# Research on Pictogram and the Situation of Pictogram Design in China

ZHOU Zhen[a],*

[a]Academy of Fine Arts, Shandong Normal University, Jinan, China.
*Corresponding author.

## Abstract

This paper presents the research on pictogram and the situation of pictogram design in China, for the purpose of developing understandable, systematic and interesting pictograms. It collects and studies the existed definition of pictogram that always referenced and terms related to pictogram, then put forward the author's opinion of pictogram and pictogram design. It discusses the strongpoint and limitation of pictogram, the difference between pictogram and icon, the commonness and efficiency, the globality and locality of pictogram. Then it analyses several unsatisfying points of pictogram design in China and put forward the new pictogram design method which making use of the formative methods of characters to solve the problems.

**Key words:** Pictogram design; Design method; Icon; Mark; Sign

## INTRODUCTION

A pictogram is a type of graphic symbol in which meaning is conveyed through the use of a form expressing its meaning (Yukio, 1993). It was an emerging area of research in the twentieth century.

An early modern example of the extensive use of pictographs may be seen in the map in the London suburban timetables of the London and North Eastern Railway, 1936-1947, designed by George Dow, in which a variety of pictograms was used to indicate facilities available at or near each station. Ever since 1964 when pictograms were used for signs and events in Tokyo Olympics Games under the art director Masaru Katzumie, the effectiveness of pictogram gained a high evaluation and have been used at every venue where people gather from around the world.

Nowadays, all kinds of pictograms have become the indispensable things in the modern life. With the development of international exchanges, the complexities of cities and transportations, and the enlargement of the technological environment, pictograms best promote the intercommunication, thus international pictograms were proposed, most vigorously since the Sixties. Until recently pictograms had become a leading tool in sign design (Katsui & Tanaka, 2000).

Pictograms are also called pictographs. It is preferable to use the term pictogram because –gram refers to "something written or drawn" while –graph mainly refers to "the tool or machine used for writing (or for transmitting records)" (Abdullah & Hübner, 2006). (In Chinese, this term is usually translated into 图标in Chinese character). Therefore in this thesis I use the term pictogram uniformly in English.

## 1. EXISTED DEFINITION OF PICTOGRAM

Concerning the definition of pictogram, there are several viewpoints. Here I select some explanation of pictogram which always referenced in many papers.

a) Otto Neurath (1882-1945), philosopher of science and political economist, was also a European pioneer of information visualization. His system of representing quantitative information via easily interpretable pictograms became crucial for modern data graphics. When developing the ISOTYPE (International System of Typographic Picture Education), he described pictogram as "elements in current system unconditionally"( Katsui & Tanaka, 2000).

b) In Japan, the definition of pictogram is always described as "A pictogram is a type of graphic symbol; it is a symbol which makes people understand its meaning through use of form expressing its meaning." Simply stated, the feature of the pictogram is its "transmission effect which can be understood immediately and internationally without prior study."

The Japanese translation of pictogram is "e-moji" (絵文字, picture word) or "e-kotoba"(絵言葉, picture language). E-moji represents each element, and e-kotoba refers its structural system, that is, the text and the character [1].

c) A pictograph (also called pictogram or pictogramme) is an ideogram that conveys its meaning through its pictorial resemblance to a physical object. Earliest examples of pictographs include ancient or prehistoric drawings or paintings found on rock walls. Pictographs are also used in writing and graphic systems in which the characters are to considerable extent pictorial in appearance (Yukio, 2002).

## 2. TERMS RELATED WITH PICTOGRAM

### 2.1 Mark

The "Mark" mentioned in this thesis includes mainly the symbol mark and the trademark.

The symbol mark is the symbolization-based visual image by which businesses, organizations and social activities can be known. Examples of representative symbol marks are the symbol marks of the United Nations or large multi-industry traders and national flags (Katsui & Tanaka, 2000).

The trademark represented with characters and pictures is the sign which is used by the businessman in order to announce their goods or services (Abdullah & Hübner, 2006).

As the typical graphic symbol, the pictogram is based on the commonness in the multiformity. In contrast, the symbol mark image aims for the unification of the image when directly utilizing the multiformity. The former aims convey meaning and the latter aims to transmit an image.

### 2.2 Icon

An icon is an image depicted by a form in the shape representing the whole or part of a meaningful object. On computer displays, a computer icon (or simply an icon) is a small pictogram. At present, icon is a general term for the small, on-screen, graphic element that represents an application, file or hardware resource. Clicking an icon or touching it with the finger or stylus selects the item that the icon references.

Icon is a free style graphic symbol. Compared with the pictogram, an icon is more easily transformed, combined,

moved, switched or changed in size, giving it the ability to represent a large amount of information including the time (Port, 2000).

### 2.3 Sign

A sign is a stimulus pattern that has a meaning, according to philosopher C. S. Peirce.

There are three kinds of sign: the icon, the index and the symbol. The difference is in how the meaning happens to be attached to (or associated with) the pattern.

● An icon has a physical resemblance between the signal and the meaning.

● An index has a correlation in space and time with its meaning.

● A symbol is an arbitrary pattern that gets its meaning primarily from its mental association with other symbols and only secondarily from its correlation with environmentally relevant properties (Yukio, 2002).

In graphic design, signs such as marks, symbols, signals can convey information that is understood intuitively. Obviously, graphic symbols belong in the domain of signs. Information devices that allow users can easily and successfully implement the visual sign are sign system.

### 2.4 Logotype

A logotype is composed of a symbol or object represented by through the integration of characters. In particular, the names of enterprises and goods should be designed carefully in order to differentiate between competitors. This term comes from the combination of the words "print" and "type" and originally referred to characters. However, now, in the domain of advertising, the mark to reflect the individuation of the enterprises and goods is known as a logotype or logomark (Abdullah & Hübner, 2006).

## 3. THE AUTHOR'S OPINION OF PICTOGRAM AND PICTOGRAM DESIGN

In my opinion, pictogram is a concise visual symbol that conveys its meaning through its form. The essence of pictogram is its graphic nature and its commonness from diversity.

The graphic nature is the same in both the pictogram of ancient character and in modern design. This is the basic grounds of argument of applying formative methods of ancient character on pictogram design of this paper.

All of the ancient script in the world began with pictograms, such as the hieroglyphs of ancient Egypt and the oracle bone script of ancient China. The formative method of hieroglyph which uses concise shapes to depict the form of the object is the same with the methods by which we design a pictogram.

In modern design, pictograms are serving as pictorial, representational signs, instructions, or statistical diagrams. Because of their graphic nature and fairly realistic style, pictograms are perspicuous and easy to understand. As

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[1] Design dictionary (2002), Heibonsha Limited Co., Ltd.

pictogram express the commonness of diversity, they can cover the barriers of language and are widely used to all over the world nowadays.

## 3.1 The strongpoint of pictogram

### 3.1.1 Commonly Acceptance
Since pictogram is a "picture language", it can be easily approached by and understood by those with a low level of educations, from children to the aged. Pictures convey the meaning instant they are seen cross, it is a supplement to the words. Well designed pictogram can cross over language barriers.

### 3.1.2 Direct and Rapid
As pictogram use forms to convey its meaning, there is a direct relationship between the image of the pictogram and its meaning. In the situation of words, even if it is one's mother tongue, translation is necessary between the meaning and the image, and this takes times. In addition, words are time series which expresses things in order while the picture provides information continuously. Thereby, communication through pictogram is direct and rapid than communication through words.

### 3.1.3 Beautiful and Interesting
Compared with characters, pictogram using image is beautiful, interesting and easier to attract people's eye. This will direct to a speedy and effective communication as well as relaxed atmosphere.

## 3.2 The limitations of Pictogram
Though I discussed lots of strong points of pictogram, we should not ignore the limitations of pictogram. Pictogram is supplement of word, but it can not take the place of words.

Some subjects are suitable to be expressed only with words, such as logical and philosophical theories. These subjects are difficult to be expressed by pictograms.

Some items should be better provided with both pictograms and word. As on how to convey information accurately and strictly, word is superior to pictogram. For some important items or dangerous content, both pictograms and words should be provided to avoid misunderstandings. Such as the instruction of the use of medicine, we should be cautious to the design and to the best of our abilities to create easily understandable pictograms. Even though, the pictogram should be used with character together when applied to medicine.

## 3.3 The Difference Between Pictogram and Icon
Along with the development of IT industry, all kinds of icons play great roles in our modern lives. All kinds of icons are used on computers, on mobile phones, on instructions manuals, etc. The needs of the icon become bigger and bigger.

Icon or iconic sign, in the semiotics of the American philosopher C. S. Peirce, a sign that stands for its object mainly by resembling or sharing some features (e.g. shape) with it; such resemblance having a status called iconicity. A photograph or diagram of an object is iconic, but the signs

of language (apart from a few onomatopoeic words) have a merely conventional or arbitrary relation to their objects: In Peirce's terminology, they are not icons but symbols.

Pictogram and icon are same on the aspect that conveys its meaning through its form. Their differences are mainly lie in two aspects.

Firstly, icons are often used in the area of IT industry. As a graphic element, icon always indicates a small, on-screen, graphic element that represents an application, file or hardware resource. Therefore, the design of icon always shows itself by the shape of the object it represented. On the other hand, the use of pictograms has spread to various fields, including guidance at facilities, operation of electric appliances and office equipments, handling of packaged things, safety and disaster prevention.

The other difference between pictogram and icon is that, icon is easier to be presented in animation due to the media it used. Compared with pictogram, it is easier to transform, to combine, to move an icon or to flash it on and off (Abdullah & Hübner,2006). People can also click the icon or touch it with the finger or stylus. With these abundant presenting methods, icon can convey complex information including time.

## 3.4 Commonness and Efficiency of Pictogram
It is very necessary that the pictogram should be understood by people as many as possible－that is, we should in pursuit of the commonness. But though we try our best to pursue that the pictogram we designed should be understood by people allover the world, the commonly understandable things are limited. Those are, for example, eating, drinking and sleeping.

Toward the same object, people may have different impression and imagination during to the difference in the circumstance, culture, level of education, etc. For instance, for the same colour of light blue, people in some country will think it to be cool while others will think it to be warm.

In my opinion, because of the barriers of nation, culture, circumstance, level of education and so on, pictograms understood by people all over the world is a very difficult task. In any case, as an ultimate end, we should do our best to get nearer and nearer to it.

## 3.5 Globality and Locality of Pictogram
There is a trend that globality and locality of pictogram are thought to be conflicted with each other. But, if globality and locality of pictogram are compatible with each other and we can achieve both of them, it is a wonderful thing.

Pictograms in this research, were designed based on the formative methods of Chinese character, Dongba script and Tangut script. So these design methods reflected thoughts and culture of several nations in China. If these pictograms could be used as standardized pictogram in China, the localness of nation and the globality as one China could be achieved together.

It is an ideal result if we can realize the globality and locality of pictogram. Just as in this research, I studied

how to design a set of standardized pictograms which can be used all over China based on the basic element—the scripts of multi- nation culture in China, This approach is a strong point which can realize both the globality and locality of pictogram.

## 4.  THE SITUATION OF PICTOGRAM DESIGN IN CHINA

With over 1.3 billion people (1,330,044,605 as of mid-2008), China is the world's largest and most populous country. The adult illiteracy rate in China is 6.7% until 2005, according to the census. Communication through pictogram should play an important role in a country with such a large population. Nevertheless, the use of pictograms has not yet spread to various fields in China. For instance, guidance at various facilities or instructions for the use of products using Chinese characters only is always seen. It is an urgent task to enrich the application of pictogram to meet the increasing needs nowadays.

Having investigated some pictogram designs in China, I found that several unsatisfying points still remain unaddressed. The main ones are as follows:

1) Conforming standard for the application of pictogram has not been set up yet. Confused and careless use of pictogram is always seen. Lots of pictogram designs are lacking of logicalness or systematicalness.

2) Lots of signs, guidance, and instructions are expressed by Chinese characters merely.

During the development of the Chinese character, it showed a tendency to lose its figurative function while searching for an easier way to write. If we follow the changes in writing style of Chinese character from Oracle Bone Script (甲骨文), Bronze Script (金文), Seal Script(篆書) to Clerical Script (草書), Regular script(隸書) and Cursive script(楷書), this is easy to see. Because the strong points of picture words were eliminated, it is no longer possible to understand the words immediately by just looking at them. Thereby, the signs making uses of Chinese character merely are meaningless to those who can not read Chinese characters, such as illiteracies, children and foreigners.

3) Pictograms imitate Western and Japanese design style and form are of a great many in China now. This lets to two problems:

a) The particular contents in Chinese culture are lucking of corresponding pictogram for them, such as Chinese military art, Chinese opera and Chinese Traditional medicine.

b) Pictograms designed based on other cultuel may not be suitable with Chinese culture. This will lead to a misunderstanding of some pictograms.

4) Pictogram design methods and pictograms with Chinese characteristic have not set up yet. The design style of the pictogram is monotonous, and inflexible images are generally used.

## 5.  THE NEW PICTOGRAM DESIGN METHOD

To solve the above problems in pictogram design, I consider it important to set up a pictogram design method based on the hieroglyphic, pictorial and systematic characteristic of characters. To fulfil this aim, I focus on ancient Asian characters: Chinese characters, Dongba script and Tangut script.

Chinese characters have strong pictographic characteristic before XiaoZhuan (小篆, 14cent.~ 3cent.BC). Pictographic representation is the basis of the formative method of Chinese character. In addition, by using the formative methods of "simple indicative" and "compound indicative", the ideographic and logical characteristic is high.

Dongba script is a typical pictographic writing system and remained strong pictographic characteristic. For it use graphic symbol to represent shape or meaning, its meaning can be surmised easily from the graphic.

Tangut script makes use of the strokes of Chinese character directly as graphic symbol, so it does not have pictographic character. By using the formative methods of "Adding new component" and "replacing some components", the ideographic and logical character is obvious. For the whole writing system was created according to several logical rules and the relationship between characters is close, the Tangut script is a system full of systemic characteristic.

## CONCLUSION

Design methods based on the formative methods of the Chinese character, Dongba script and Tangut script would produce a set of effective design methods with potential applications for pictogram design. It will help to solve the problems of pictogram design in China, such as their lack of logic and unsystematic nature, the fact that it is difficult to use them to communicate complicated meanings, their monotonous design style, etc.. Application of these design thoughts and methods in pictogram design will be a significant and interesting theme for further study.

## REFERENCES

Katsui, M., & Tanaka, I. (2000). *Design dictionary.* Heibonsha Limited CO., Ltd.

Dong, Y. H., & Xhen, Z. G. (2007). *China human rights 2000-2005.* Tuanjie Press.

Gove, P. B. (1993). *Webster's third new international dictionary of the english Language Unabridged.* Merriam-Webster Inc.

Port, R. (2000). *Icon, index and symbol* (long version). Retrieved from http://www.cs.indiana.edu/~port/teach/103/sign.symbol.html

Abdullah, R., & Hübner, R. (2006). *Sign, icon and pictogram.* New BNN Press.

Yukio, O. (1993). *Pictogram design.* Kashiwashobo Co.

Yukio, O. (2002). *Mark dictionary.* Kashiwashobo Co.