

TOWARDS A REFORMATION OF CHINESE IDEOGRAPHS

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Abstract: *Some characteristics of Chinese ideographs are explained, especially their shortcomings are pointed out. In addition, a correlation with symmetries of their shapes and their meanings is elucidated. Some hints for their reformation are given, and an outline to reconstruct a new system of Chinese ideographs are proposed. As the first step a new system of radicals (elements for construction of ideographs) is proposed.*

1 INTRODUCTION

Chinese Ideographs (abbreviated as CI) are the only ones used now in civilized countries. CI have been working as logographs (with both meanings and pronunciations) within the same country or culture, while as ideographs (with meanings only) between different countries or cultures. It is widely accepted that the general trend is a process from pictograph, through ideograph to phonograph. Then, why CI are still used in Eastern Asia?

First, CI functioned as a communication tool among different cultures for more than 2000 years, so that Chinese dynasties could govern that large area. Secondly, CI have an advantage that one can catch their meanings quickly at a glance and read sentences rapidly. Thirdly, many CI have attractive shapes.

The first reasoning above suggests a possibility that if a proper system of ideographs is constructed, it may provide an efficient tool of communication among those countries or regions that lack such tools. This is one of the motivations of the present work.

On the other hand, CI has several shortcomings, for example children are forced to work hard to master complicated CI. This shortcoming led to movements of simplifications of CI in China and Japan in the middle of 20th century. However, both countries took different ways of simplification, while Taiwan and Hong Kong are still using traditional CI. Korea decided in 1948 to use *Hangul* characters (phonograms) in official documents. Thus, we have four different writing systems in Eastern Asia and mutual communication through CI is difficult, in spite of the fact that CI are ideographs.

The purpose of this paper is to explain several features of CI and to propose an outline for reforming CI, so that new CI can be learned easily by anyone in the world. Note that the reformation of Chinese ideographs is once discussed by Japanese linguists (Hashimoto, et al., 1987).

2 RADICALS

Many of CI are constructed by combining elements. A Chinese scholar Xuzhen in Han dynasty edited the first dictionary *Shuowen-jiezi*, in which CI were classified into four categories according to elements included in them, as listed below. Since there seems to be no established names for them, they are given by this author.

- (i) figurative characters (simplification of shape of real object)
- (ii) indicative characters (graphic expressions of concepts; IDC)
- (iii) ideo-combined character (combination of elements with combined meanings)
- (iv) ideo-phono characters (combination of elements, one with meaning and another with pronunciation).

Many of CI now have changed their meanings, and new meanings can not be guessed from their elements owing a long history of usage of CI. In a new system of CI each character should be faithful to original meanings of radicals.

3 IMPORTANT FEATURES OF CI AND HINTS FOR REFORMATION

3.1 Size

Each CI is written with an equal size, mostly within a square space. Therefore, it is easy to identify each character. This property should be preserved in any reformation.

3.2 Symmetry

Many CI have symmetries of several types, such as right-left, up-down, rotation, reflection, and translation. Among CI educated in Japanese schools, about 23% have one or more types of symmetry (Watanabe, 1976). This author tried to find a correlation of the symmetries and other topological properties with meanings of radicals, as shown in the figure in the next page. This nature should be considered in reformation.

3.3 Topological properties

Topological properties are defined for CI, such as number of separate parts (Nele), number of loops (Nloop), number of kinks (Nk), number of end points (Nep). These topological properties of CI seem to be correlated to their meanings.

3.4 Redundancy of radicals and multiple meanings

There are many cases where several radicals have the same meanings (redundancy of radicals). For example, the radicals for “person” and “hand” have many variations. On the other hand, some radicals have more than one meaning (multiple meanings).

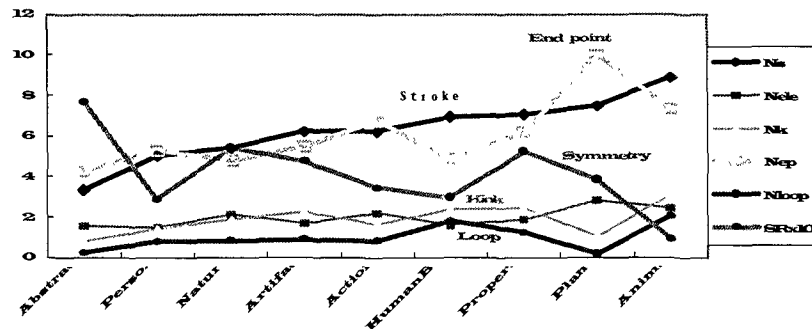
An effective way to make use of the redundancies would be to give different roles to these radicals, such as to indicate abstract concepts, to make verb or to make nouns. The multiple meanings should be allowed to a certain degree.

3.5 Numbers of necessary radicals

We have no definite criterion to decide the number of necessary radicals. When CI were created in ancient China in the 14th century B.C., they did not have some concepts which are important in the present days, such as “paper” (invented in 105 A.D.), “information” and “electricity”. Radicals for important concepts should be newly created, as has been once suggested (Ministry of Culture, 1982).

3.6 Structure of the Chinese language

The Chinese language belongs to the isolated language, and a structure SVO, where S, V, O are the subject, the verb and the object, respectively. In the ideographic communication the order SVO will be the best choice. In languages with structure SVO, it is necessary that one can identify verbs easily, because verbs located between S and O play role to distinguish S and O.



4 THE FIRST STEP OF REFORMATION

The first step would be the reformation of radicals. This work includes following processes:

- (i) Importance of each radical is examined and omitted if not.
- (ii) Some of redundant radicals are omitted.
- (iii) The second meaning of a radical is given to other radicals.
- (iv) Shapes of radicals are simplified if too much complicated.
- (v) Important elements are added to the group of radicals.
- (vi) New radicals should be created, if necessary.

A new list of radicals constructed in this way will be shown in the congress. Reformations of about 2000 ideographs will be undertaken later.

Finally, it is worth noting that a creation of character system is a highly intellectual hobby and could be enjoyed by anyone. This author would like to propose a joint work with people from various cultures.

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