on the premise of ensuring its specificity and uniqueness.

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