

## Advantages and Thinking on Design of Chinese Characters' Graphics

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### Abstract

Given now the designs with Chinese characters as a major element by Chinese visual communication designers are still not adequate, this paper focuses on the design of Chinese characters' and tries to explore the development potentials and new ideas on Chinese characters in current visual communication. The origins of the world's characters show all characters have ever been related to pictures. As Chinese characters express both meaning and pronunciation and their origins and composition are closed related to graphics, the graphic design of them has a great advantage. This paper proposes three ideas on the design of Chinese characters' graphics on the basis of the study of the development and composition of Chinese characters, in the hope of obtaining a further understanding of the traditional perception ways and creative thinking methods of Chinese and continue to develop Chinese character culture.

**Key words:** Chinese characters' Graphics; Visual communication design; Design thinking

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### INTRODUCTION

When we read foreign books and magazines on design, we usually find excellent designs featuring characters. Characters of different styles have appeared not only in character designs in large quantities, but also in the

designs of logos, typography, posters and books as a major element. They play an important role in visual communication design, appearing as letters with simple but profound meaning in logo design, producing great impact as visual characters in poster design and generating beautiful and powerful combination of pictures and characters in typography design.

In China more works have been created in which Chinese characters are treated as a design factor, as current designers focus on nationality and locality. However, many works just copy the so-called traditional factors. Works with an emphasis on the visual effects brought about by calligraphy of well-known penmen, or Chinese ink and hollow-stroked calligraphy, for instance, can be found everywhere in visual communication design. But works that really reflect the essence of Chinese culture and conform with the demands of modern design are still few in number. One of the ways to change the state is for Chinese designers to improve their qualities and taste. And a more effective resolution is to create systematic design theory and explore practical design methods. This paper, therefore, tries to analyze the advantage of the design of Chinese characters' graphics and explore the ideas on the subject, in the hope of obtaining a further understanding of the traditional perception way and creative thinking way of Chinese and making up for the deficiencies of the Chinese art design in design thinking, method and practice.

### 1. ADVANTAGES OF THE DESIGN OF CHINESE CHARACTERS' GRAPHICS

Some designers believe the graphic design featuring Chinese characters has no advantage, compared with that featuring Latin characters. They are not so advantageous as Latin characters in design mainly because Chinese characters do not have remarkable form as Latin letters do. It is easier to use Latin characters to communicate a

simple visual image, because they have simple structures and few strokes, while Chinese characters have complicated structures and many strokes; and besides, Latin characters are more flexible than Chinese characters as the contours of Chinese characters are limited to square while that of Latin characters include square, circle and triangle. This saying is truly reasonable to a certain degree, but it does not necessarily mean Chinese characters do not have any advantage in visual communication at all.

The writer believes the design of Chinese characters' graphics has a great potential and significance. First of all, Chinese characters originate from pictures and belong to pictograph. They are more closely related to graphics than letters, though they have experienced many years of changes and gone far from the original concrete graphics. This constitutes the foundation of graphic Chinese character design in modern visual communication design. Second, after thousands of years of development, Chinese characters have absorbed numerous people's wisdom and labor and integrated the art of calligraphy, typeface as well as the forms and works of numerous character designs. The unique cultural heritage may inspire our designs in a beneficial way and put them in a background of rich culture and long history. Third, the designs mainly featuring Chinese characters are not only easier to be understood and accepted by the Chinese general audience, but can introduce China's long traditional culture to foreign audience as well. All this shows the great advantage and significance of the design of Chinese characters for graphics.

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## 2. CHARACTERS ORIGINATE FROM PICTURES

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The discoveries by cultural relic archeologists and the research results of historians show the world's writing symbols are very similar in appearance and development laws, but they have their own qualities and features as well. Though humanity ancestors scattered all over the world, nor did they have communication tools to exchange information, the characters they use all originate from pictographic writing or pictograph that appeared slightly later.

The development of world's writing history may be divided into three phases, namely, proto-writing phase, classical writing phase and alphabetic writing phase (Zhou, 2009).

### 2.1 Proto-Writing

Proto-writing includes character's embryo bud and the immature characters with different degrees of development.

Characters appeared as symbols and pictures engraved on rocks ten thousand years ago when agriculture started to appear, and they are the embryo of characters. The

earliest characters became mature 5,500 years ago, when agriculture and industry began to develop and the characters of Mesopotamia and Egypt first achieved the degree that language could be recorded completely in the sequence of words. 4,500 years between writing embryo of 10,000 years ago and the earliest characters in 5,500 years ago belong to proto-writing phase.

Characters originate from pictures. Proto-pictures have developed in two directions: They have become either art-drawing or characters. Primitive people use graphics to express their meaning, and these graphics are usually called pictographic writing. However, such graphics have no relationship with language, though they can communicate information. An arrow, for instance, means "going forward from here", and everyone knows that. But when the meaning is expressed in language, it will have various different ways of expression. These graphics can be said to be the forerunner of characters, but they have already become real characters. The graphics that express certain meaning should develop to such a degree that they are combined with a language and can record the language completely. Only at that time can they become effective records of the language and ripe characters.

Many nationalities have created proto-writing. But only few nationalities' writings have become mature. Now it is hard to find the tracks of proto-writing in areas where education is developed. Only in regions where the culture needs to develop further can proto-writing be left. Some of it is still being used or recreated. Remnant writing materials can be found in the aborigines in Africa and America. The historical materials on proto-writing can also be discovered in China's ethnic minorities.

### 2.2 Classical Writing

In 3,500 B.C., Sumer in Mesopotamia (today's Iraq) in western Asia created the earliest characters of the most historical significance. These characters first appeared as pictographic symbols, which developed into cuneiform characters. They are composed of wedge-shaped strokes—one end is thick and the other end is thin—which are written on soft clay board with a small branch. Cuneiform characters had been adopted by many nationalities and used as international writing in western Asia and northern Africa for over 3,000 years.

Hieroglyphics invented by ancient Egyptian living in the Nile valley in northern Africa are slightly later than Sumer characters. They were first hieroglyphs and later turned into characters like strokes of cursive writing. Hieroglyphics had also been used for over 3,000 years and spread to neighboring countries. The symbols used by the writing to express pronunciation become a main source of letters created later.

In eastern Asia, characters were created 2,000 years later than those of western Asia and northern Africa. In 1,300 B.C., inscriptions on bones or tortoise shells, the

ancestors of Chinese characters, were created in Shang Dynasty in China's Huanghe valley. Later Chinese characters spread to China's neighboring countries and were adopted by Vietnam, Korea and Japan.

At the early Christian era, cuneiform writing and hieroglyphics, the two important characters that represent humanity early culture, disappeared one after another. However, Chinese characters have survived and are still used nowadays.

Writing researchers have studied the above-mentioned three categories of classical writing through comparison and found that they are strikingly similar in internal structure in spite of their quite different appearances. They all belong to logogram that expresses both meaning and pronunciation, and the principles on their coinage and usage may be explained with China's traditional six categories of Chinese characters. I will clarify character coinage principles and the six categories of Chinese characters in "coinage principles of Chinese characters" in detail.

### 2.3 Alphabetic Writing

Commerce has been increasingly booming on eastern Mediterranean islands and the coastal areas since the fifteenth century B.C. Semites who lived in then Syria Pakistan on the eastern shore of Mediterranean Sea done business for a living. They invented many "letters", so-called by later generations, by imitating the phonetic symbols in cuneiform writing and hieroglyphics for the convenience of keeping books. Over the past one hundred years, many categories of ancient letters have been discovered in this region, of which the most important discovery is a tombstone made in the 11<sup>th</sup> century before Christ in Byblos on the eastern shore of Mediterranean Sea. The writing on it is made up of 22 letters which are ancestors of most later letters.

There are many hypotheses about the origins of letters. The most well-known one is the hypothesis about Egyptian origin and another important hypothesis says letters originate from Sinai letters. But these hypotheses lack of evidence. In fact, letters, as a completely new invention, have gradually come into being during the long period of exploration. However, there is no doubt that Syria Pakistan had been under the influence of cuneiform writing culture and hieroglyphic culture, as it was located in the corridor area between Mesopotamia and ancient Egypt, to the southeast of it was cuneiform writing culture in Mesopotamia and to the southwest of it hieroglyphic culture in Egypt (Andrew, 1995).

The origins of the above writing display that all characters that have ever existed have been related to pictures. Early pictographic ideographs originate from primitive methods of keeping a record of events (especially carved symbols and pictures), which laid a foundation for pictographic ideographs because such methods add meaning to form. These carved symbols and

pictures have developed into early characters after they become simple, abstract and systematic and carry certain pronunciation and meaning. By tracing the family tree of writing, we will find that the world's most ancient characters all originate from pictures. Even alphabetic writing has various relations with pictures. Now there are hundreds of categories of characters with their own forms. But their origins show most of them have been derived from a few ancient pictographs. With this in mind, we will not wonder why there are so many excellent art and design works at home and abroad which combine characters with graphics to a perfect degree.

## 3. ORIGINS OF CHINESE CHARACTERS

China is one of the countries in the world whose civilization started earliest, and Chinese characters appeared early either. In legends Cang Jie is generally regarded as the inventor of Chinese character. It is said that he was the official historian of the Yellow Emperor or an emperor in ancient times. He was said to "be born with the capability or writing. Due to the inspiration of a river diagram, he understood the changes that happened in the sky and on the land. After observing the stars moving in the sky, the patterns of turtle shells, the feather of birds, as well as mountains, rivers and fingerprints and palm lines, he invented characters. To celebrate his achievements, crops fell from the sky like rain, ghosts yelled at night and dragons hid. The legend that tells how Cang Jie invented characters is hardly believable. Characters should be invented in human's production practice and social interaction. Ancient Chinese had gradually invented characters in the long historical period after the process of keeping records by tying knots, carving pictures and symbols (Lü, 2001).

Writing probably appeared in China in late primitive society. The earliest physical materials related to the origins of Chinese character that have been seen are the symbols and inscriptions on pottery of over six thousand years ago that were discovered in the cultural relics of Banpo, Jiangzhai and Yangshao. These symbols have been believed to have the nature of characters by many writing researchers. There is a pictographic symbol among the pictographic inscriptions on pottery of four or five thousand years ago that have been discovered in the cultural relics of Lingyang River and Dawenkou. The symbol looks like the sun above clouds, and bellow the clouds are five peaks (some regard them as sea water). Some people think this symbol is the character "旦". Some pictographic symbols discovered in Dawenkou culture are very similar to ancient Chinese characters. They should be one category of early primitive writing that has ever been discovered in China.

The earliest characters that can be seen today are those carved on bones, tortoise shells and bronze wares in Shang Dynasty. The characters of Shang Dynasty had

been ripe enough to act as a tool to record language. Characters have been discovered on pottery sherds, jade and bronze wares, but the most important characters are the inscriptions on bones and tortoise shells which are unearthed in the ruins of Yin Dynasty in Anyang, Henan. The inscriptions are so-called oracle records made when the royal family of Yin Dynasty made divination with tortoise shells and animal bones. By now there have been around 150,000 bones and tortoise shells unearthed, on which a total of over 5,000 characters are carved, of which more than 2,000 characters can be recognized now. The recognizable characters show they have been obviously derived from pictures. Some pictures have changed into characters with few strokes and simple structures and from such characters have been derived large number of new characters (Qiu, 1988).

The inscriptions on bones and tortoise shells can be said to be very developed characters, though there are many pictographic characters among them and most of the physical objects that can be drawn are expressed with graphics. However, these inscriptions had gone beyond the picture phase and turned into real characters to record language.

But the inscriptions on bones and tortoise shells do not represent all characters in Shang Dynasty, as some characters in that time are craved on bronze wares, pottery and jade, but they are few in number. The inscriptions on pottery and bronze wares appear earlier than those on bones and tortoise shells, besides, the clan insignia and pictographic inscriptions on some bronze wares carry more primitive elements than the later does.

#### 4. FORMATION OF CHINESE CHARACTERS

The formation principles of Chinese characters had not been summarized until the inscriptions on bones and tortoise shells took shape and were widely applied. They first appear in "The Rites of Zhou" and are completed by Xu Shen of Eastern Han Dynasty. Analytical Dictionary of Characters is the first Chinese dictionary in China which is written by hand by Xu Shen. In this dictionary, he summarizes six principles for the formation of Chinese characters, that is the so-called "six categories of Chinese characters" in ancient China.

The six categories of Chinese characters include self-explanatory characters, pictographs, pictophonetic characters, associative compounds, mutually explanatory characters and phonetic loan characters (Zuo, 2005).

(a) Simple Indicatives—"the general meaning of Simple Indicatives characters can be recognized at a glance and their detailed meaning can be discovered by careful observation. The Chinese characters "上" and "下" are such examples." By this method of coining characters, symbols are used to express abstract ideas. The long horizontal stroke in "上" and "下", for instance,

represents land and sky respectively; and "刃" is composed of "刀" and a point, meaning the sharpest part of a knife.

(b) Pictographs—"pictographs imitate the shape and contour of objects. '日' and '月' are such examples." This category of characters expresses meaning through shapes and contours. "雨", for instance, expresses rain falling from the sky; "牛" imitates the front of an ox head. The formation of these pictographs can help us understand the meaning of a Chinese character.

(c) Pictophonetic characters—"a pictophonetic character is composed of two parts: One part expresses its meaning and another its pronunciation. '江' and '河' are such examples." Chinese characters include many pictophonetic characters, which are coined through mutual explanation and euphony. Many pictophonetic characters related to "水" (water), for instance, may be coined by adding phonetic element to the pictographic element "水", such as "沼", "泽", "浩", "湖", "泗" and "涌".

(d) Associative compounds—"an associative compound combines two or more than two categories of characters and the meaning of the new character is derived from the meanings of the characters that form it. '武' and '信' are such examples." An associative compound is coined by expressing a new meaning with the combined meaning of more than two symbols. It is therefore also called compound pictograph. "寒", for instance, means a person covered with grass is taking shelter from the wind and keeping himself/herself warm in a room whose ground is freeze.

(e) Mutually explanatory characters—"mutually explanatory characters adopt the same radical and can explain the meaning of each other. '考' and '老' are such examples". The purpose of coining mutually explanatory characters is to handle the characters which have multiple meanings by adding to them a component which has a specific meaning. Such component is the radical of a Chinese character. The original meaning of "云" is cloud, but it means "to say" or "to talk" when used as a verb. By putting "雨" on "云", we get "雲", which means cloud, the original meaning of "云". A Chinese character may have a few meanings.

(f) Phonetic loan characters—"a phonetic loan character does not exist at first. Another character with the same pronunciation as it is used to express its meaning. '令' and '长' are such examples." With the progress and development of society, people need more characters to express their complicated thoughts and feelings. Phonetic loan characters therefore appear. Phonetic loan characters are pictographs, self-explanatory characters, associative compounds and pictophonetic characters that have the same pronunciation and are used to express new ideas. "女", which originally means woman, for instance, is used to mean "汝" (you) later, a personal pronoun (Shirakawa, 2000).

With the theory of the six categories of Chinese characters, we could see the close relations between Chinese characters and graphics. Pictographs directly turn graphics into characters. Though these characters are not natural pictures, they can present with simple lines the main features of an object vividly, or imitate the overall shape of an object, or represent the object with a part of it. Self-explanatory characters are coined by adding certain abstract symbols to pictographs, to express complicated objects that can not be imitated with symbols. Associative compounds are the combination of two or more than two symbols. Pictophonetic characters are formed by adding a phonetic radical to a pictographic radical. And mutually explanatory characters and phonetic loan characters are coined by making changes to existing pictographs, self-explanatory characters, associative compounds and pictophonetic characters. All this shows that Chinese characters are based on pictographs and deserves to be called pictographs.

The six categories of Chinese characters proposed by Xu Shen may be not precise, but they a great impact on later generations. Many archaeological materials of modern times are about the research into the radicals of Chinese characters. Good results have been achieved about these researches due to the inspiration of Xu Shen. The classification of the six categories of Chinese characters will greatly help us to study and understand the rich meaning of Chinese characters and apply the knowledge to character design concept.

## 5. THINKING ON THE DESIGN OF CHINESE CHARACTERS' GRAPHICS

### 5.1 Drawing Materials for Design Directly From Chinese Characters

Chinese characters are large in number. *A Sea of Chinese Characters* published in 1994 lists 87,019 characters, while the Chinese character library of Beijing Guoan Consulting Equipment Co., Ltd. that has passed the appraisal of experts contains 91,251 characters whose origins can be found. It is claimed that this library is the most comprehensive collection of Chinese characters in China. But the Chinese characters we use in daily life are 3,000 to 4,000 in the number. Font styles of these characters can be used directly in design.

It takes Chinese characters for thousands of years to change from picture to character. They have absorbed numerous people's wisdom and labor and boasted numerous calligraphic fonts, printing as well as decorating lettering. The unique cultural heritage may inspire our designs in a beneficial way and put them in a background of rich culture and long history. It is an undoubted shortcut to apply the valuable cultural heritage to today's design. This is also the thinking that is used most by China's designers today.

### 5.2 Tracing the Origins of Chinese Characters and Redesigning Them

Chinese characters are based on pictographs and have a close relationship with graphics. We therefore may trace and analyze the graph source of each Chinese character in design and turn a part of a character or the character into a graph. This is the idea underneath the design of Chinese characters' graphics.

After thousands of years of development and evolution, Chinese characters have undergone great changes in form, structure and writing style. While characters gradually become simple and use strokes, their pictographic feature gets less obvious. Especially in the period when the seal character evolved into the official script, many Chinese characters lost their pictographic feature and became symbols that were made up of horizontal stroke, vertical stroke and spot. We therefore need to explore and trace the graph source of each character. Only in this way can we design Chinese characters' graphics that combine form and meaning to a perfect degree.

Though the design of Chinese character's graphics has something in common with pictographs, they are different. Pictographs are vivid summaries of objects' behaviour, and the design of Chinese characters' graphics is the recreation of graphics based on Chinese characters that have developed for thousands of years. This is where their basic difference lies. However, it is no easy thing to trace the graph source of a Chinese character after it has evolved from a concrete graph into an abstract symbol, nor is it easy to recover and recognize its essence concealed by its now standard and unified appearance. It is easy to accept the method. But how to integrate an ancient visual symbol with its modern design element creatively and present it with new appearance in modern times—this is hard to achieve.

### 5.3 Putting Chinese Character Coinage Methods Into Broad Use as a Design Method

The archaeological and philological research results show that the principles of the six categories of Chinese characters are not only applicable to Chinese characters, but applicable to other classical writing. Graphics can transcend language, so can pictographs which are similar to pictures. We can understand the meaning of cuneiform characters that are closely related to graphics, even we do not know the ancient Egyptian. This is of great significance to our modern design. We can draw inspiration from the study of rules on Chinese characters' formation of expressing concrete and abstract ideas with graphics that transcend language. How to use the most characteristic aspect of an object to represent the object by pictographs; how to make people recognize an abstract idea at a glance through self-explanatory characters; and how to combine two concepts to form a new one through associative compounds—all these are subjects deserving research.

Furthermore, we can learn many useful things by studying the changes of Chinese characters' form. The form of Chinese characters has changed from concrete to abstract, from complicated to simple, from various to uniform and from disorderly to standard. They have adopted strokes, have been simplified, assimilated and arranged according to certain sequence and finally have today's appearance. The methods and processes are often followed by us today in visual communication design. We may draw more nutrients if we learn the formation principles of Chinese characters rather than their appearance. At present domestic designers still have a long way to go in this aspect and explorations need to be made about it.

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## CONCLUSION

Through the above research into the origins of the world's writing and the origins and formation of Chinese characters, we may see that the writing in the world, especially Chinese characters, has evolved gradually from graphics. The relationship between Chinese characters and graphics can not be broken, though Chinese characters have experienced many years of changes and gone far from the original concrete graphics. This

constitutes the basis of the design of Chinese characters' graphics.

Now Chinese characters are widely applied in Japan's graphic design, and in Hong Kong, Taiwan and South Korea there are excellent application examples. For Chinese graphic designers, they must use Chinese characters to make designs. They can not avoid the problem. For us—the descendants of the inventors of Chinese characters, it is the historical mission of our designers to develop Chinese character culture.

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