

The possibility on the each-phoneme system of Hangeul through visual perception

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Since the Korean script was published, we have used Hangeul for 557 years. In addition that the way to compose letters as a ligature in the Korean script explain it is gathering phoneme system of an initial sound, the medial of a Korean orthographic syllable and a final consonant. Though we had our own alphabet, scholar, the nobility and high ranking official used Chinese alphabet so that all documents and books were written by Chinese alphabet. Because of use of a writing brush, representative writing material, shape of Hangeul was similar with Chinese shape and it was investigated for not as a field of typography for utility and faculty but as an art. If we look at the court style and the clear style and the margin of Hangeul calligraphy which is used in the Joseon Dynasty period, at Court, we could appreciate the true value. Moreover, line of writing is organized by vertical axis and it is written vertically. Therefore, in contrast to western bookbinding which binds book in the left side, we bind a book in the right side so that line of writing is from top to bottom and read a page from right to left.

As we absorbed western culture and technology, utility and faculty was on the rise so that the way of writing was changed from vertical to horizontal. Among Hangeul scholars, it, writing horizontally, was considered as more functional than others in that utility and physiology so that they began to investigate writing Hangeul horizontally. The change from writing vertically to writing horizontally was innovation and it means the beginning of Hangeul typography. In this wave of innovation, there is a person who insists writing Hangeul horizontally and each-phoneme system of Hangeul together that is Choo Si Kyung. He called himself as 'Han Him Saem' which is pure Korean and he said that 'Hangeul' means 'the letters of Han country' and then he was very passionate to love Hangeul. As he launched <Independence newspaper> with Seo Jae Phil, he began spacing word and he was interested in notational system so that he firstly exhibited horizontal each-phoneme system of Hangeul called as 'acquisition of writing Korean horizontally' in the last part of his book <sound of language>. Since Choo Si Kyung, Kim Doo Bong whose pen name is White Smoke and Choi Hyun Bae whose pen name is Lonley Pine Tree systematized it and Kim Doo Bong materialized horizontal each-phoneme system of Hangeul in <The Deep Pattern of Joseon Language> and Choi Hyun Bae did in <Innovation of Letters>. Writing letter horizontally by Choo Si Kyung, use of spacing word in <Independence Newspaper> and <Hyup Sung Daily> and manufacture of geometrical and simple font have a thread of connection with <Die Neue Typographie> of Jan Tschihold in that improvement for function of letter and making practicable by using Hangeul as a medium.

Change to writing letters horizontally could be considered as ordeals in transition induced by Korean social background and insufficient research and preparation due to absence of concept of design. As 'Bak Moon

Gook' was launched in 1883, modern press was imported and then 'Hansung Sub Bo' was made. However, due to the effect of Japanese manual press, Hangeul window had to be manufactured by the system of Japanese press system. As typography of Hangeul font had to be made in Japanese machine and follow their system so that font should be resembled to Japanese letter naturally. It is not common that unreasonable change of the text of Hangeul and minus word spacing was originated from Japanese ignorance about Hangeul. As computer was developed and digital surrounding was made, font design became easy to be done by individual, development of various font and style of type solved several conventional problems.

In the view of syllabic letter, change from vertical writing to horizontal writing is just modulate the direction of letter arrangement but in the relation of Hangeul phoneme, it causes several problems, low readability and difficulty of interpretation. Line property shaping circle has a horizontal and vertical direction for vowel and in case of consonant, it has a property to expand surface. As we infer from these properties, relation between consonant and vowel follows vertical writing structure. It means that the arrangement order of consonant gives rise to structure of 'line' in vertical writing rather than horizontal writing and in the case of vowel, on the basis of tendency to move vertically and direction it plays a role as a baseline in vertical writing and we verified that it coincided with eye movement. Gathering phoneme system font structure maintains the relation of phoneme which coincides with vertical writing so that if we write horizontally, the system shows complicate structure. On the basis of physiology, horizontal writing has high readability rather than vertical writing however if we transfer phoneme structure like vertical writing to horizontal writing(in case of each-phoneme system of Hangeul) we could expect high readability and interpretation.

Next, we tried to know the relation between simplification of shape and perception and then we tried to suggest the possibility of each-phoneme system of Hangeul by showing that each-phoneme system of Hangeul has easy font and rapid perception rather than gathering phoneme system due to the simplification process of font and structure. Tetragon Korean type confronts with a kind of limitation for Hangeul typography expression. Needless to say, as post-tetragon Korean type was developed, tetragon Korean type became more flexible and it was organized by the standard of module and grid so that it could get balance and it established order but its structure that phoneme gathered forms syllabic letter and sentences was more complicate than each-phoneme system of Hangeul. The each-phoneme system of Hangeul could be considered more simple than gathering phoneme system because direction of eyes reading letters, factor and direction of shape are close. Intensity of stimulus is a inverse ratio to rate of perception and simple perception process makes weak stimulus so that we could expect high perception rate.

This principle reinforces the symbolism of each-phoneme avoiding a syllabic character and extend the range of expression but there is an opinion that its sound is not definite so that it makes people difficult to interpret.

Font of each-phoneme system of Hangeul results in more interpretation than gathering phoneme system. At the same level of letter, as number of factor are diminished, phoneme has a space so that it makes people perceive easily. It is a natural result but it is a strong point that only each-phoneme system of Hangeul has. In addition that as various and miscellaneous expression of Rome Hangeul can be possible to express intensive image like extra bold, black and so on and there is no limit for expression. We could expect that it can be used for sign and billboard because of its high perception and interpretation induced through the process of simplification of shape.

Author approached to the possibility of each-phoneme system of Hangeul from visible perception side however 'Hangeul' representative of our culture is tremendous so that we need to grope for the direction of Hangeul on the basis of various research and experiment. This should be followed to a fixed standard and rate not by a person or a group but by whole nation on the basis of full scale scientific standards.