

A new understanding of the types and notions of writing systems

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1. Introduction

This paper will look at the basics of writing systems and relevant issues. I am going to analyze various descriptions about writing systems mostly in linguistics texts published in Korea, and will make some suggestions based on them. It is my belief that this work can help to better formulate basic theories regarding writing systems.

2. Categories and concepts of writing systems

2.1. Picture writing

2.1.1. Concepts and points of interest

It is not easy to pinpoint when human beings began to write, but it is well-known that the first form of writing system came in pictorial form. Pictures began as visual imitations of objects, and from there, developed into text. Korean linguists are split in terms of whether picture writing can be regarded as a precursor to writing, or whether it is areal form of writing.

- (1) a. Books highlighting the opinion that picture writing is a precursor to writing : <Kc>, <Kb>, <P>
- b. Books highlighting the opinion that picture writing is areal form of writing : <H>, <L>, <Km>, <Ko>

Some linguists argue that if a picture text is universally recognized, it can be considered as distinct from pictures, but others opine that a picture text plays a role that is similar to that of a writing system, but it does not that it is an actual system. Korean dictionaries, which are abbreviated to <D1>, <D2>, count picture text as a real writing system.

- (2) a. A writing system that conveys meaning through pictures <D1>
- b. A writing system from the early era of text formation where pictures or designs acted as a form of communication <D2>

These two stances regarding picture text have long been discussed among linguists outside Korea. Bloomfield argued that “real writing uses a limited number of conventional symbols (283), and that the symbols “bear no fixed relation to linguistic forms,” concluding that picture text cannot be classified as a writing system. Gelb wrote that “they [pictures] do not form part of a conventional system of signs and can be understood only by the man who drew them or by his family and close friends who had heard of the event” Besides them, Coulmas, Sampson, and many others have maintained that a picture writing is not a real writing system.

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On the other side, Diringer calls picture text “the most primitive stage of true writing.” (31) He claims that even though picture text does “not represent speech sounds,” they have “semantic representation.” He goes on to say that stories expressed through picture text are “not the pure representation of an event, but a narrative of the event”; therefore, they are capable of “transmitting thought”.

Whether picture text is something that precedes written text, or whether it can be counted as a writing system could be only a question of definition, and not of great importance. However, those who believe that picture text precedes written text also use the term “writing,” and it can set the grounds for misunderstanding their stance as treating picture text as a type of writing system. This misunderstanding also raises the question of how writing systems should be classified. Hence, it is of more common belief among linguists that picture text cannot be included as a step in the evolution of the writing system, even if picture text can be used to measure a wide variety of texts that directly or indirectly convey a message.

2.1.2. Properties and definitions of writing systems

The first property of writing is visual. If communication done with mouths and ears is taken as a vocal language, communication done with hands and eyes can be counted as a written language. <D1> takes this into consideration when defining a writing system:

- (3) A visual, symbolic system meant for communication among people <D1>

However, if the visual is the only property of a writing system, then picture text and even primitive images from thousands of years ago cannot be discounted as a writing system. Subsequently, a writing system requires a second property in the form of text being “a close substitute of a unit of language” (Bloomfield, 214) or “a standard form that can be recognized by the

community at large” <P, 68>. Of course, what is “a close substitute” or “a standard form” can be a matter of debate. For example, can a picture of sheep be taken as a writing, if the community can recognize it as sheep? Or can the same picture be not a writing, if it is understood differently depending on contexts, like “There is one sheep” or “Let’s hunt and eat sheep”?

We take into account the levels of conception and recognition. In other words, in order for a certain symbol to become a part of a writing system, it must have a sound that is identically perceived by many people, as well as a universal definition understood by all. Some picture texts match this criteria, but there are grounds that prevent them from being considered as a writing system. In other words, “in order for a writing system to be acknowledged as one, there should be a language symbol” (Harris, 315). The following definition will show us how a writing system must be relevant to human language.

- (4) A symbol that allows one to read speech <D2>

Despite its visual properties, picture text and pictures cannot be thought of as a writing system because those who view them vocalize differently, and subsequently it normally leads to different meanings. If agreements can be obtained on “close substitute” or “standard form” as mentioned above, definitions of writing can be better constructed in Korean dictionaries. Let’s take a look at the following examples.

- (5) A standardized symbol system that changes human vocal language into visual signs

2.2. Hieroglyphic writing

2.2.1. Concepts and points of interest

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Hieroglyphic writings have the following variety of definitions held by Korean researchers.

- (6) a. A character that is represented as a picture and refers to one word, or more precisely, one morpheme <H, 312>
- b. Something that emphasizes a material object or a property and is expressed with dots and lines <Kb, 251>, or a text that is adapted from an object <L, 216>
- c. (Egyptian) hieroglyphs <Kj, 294>, <Km, 195-196>, <Ko, 291>

Definition 6a does not distinguish word writings (or logographs) from hieroglyphic writings. Definition 6b is also applied to both hieroglyphic writings and picture writings. In fact, <Kb, 251> classifies hieroglyphic writings and picture writings into the same categories, while <L, 214-216> classifies hieroglyphs as pictographic writings. However, most papers and dictionaries define pictograph and pictographic as “picture writing, ideographs, hieroglyphics,” and it implies that there is no much distinction between them.

Definition 6c shows the usage in foreign literature in which the terms “hieroglyph” or “hieroglyphic writing” indicate only Egyptian writing system. Westerners mostly take hieroglyphs for pictographs due to this definition. Subsequently, there is a need to discern the context of the term “hierograph” and other similar terms, especially between the Egyptian hieroglyphs and general hieroglyphs.

The uncertainties seen in Definitions 6a and 6b are definitions found in the Korean dictionaries.

- (7) a. A writing system that has developed from picture writing based on an object to word writing and has a limited relation to the original picture text <D1>
- b. Something that has its roots in pictures or ideographs <D2>

Definition 7a places more emphasis on its development instead of hieroglyphic writing itself, and the parts that mention “picture writing based on an object” or “limited relation to the original picture text” are not easy to define. Definition 7b does not show how to distinguish hieroglyphic writings from picture texts or ideographs.

2.2.2. Principles of a writing system

‘Hieroglyphic writing’ or hieroglyph (‘likeness of shape’) is not part of the developmental process of a writing system, and neither of them can represent specific types of writings. Instead of taking hieroglyph as something that was used in a certain time period or a developed writing system, it should be taken as the principle of a writing system. Namely, hieroglyphic writings are based on likeness of shape, not a writing system used in a certain era.

Pictures, picture writings, and early-stage word writings adopt likeness of images. Some of the earliest alphabets, including Sumerian characters from 3100 BC, Egyptian writing systems from 3000 BC and Chinese characters from 1500 BC, have developed in different places around the world, but one thing in common is that they are all made on likeness with objects. 600 characters of the Chinese characters were modelled on likeness of shape, and within the Korean alphabet, 5 consonants and 3 vowels are widely known to have hieroglyphic properties. In this vein, ‘hieroglyphic’ should be taken separately from ideographs, logographs and picture writing. The so-called emoticons used widely today are one typical example based on hieroglyphic properties.

The concept known as “Liu Shu(六書)” and the “six writing styles” in Chinese characters are not limited to derivatives of Chinese characters. Once characters that are classified as “xiang xing(象形),” or pictographs and the “zhi shi(指事),” or indicatives and ideograms get definite meanings, they become “zhuan zhu(轉注),” or mutual explanatories, characters that can be expressed through comparison. When the aforementioned characters’ definitions are all taken into account, the end result is a “hui yi(會意),” or a combined ideogram.

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Moreover, there are “jia jie(假借)” or phonetic-semantic compounds that are formed from homonyms. “Xing sheng(形聲)” are phonetic-semantic compounds where the characters of a word have both semantic meaning and a sound.

2.3. Ideographs

2.3.1. Concepts and points of interest

Different researchers have different definitions of ideographs.

- (8) a. A visual symbol that is a simplification of picture writing and a representation of not just tangible objects, but also concepts related to that object <Kj, 291-293>, <Km, 188>
b. Hieroglyphic writings have evolved to ideographs. If a symbol that shares a likeness to the sun becomes 日, it is an ideograph. <Kb, 251>
c. A symbol that has meaning <L, 219>
d. Something that represents an object or an action with image <P, 74>
e. A picture of the sun that means “sun” is a picture writing, but it is an ideograph that represents “daytime, warmth, light, heat.” Moreover, if the meaning of an icon sign cannot be expressed in a single word, but in a phrase or sentence, the sign is an ideograph ... Ideographs are not writing ... A symbol must have its definition that should be longer than a word. Chinese characters are not ideographs. <Ko, 288-299>

According to Definition 8a, ideographs have two properties. First, a simplification of an image weakens its resemblance to the object that the image represents. Writings made based on the likeness of something have their strokes simplified, eventually coming to a point where the writings are not “drawn” but “written.” If the image is simplified, the resemblance begins to wane. However, even if the form disappears, that writing system can still be used. Definition 8b mentions the similar aspects of this property. Second, there are representations of abstract concepts, like how a symbol that represents

“sun” can mean “light, heat, day.” Definitions 8c and 8e also place focus on the criteria of description.

However, Definition 8d is related to the concepts of ‘likeness of shape’, and the latter part of Definition 8e (“in a phrase or sentence, the sign is an ideograph”) is not differentiated from the property of a picture writing, thereby creating possibilities for confusion. This observation suggests that the difference of a picture text, a hieroglyphic writing, and an ideograph is arbitrary. In this respect, Diringer is right when he says that “simple ideographs are nearly the same in many primitive scripts.”

The definitions of Korean dictionaries are hardly different from those brought up by the aforementioned linguists.

- (9) a. A writing system where each character presents a fixed definition regardless of the sound; having roots in hieroglyphic writing or ancient picture text, Chinese characters are prime examples of this <D1>
- b. A writing system where each character is a pictorial representation of an object; examples include picture text, hieroglyphic writings, and Chinese characters <D2>

Western researchers have rejected ideographs as a writing system. Bloomfield claimed that word writings were mistaken for ideograms, and Gelb and Sampson also suggested not using ideographs at all.

2.3.2. The duality of text and language

The first property of ideographs, the simplification of shapes, can be applied to any kind of writing systems, thereby not making this property unique to ideographs. The second property, abstract concepts, is analogous to “*zhuan zhu*,” or mutual explanatories. The shapes of the symbols and their meanings only have indirect relationships, and this is very commonly witnessed in the development of a writing system. For example, a picture of a barley grain may represent a farm, while a picture of a mountain may represent a guard,

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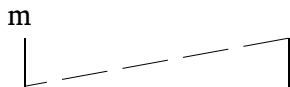
unfamiliar land, foreign nation, or foreigner or a picture of a lion may mean “strength, bravery, carnage, horror, tyranny.” To sum up, the properties of ideographs do not capture the points of ideographs.

Moreover, it is impossible to say that there is no relation between ideographs and sounds. Let's take some of the most well-known ideographic Chinese characters. The characters 江 and 山 have the same meanings in Korea, Japan, and China, where Chinese characters have been widely used, but these characters have different pronunciations in the three countries. In Korea, they are read respectively as “강(gang)” and “산(san),” while in China, as jiāng and shān, and in Japan, as こう(kō) and さん(san). The speakers generate a connection between the characters and the sounds. This observation is also come across in other books published in Korea.

- (10) a. Chinese characters do not present the meanings only, but the combination of *signifié* and *signifiant* ... As they are characters, close relation to *signifiant* exists. <H, 315>
- b. There is a phonetic value ... and between sound and meaning, meaning holds more significance ... Chinese characters place emphasis on meaning. <L, 219-220>

Just like hieroglyphic writings, ideographs cannot be counted as a step in the process of the development of writing systems. The two fundamental components of human language are sound and meaning. Differentiating phonograms from ideographs shows which component of language is recognized first through text's visual properties. If only the aural properties are identified through a writing, then the writing system is a phonogram, and if both meaning and sound are identified, then the writing is an ideograph.

phonogram ideograph



sound meaning

Ideographs have a relationship with meanings first and foremost, and then with sound. Phonograms are tied to sound only. In other words, ideographs hold the information of meaning and sound, while phonograms do not hold the information of meaning. In this respect, pictographs are not the thing which pictures or hieroglyphic writings have changed to, and if pictures, hieroglyphs, numbers, or mathematical symbols of operation are explicitly visible from the outside, then these can be considered as ideographs. This means that ideograms can have many properties, and we do without ideographs.

Moreover, ideographs cannot be properties of certain writing systems. Let's take Chinese characters for an example. Assuming each of the roughly 50 Japanese sounds are represented by a unique Chinese character, these 50 characters become not ideographs but phonographs in the Japanese language.

2.4. Logographs or Word writing

2.4.1. Concepts and points of interest

Logographs are very important in the development of writing systems, and there can be few points up for contention in that regard. One of them may have to do with the relation between logographs and ideographs.

(11)a. Related to ideographs <H, 315-317>

b. Combination of picture writings and ideographs <Kj, 291-293>

c. Related to hieroglyphic writings (picture writings) and ideographs <Kb, 251>

d. Identical to ideographs <L, 219>, <Km, 188>

As for the four statements made above, differences in expression are noticed, but they commonly connect logographs with ideographs. However, as seen before, interests lie in how ideographs reflect meaning and sound, the two

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2.4.2. Establishment of terminologies

Logographs and word writings are used in this conception.

- (12)a. logograph cf. ideogram <H, 315>, <Kj, 293>, <Kb, 251>, <Km, 188>, <Ko, 289>
- b. word writing cf. logographic writing, ideographic writing <L, 214>

Logographs usually include numbers, signs of mathematical operation, %, and \$. However, there is a need to differentiate icons like numbers and signs of operation from characters like Chinese characters, because logographs, like Chinese characters, feature individual words from each symbol, and establish relationships between units of language.

Western linguists establish more precise meanings by using such phrases as “word sign” or “word writing,” but they use “logograph” or “logography” to indicate a more general focus. In western literature, iconic symbols and Chinese characters are all considered as logographs. This attitude comes from the mindset that each individual Chinese character has its own meaning, as numbers or mathematical symbols of operation do. However, in English dictionaries, logographs are often defined to have similarities with symbols.

2.5. New understandings of different categories of writing systems

Until now, we have looked at the various definitions that relate to picture writing, hieroglyphic writings, ideographs, and logographs. All of these writing systems are defined in various books as similar, yet different from one another. These varied definitions have been made possible, as linguists have seen a

variety of types of writing systems at once without properly classifying them. I would like to suggest provisionally classifying writing systems, as follows:

- (13) a. Categories based on linguistic factors: ideographs, phonograms
- b. Categories based on generative principles: hieroglyphic writings, phonetic ideographs, etc.
- c. Categories based on elements of language: word writings, syllabic writings, phonemic writing, etc.
- d. Categories based on pronounceable units of language: word-syllabograph, consonant-syllabograph, etc.
- e. Genealogical categories: Egypt writing, cuneiforms, Chinese characters, Katakana, Hangul, etc.

2.5.1. Categories based on linguistic factors

Ideographs are types where individual characters have their own meanings. Pictures and knots, used prior to writing systems, also have ideographic properties. Writing systems based on hieroglyphic properties have the most ideographic properties, and writings made based on *zhi shi*, *zhuan zhu*, and *hui yi* also have similar properties. All ideographs are not word writings, but the word writings known so far count as ideographs. Moreover, all ideographs are not hieroglyphic writings, but all hieroglyphic writings are ideographs.

Phonograms are a writing system that directly indicates a unique sound. Writing systems based on *xing sheng* or *jia jie* have phonogram-like tendencies. Syllabograms, phonemic characters, and featural alphabets are all phonograms.

2.5.2. Categories based on generative principles

This category applies when word writings expand. Human language has two principal factors, sound and meaning, and writing systems are categorized based on whether they are generated with the sound being the primary factor, or the meaning being the primary factor.

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Principles that prioritize meanings in making a writing system consist of *xiang xing* (which tends to feature resemblances to objects), *zhi shi* (or resemblances to an object's location or number), *zhuan zhu* (which expands the meaning of one character), and *hui yi* (compounds of two or more meanings). These principles utilize ideographic properties.

Furthermore, principles that prioritize sounds in making a writing system consist of *xing sheng* (compounds of a phonetic element and a semantic element) and *jia jie* (borrowing the same or similar sounds). These principles utilize phonographic properties.

2.5.3. Categories based on elements of language

The elements of human language consist of sentences, clauses, words, morphemes, syllables and phonemes, and writing systems that take the forms of words, syllables and phonemes have developed.

Word writing is a writing system where one sign represents one word. Early Chinese characters, Egyptian hieroglyphics, and cuneiform are all word writings. Not all word writings have hieroglyphic properties, but there are many characters with hieroglyphic properties.

Syllabic writing is a writing system where each sign represents a syllable. The Japanese katakana characters and Korean Gugyeol (口訣) are examples of syllabic writings.

Phonemic writing is a writings system where one sign has one sound, and it differentiates consonants from vowels.

The following writing systems fall under this category.

An abjad is a writing system where each symbol represents a consonant. It differs from phonemic writing, in that there are no symbols that represent vowels, so anyone who reads materials written with an abjad writing system has to deduce within the context where to insert vowels.

An abugida is a writing system where consonant-vowel symbols are portrayed as individual units.

2.5.4. Categories based on pronounceable units of language

Readers of writing systems like an abjad have made pronunciations by the syllable, regardless of the unit of language and the roles that these units may have played. The following labels summarize this observation.

(14) Word-syllabograph, consonant-syllabograph

I would like to use Chinese characters, the most well-known word writing system, to explain word-syllabograph, etc. The Chinese character 山 was made according to the rule of ‘likeness of shape.’ This character has a closer relationship with meaning than with sound, so it may be counted as ideograph. This single character is equivalent to a word in the Chinese language and counts as word writing. This character sounds “san,” a single syllable, making it synchronic and also making it an example of word-syllabogram.

However, Chinese characters do not always have word-syllabogram properties. We may take the word 東西 (dongxi), which can mean “goods, food”. The character 東 has hieroglyphic tendencies, and has a greater emphasis on meaning than on sound. This character alone cannot convey the meaning “goods, food”, and it only acts as the first syllable of the word. Reading out the first character will simply sound like a syllable, dōng.

3. Conclusion

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Discussion: New Understanding of the Types and Notions of Writing Systems

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In this paper, the writer analyses type and notion of writing systems in most of linguistics texts published in Korea. Through this paper, I expect that we can solve the problems about the existing category of writing systems. Moreover, this can help formulate basic theories regarding writing systems and contribute to promote study on writing systems, I think.

1. I totally agree with the writer's analyzation; frist, to exclude picture writing from a writing system by presenting properties and definition of picture writing and to describe it as a form 'picture sign' clarifying the definition of writing system. Extracting the definition of writing in this paper, writing system is "a standardized symbol system that changes human vocal language to visual signs((5))." However, this definition of writing and notion of 'logogram' contradict each other. Generally, logogram(word writing) includes 'numbers, signs of mathematical operation, %, \$', for example, the number '1' can be read *il* or *hana* in Korean. The writer said this kind of symbol as an 'icon', I wonder this 'icon' is included in writing.

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For reference, the <table-1> below is category of sign by Peirce, shows the category of sign I think. That is, sign includes writing, and writing is symbolic sign.

< table-1 > category of Sing

	category	distinction	example
sign	index	· natual sign · based on relationship	like dark clouds means rain, it is kind of 'signal'
	icon	· artificial sign · based on similarty	pictogram (picture sign at instruction manual), logogram?
	symbol	· artificial sign but different from icon, prerequisite to social promise · based on arbitrariness	writing, logogram?

2. Finally, it is not directly related to this paper but as the extended to first question, I want to hear writer's views on 'sign(*giho* 記號)' for the general establishment of writing systems. In the Korean Standard Dictionary published by the National Institute of the Korean Language, sign(*giho* 記號) is "word used throughout to indicate any meaning like mark(*buho* 符號), writing(*munja* 文字), sign(*pyoji* 標識)" and similar to as symbol. I want to know what does the writer think of this. My simple question for this is as follows:

2-1. sign(*giho* 記號) is similar to symbol?

Is symbol included in sign(*giho* 記號)? or Is sign(*giho* 記號) included in symbol?

2-2. How can you differentiate mark(*buho* 符號), writing(*munja* 文字), sign(*pyoji* 標識)? Can you relate those three in relation to the category of sign(*giho* 記號) by Peirce? When we translate Korean ‘sign(*giho* 記號)’ of the Korean Standard Dictionary in English, what kind of a term we can use for mark(*buho*), writing(*munja*), sign(*pyoji*)(especially, sign(*giho* 記號)), mark(*buho*), sign(*pyoji*) all can be translated in ‘sign’ in korean-English Dictionary)?