

Spelling spells.

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1. Letters in the world

1. 1. Compared with the number of languages, there is a limited number of writing systems. Furthermore, while it is sometimes impossible to differentiate a language from a dialect, it is much easier to differentiate writing systems. A writing system is handed down very systematically and very consciously, so it is stabler than a phonological system of a language, which is the mother of the writing system. Thus the study of development and relationship of writing systems is very advanced. The following list shows an outline of the relationship of writing systems. (Jean 1987, pp.136-137. Gelb 1963, pp.x-xi.)

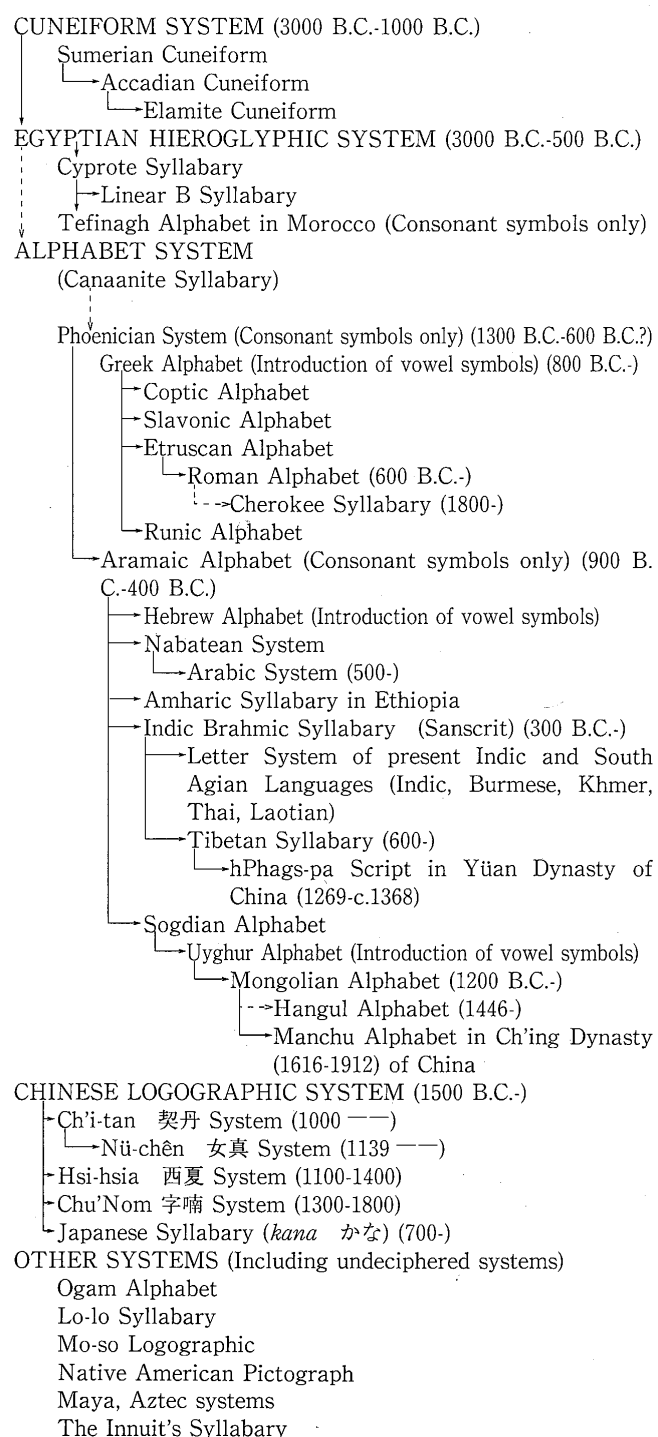
The oldest writing system is the Sumerian cuneiform system. This system developed from a pictographic stage, and during one thousand years it developed very systematically and became a logographic-syllabary system. Very interestingly the way of the formation of new letters is very similar to the Chinese one. All the Chinese six formation systems of letters (*liu-shu* 六書) can be seen there. Each letter consists of vertical, horizontal, and diagonal lines and points. This is also very similar to the Chinese system.

The cuneiform system had great influence in the Oriental world, which was the only civilized area in the 2nd and 3rd millennium before Christ was born.

Even after the fall of the Sumerian 3rd Dynasty of Ur (about 2000 B. C.) and that of the Sumerian language, it had been used all over the Orient and in the Amarna Age (the 15-13th c. B. C.). It became a common writing system there. Thus various kinds of languages were written in the cuneiform system: Akkadian (Semite), Anatolian, Persian (IE languages). In Akkadian the use of the cuneiforms was perhaps very similar to the present Japanese logographic-syllabary system. The cuneiform system was used alphabetically in the Ugarit (Semite) and the Persian languages.

The beautiful Egyptian Hieroglyphic system developed soon after the cuneiform system appeared. Though the cuneiform system had developed very slowly through various stages from a pictographic one, the Egyptian system appeared as a complete system; it had few developing stages. This means the ancient Egyptians did not invent their writing system by themselves but that they learned the structure of the cuneiform system. They made only the form of the letters by themselves according to the phonetic value of their language. This system stopped to be read about after Christ died and Coptic Christianity was spread in this area. The story of the decipherment by Jean François Champollion is too famous. The Tifinagh system in Morocco is still used though in very restricted areas to write a Hamito-Semitic language, Berber.

Writing systems in the world and their relationships



→ : direct influence

---> : indirect influence

Years in the parantheses at the end of the name of each writing system means the period during which the writing system had been used. Most of them are approximate but some of them have a precise beginning year.

(--) means the writing system had died out but the present writer cannot identify the time.

(-) means the writing system is still valid.

The Egyptian system influenced some systems in the Eastern Mediterranean Sea, and used even for a Greek dialect (Linear B) but the more complicated syllabic structure of the European languages of the IE language family required more symbols to show their language correctly. The Alphabet, the one-symbol-for-one-sound system, was originally devised by the Semitic Phoenecian people. However in the Semitic languages vowels are not so important. Vowels can be inferred morphologically (cf. Arabic *kitaab* n. 'book', *katabu* v. 'he writes') like stress in some English words ('input n., in'put v.), so they did not devise vowel symbols. The Phoenicians' active trade in the Mediterranean Sea after about 1200 years B.C. stimulated the following conquerors of the Sea, the Greeks, and they adopted the Phoenician system. However, the Greeks diverted some symbols which did not have the value in the Greek language to vowel symbols and made some new symbols for the sounds which were not in Phoenician. This was the completion of the alphabet system as we know it today.

The Greek system was handed down to Rome through the non-IE Etruscan people who were the former inhabitants of Rome. The Roman alphabet was spread in Western Europe and with the development of Western Europe it became the most influential writing system today. Languages spoken in the European colonies which did not have a writing system came to be written in the Roman alphabet. Some languages changed their system to the Roman alphabet system (Turkish and Indonesian, both from the Arabic system). Furthermore a lot of languages are written in the Roman alphabet, too, besides their original writing system. This is because the alphabet, Roman or Slavonic or any other system, is the most suitable system to show the phonetic outline of the

language.

The Cherokee syllabary is a new system devised by a half native American man named Sikwâyi (Sequoyah). Today a great number of books and newspapers are published in this writing system in the Cherokee nation. It consists of eighty-five signs. The formal basis of them is the Latin alphabet, but their values are almost completely different from it. When the idea of a new writing system came to him, he began to make a logographic one but soon realized that that was too troublesome. Then he made a one-symbol-for-one-sound system. For the Cherokee people one sound means one syllable as well as for other native American peoples and Japanese, so the system became a syllabary system. As well as the Cherokee system most of other less prevailing new writing systems for native Americans are syllabary systems. This is not because they are primitive and cannot analyze their sound but for them a syllabary system is more convenient. For languages which have a limited number of syllables, it is much easier to identify one letter among, for example, eighty different letters than one complex of letters among eighty possible complexes of letters. Moreover as written above one complex of sounds which appears always at the same time is one sound for the speakers of this kind of language. Japanese is undoubtedly this type of language. This is different from a language which has many kinds of syllables; English, for example, has more than two hundred syllables.

The Aramic alphabet is the other big branch that derived from the Phoenician system. It influenced the Oriental writing systems through their trade. Many of the widely used writing systems of today derive from it: the Hebrew alphabet, which introduced vowel symbols, the Arabic Script, Indic Divanagari, and other Tungusic scripts around China.

The Arabic script, one of the five most influential

writing systems in the present world, is derived from the Aramic system through the West Semitic Nabatean system. This script is well known as the script of the Islamic bible, Koran. Koran is expected to be read most correctly, so the Arabic script has vowel signs, but these are used only diacritically. This is enough for the Arabic language, which belongs to the Semitic language family. However, non-Semitic languages, Persian, Urdu in Pakistan, Dali, all belonging to IE, are written in this script. Turkish and Indonesian, which had been written in the Arabic script but not Semitic, are recently written in the other script, the Roman alphabet. One reason is the Western influence on these languages and the other reason is that the Roman alphabet is more convenient to show vowel sounds because in non-Semitic languages vowels cannot be inferred morphologically and both consonants and vowels are equally important to decide the phonological form of a word.

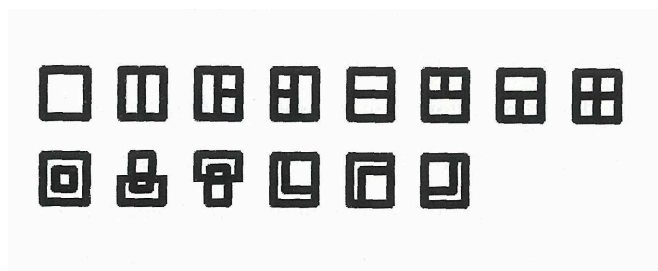
Ancient Indic Brāhmīc syllabary influenced the decorative southeastern writing systems in India (the Devanagari script is the most famous one), Myanmar (=Burma), Kamputia, Thai, Laos without any relevance to their language families. In this system a letter is syllabic but the vowel is always [a]; addition of a kind of diacritic symbol makes the letter a syllabic letter with the other vowel's value. Like the Arabic and the Mongolian scripts each letter has three variants and the choice of variants depends on the position of the letter: beginning, middle, or end of a word. A word is always connected with a horizontal line above letters. The connected form of letters shows skillfully the sandhi (connected speech or liaison) form of a word.

The connection from the Sogdian alphabet used in Central Asia to the Manchu alphabet in China shows the active trade in this area on the Silk Road. According to the report by the German Expedition (1900-7,

1904-14) there had been seventeen languages and twenty-four writing systems there (Haneda, *et. al.* p. 95). The Mongolian alphabet was established by the Mongolian conqueror Genghis Khan (1162?-1227). His ultimate purpose of the conquest was to activate the trade in the Central Asia, so he made a new writing system of his own instead of the Uyghur alphabet used by a Turkish people, Uyghur.

Hangul is a unique alphabet. This system was established in 1446 by Se-jong, a king of Ril-tsi Jo-son of Korea (1392-1910), a comparatively new device. Though this system is a very original one, influence from the Mongolian alphabet on its vowel symbols is evident. The forms of the letters for consonants symbolize the places of articulation; for example, <ㄱ> symbolizes the retroflexed tongue, so its value is [l] or [r] , (The Korean language like other Tungusian languages does not distinguish two kinds of retroflexed consonants.) and <ㅋ> symbolize the velar articulation and since there is no distinction between voiced and voiceless consonants in Korean, its value is [k] or [g] . These letters are constructed two-dimensionally and each structure can show syllable division or morphological division; influence from the Chinese letter structure is obvious here.

The Chinese system is famous as a typical logographic writing system and has influenced the neighboring countries on inventing a new writing system. Chinese 'logographic system' does not mean each letter is completely different. Each letter is constructed from two-dimensionally arranged parts. Typical dispositions are as follows:



In each square, where it is irrelevant whether it is a square or rectangle, a structure with vertical, horizontal, diagonal, and curved lines and points are put. We can identify the structure with the number (in most cases 0-3) and direction of the lines plus the number and disposition of squares enclosed with the vertical and horizontal lines plus the disposition of points. Each letter consists of at the most four of such structures. In the structures on the second line, the squares under or on the non-square part are also divided into at the most four. A letter is identified by analyzing how each part is put together two-dimensionally.

A part of the structure (left, upper, or L-form part) designates the category of the word: 'human', 'divine' (or 'ceremonial'), 'terrestrial', and so on. The number of these categorical symbols is about one hundred and eighty. The other part usually denotes the pronunciation only. As we mentioned above the Sumerian cuneiform and the Egyptian hieroglyphic systems had also such categorical symbols. These categorical symbols are very useful to distinguish homonyms and to grasp a rough semantic content of a letter. The number of so-called pictographic letters is not big and there is considerable similarity between the Chinese pictographic letters and the pictographic stage of the cuneiforms. These letters may be identified easily by most human beings in the world with brief explanation.

The Chinese letter system has been playing an important role in the history of this country. The Chinese (Mandarin) phonological structure is rather simple; $C_0^1 V \{4 \text{ tones}\} ([n, \eta])$ (zero or one consonant plus vowel with or without a nasal consonant , and each vowel has four tonal variants). Furthermore, its unique one-syllable-for-one-word structure makes many homonyms. The categorical symbols effectively reduce the ambiguity of a document.

Another advantage of the Chinese writing system

is its universality in the Chinese world. As the famous Swedish Sinological scholar Karlgren put properly, 'the Chinese writing system is a common language for the eye' (translation by the present writer) (H i g o u n e t , p.40). The Chinese language has of course a lot of dialects, but the difference of each dialect is equivalent to the difference of the European languages. The complete difference of these dialects usually makes their conversation impossible, but if they put it into letters they can understand each other more easily however the value of a letter is different. Here the value of the letters is irrelevant, rather they communicate only by the content of the letters. Even the Japanese, who use a great number of Chinese letters, can understand the content of the Chinese document to some extent though their language is completely different from Chinese. Furthermore this system can be proof against the chronological sound change. Though some foreign dynasties invented some new writing systems of their own as mentioned above, the Chinese (*Han*) system survived with other Chinese cultures so the content of even very old documents can be understood without any reference to the phonetic value.

Of course to cope with the continuous phonological change a device called *fan-ch'ieh* 反切 was invented in the beginning of the T'ang Dynasty (618-907). Each syllable is divided into two: onset (initial consonant) and rhyme (the following part of it, which contain a tonal vowel). The value of a letter is manifested with a letter whose onset consonant coincides plus another letter whose rhyme coincides.

Abbreviation or simplified deformation of a Chinese letter which had a similar value to a Japanese syllable made a Japanese syllabic letter. There are two kinds of syllabary in Japanese: *hiragana* <*hirakana*, and *katakana*. As an agglutinative language

Japanese has many affixes to express the grammatical relationship of words. These affixes are written in *hiragana*. Loanwords from foreign countries except China and onomatopoeic words are written in *katakana*. Loanwords from Chinese are always written in Chinese characters, which the Japanese call *kanji* ('*Han's* letter') Though in Japanese there are so many loanwords from Chinese and most of them become indispensable, the Japanese people still distinguish them by writing in Chinese letters. Native content words are also written in Chinese letters. Thus the distinctions between form words and content words, between Chinese loanwords and other words, and between onomatopoeic words and other words are clear to the eye.

There is a very unique use of Chinese letters in Japan. The Japanese language contains many Chinese loanwords as mentioned above. They are used with original value and content, though of course the value is changed through some phonological processes to adopt to the Japanese phonological system. However, the Japanese people also use the Chinese letter ignoring the value, i.e. according to the content of a letter its value is changed into native form. A semantic translation takes place here. If the content of a letter (here take note again that one Chinese letter means one word) is nominal, it is translated into Japanese and its value becomes a Japanese native (translated) form. If the content of a letter (=a word) is verbal or adjectival, the Chinese letter is used for the base of the word, and for the agglutinating part syllabic letters are used and as a whole their value is a Japanese one. This translated use of Chinese letters is very useful. The native Japanese syllabic structure is very simple: C_0^1V ([T, N]). All syllables are open; [T] means a kind of closure by assimilation to the following stop and [N] means a nasal sound but this comes from [n] + [V] , so they were originally open syllables. This

simple syllabic structure makes Japanese a language containing many homonymic words but they are distinguished by pitch or in some dialects by tone. However, the Japanese writing system does not have a sign for pitch or tone so they become homonyms when written in syllabary only. Here distinction with the Chinese letters is very effective to avoid ambiguity of the document.

Such use of a foreign writing system, in other words a semantic use of a spelling, is found in Middle Persia, where the Aramic language written in the Aramic writing system was read in Persian, and the ancient Akkadian world, too. However, in the Akkadian case the original Sumerian was an agglutinating language but Akkadian is an internally inflecting language, so we cannot identify the phonetic value of the cuneiforms. However, it is true that they used cuneiforms sometimes as logographs and sometimes as syllabary.

1. 2. The types of language and the types of writing system are irrelevant, as we have seen above. Which writing system a language chooses is mainly dependent on the cultural influence on and identity of the community of the language: application of the Roman alphabet in Turkish, Indonesian, Vietnamese, German (from the Gothic alphabet), and languages of former European colonies. Persian, an IE language, was written in cuneiform, then the Avestan script (Pahlavi) used in Zoroastrianism, and now is written in the Arabic script. From 1994 the Mongolian language, which has been written in the Russian Cyrillic alphabet for about fifty years, is written officially in the traditional Mongolian script by law. This shows a cultural identity of the Mongolian people.

Although the Roman alphabet is applied to almost any language in the present world, a writing system applied to a community of a language can adequately

show the language. In a community which has a traditional and original writing system the Roman alphabet scarcely disperses the original and traditional writing system. Chinese, which has many homonyms, cannot be clearly written in alphabet only. All of the following Chinese letters have the same pronunciation, [zhī]: 支, 肢, 枝, 跂). This is indicated with 支). To which categories a word pronounced [zhī] belongs is indicated with the left symbols: 支, 月, 木, 足). The Chinese writing system is very effective to avoid the ambiguity of written documents. Japanese has also many homonyms because of the simple syllabic structure so the Chinese system is very useful. Furthermore, because most one syllable means one sound for the Japanese people, the syllabary system is very convenient and suitable for their linguistic instinct. Other writing systems cannot easily take place of the logographic-syllabary system of Japanese.

If foreign sounds come in with foreign words, a phonetic use of letters appears in the logographic or syllabary system; 可口可乐 (=楽) 'Coca-Cola' [kōu k ě k ě lè] is a famous example. Japanese *kana* syllabary has alphabetical expressions like たい [ti:] ; the value of たい is [te], and the small たい is [i], so this combination of letters shows the first letter has consonantal value only. (The last ー shows that the vowel is long.) An alphabetical use of Japanese syllabary has also been used by the Ainu people in Japan. The structure of their language is completely different from Japanese and has various kinds of closed syllables. They use a small letter to show that it has a consonantal value only. For example, the word which means 'field' is [nup] and is written as ヌッ, where ヌ has the value of [nu], and プ [pu] in the Japanese syllabary system, but the small っ put below shows that it has consonantal value only. ヌッ can be read as [nup] and transliterated as 努. Thus any writing system can develop an alphabetical use, but its origi-

nal system would not change.

2. Graph and Grapheme

2. 1. The writing systems of the world are usually classified into two systems: the logographic system and the phonographic system. The phonographic system is further divided into the syllabary system and the alphabet system. It is certain that the writing system began as a logographic system, then became syllabic and then, alphabetic. This tendency can be seen even in the Chinese system and the Japanese system as we have seen. However, there is a reverse tendency that the alphabetical system becomes a logographic system. In the French writing system much syntactic information such as person or number can be indicated, while such affixes are lost in the speech sound through phonological changes. The Korean writing system, Hangul, which is an alphabet although the form of the letters are completely different from the Roman alphabet, becomes more logographic; the base and its affixes are written separately and the final consonant of a base is always written if it is not pronounced (Kono 1977, p.123).

Now we shall examine the history of the 'notorious' English spelling system. English scribes have always tried to be more alphabetical, or phonetic, but at the same time there has been a tendency to be more logographic. When English was first written in letters, its writing system was very phonetic. When medieval English people wanted to write their language using the Roman alphabet, they noticed they needed more letters so they utilized some letters from the Runic alphabet, a letter system in pre-Christian time: <ƿ, þ, Ʒ>. They also made new letters: <æ, ð>. Thus they made their own one-letter-for-one-sound, alphabet, system. Here, in Old English (OE) they did not distinguish some voiced consonants from voiceless consonants, so they put one letter for each pair of voiced

and voiceless consonant i.e. they used <ƿ> for [f, v], <ʰ> for [s, z], and <ƿ> or <ð>, which were regarded as variants of the same letter, for [θ, ð]. However, these letters are completely alphabetic or phonetic for people who spoke Old English. Furthermore, they did not distinguish long vowels from short vowels; vowel quantity could be deducible morphologically or semantically.

From 1066 to about 1200 French was the 'national' language in England. Only a small number of texts written in the English language during this period can be found. English was not considered as a language for upper class people. Nobody cared how English changed, so it experienced considerable changes so we call it Middle English (ME) distinguished from OE. Moreover most scribes were French when English regained its status as a written language. The spelling custom of OE which had been handed down incompletely was mixed with the foreign (French) way of spelling. The present custom of English spelling is based on the spelling custom of this age. Though they wanted to be more precise and more alphabetic, this mixture of French reform and traditional spelling makes the English spelling a more complicated one.

One of these reforms was of the spelling of the consonant sounds which were regarded to be the same in OE. With the introduction of <v> and <z> voiced and voiceless consonants [v, z] could have been distinguished in letters. However while the differentiation of [v] from [f] is achieved by using <v>, <ʰ> still has a dual value as in OE. Furthermore on the distinction of [θ, ð] the situation is the same as that of OE, though the spelling is changed from Runic letters to that of French reform, <th>.

Another reform was of the spelling of fricatives and affricates, which also were regarded as the same sound in OE. Those combinations of letters which have <h> in the second position are the French reform:

⟨th⟩ , ⟨sh⟩ , ⟨ch⟩ , ⟨gh⟩ . ⟨Th⟩ was invented to denote dental fricatives as well as ⟨sh⟩ for palato-alveolar fricatives, ⟨ch⟩ for palato-alveolar affricates [tʃ] (⟨ch⟩ has other values: [k], [ʃ]), and ⟨gh⟩ for velar fricatives though velar fricatives were lost in English so this combination of letters has no value in present-day English, as in ⟨light⟩ .

As for the spellings of vowels there appeared a new attempt to show the distinction of vowel quantity. The most conspicuous spelling reformer was Orm in the early thirteenth century. After a short vowel, he doubled the consonant letter, and after a long vowel, he did not. However, though his writing system was very important as data for phonological analysis, it did not influence the English writing system. On the other hand the French scribes thought out the following symbols to show long vowels:

[i:] > [ai]..... ⟨i⟩ ⟨ou, ow⟩ [u:] > [au]
 [e:] > [i:]..... ⟨ee⟩ ⟨oo⟩ [o:] > [u:, u, ʌ]
 [ɛ:] > [e:] > [i:]..... ⟨ea⟩ ⟨oa⟩ [ɔ:] > [o:] > [ou]

These symbols had a consistency, though it was not complete. However, the following phonological changes mentioned in the table, the Great Vowel Shift, diphthongization, shortening, and so on, made them less consistent.

Thus, though the spelling reformers were eager to be phonetic in their reforms, they failed because of the mixture of new and traditional spelling customs and because of the following phonological changes. However they reformed the English spelling also from the logographic point of view.

First they made formal variants of letters according to the position in which they appeared as in the Indic, the Arabic, and the Mongolian systems. As for the spelling for [k] there are three variants: ⟨c⟩ , ⟨k⟩ , and ⟨ck⟩ . ⟨C⟩ is traditional, ⟨k⟩ began to be

used in order to show the word final, and new ⟨ck⟩ also began to be used word-finally. Also, ⟨y⟩ , ⟨ow⟩ , ⟨aw⟩ were used as variants of ⟨i⟩ , ⟨ou⟩ , ⟨au⟩ in the word final. These variants also were used on the side of the letters which contains a minim (a vertical line), e.g. ⟨l⟩ , ⟨k⟩ , ⟨n⟩ , and so on, to make the distinction from the neighboring letters clearer.

⟨Th⟩ and ⟨wh⟩ functions as markers of function words: articles, pronouns of third person plural, interrogatives, and so on (*the, these, they, through, though, which, where, why, how*, though in the last word the position of the letters is different). ⟨Th⟩ began to be used as a new French spelling from about the fourteenth century. The interrogatives beginning with ⟨wh-⟩ were written as ⟨hw-⟩ in OE but the position was reversed during ME. They had many variants both in pronunciation and in spelling: ⟨w-⟩, ⟨h-⟩, ⟨q-⟩, ⟨qu-⟩ , ⟨qw-⟩ , ⟨qwh-⟩ are examples of the spelling variants. However, it is quite probable ⟨wh-⟩ became the standard in spelling because it evidently presents unity as a group of form words.

Likewise, on ⟨would⟩ , ⟨should⟩ , and ⟨could⟩ there have been phonological arguments about the vowel quality and the loss of [l]. It is certain ⟨l⟩ in ⟨could⟩ was inserted after *would* and *should* because *could* comes from [ku:ðe] , ⟨cūðe⟩ in OE, which did not have [l]. However, spelling and pronunciation of these words seem to be more closely related. The spelling ⟨-ould⟩ in ⟨would(e)⟩ , ⟨should(est)⟩ , and ⟨could⟩ appeared almost concurrently in the sixteenth century. This conformity in spelling must have influenced the conformity of pronunciation; it is very probable this spelling unity had been more effective to make the phonetic form of these three words the same.

English has many homonyms because of the loss of inflectional affixes and the phonological changes. The ‘non-phonetic’ spellings are very effective to reduce ambiguity; they appeal something more logo-

graphic than phonetic. A lot of common examples can be found: *meat-meet*, *sea-see*, *great-grate*, *break-brake*, *no-know*, *night-knight*, *right-write*, *I-eye*, and so on. The difference in spelling is usually etymological and so phonetic in origin. If these are written in the same letters it becomes more difficult to read a text. These original and etymological but already non-phonetic spellings play a logographically discriminatory role in the English writing system.

Another logographic tendency is the etymological spelling in the Renaissance. Many Latin words were borrowed from French, so their forms were different from the original ones. In the Renaissance, the period of the revival of classical forms, such borrowed words were changed into the more original and etymological forms: ME *det* > *debt*, *receite* > *receipt*, *enditer* (legal AN form) > *indict* [indait], *aventure* > *adventure*, *faute* > *fault*, *egal* > *equal*. They obviously show a logographic tendency in English whether they affected the phonetic form or not.

Furthermore, the Chomsky-Halle's famous argument that English spelling shows the underlying form of the word, though it has been under criticism, is very convincing if the spelling has a tendency to be logographic. Any writing system is never purely phonetic. The pure phonetic transcription in IPA cannot be understood if we could not interpret it from the phonological point of view.

2. 2. Kono (1969) set up the following terms to explain writing systems: graph and grapheme. A graph is a unit to manifest a word (or a morpheme in polysynthetic languages like those of the Eskimos (the Innu)). A grapheme is an element to constitute a graph. In a logographic system like the Chinese system a graph is constituted of a semantic grapheme and/or a phonetic grapheme, both of which may be divided into smaller units. In an alphabet system like the English system a graph is constituted of phonetic graphemes (members

of the alphabet or letters) only.

The role of a writing system is to communicate a language. The most important unit of a writing system is the graph. As de Saussure clearly explained the linguistic sign has two sides: concept and sound-image. A language cannot be understood unless both concept and sound-image are understood simultaneously. We cannot understand a language, even if we can identify all the phonetic sounds and transcribe it in IPA, without associating it to some concept. Reversely how could we convey some concepts without speech sound in linguistic communication? Both cannot exist independently of each other in language. However, using a writing system we can sometimes communicate without sound-image. Even if we cannot identify the phonetic value of a graph or graphs we can tell what the graph or graphs communicate. This often occurs in a 'semantic' writing system as the Chinese one. Phonological dyslexia also proves this fact. The patient can identify graphs but cannot identify graphemes. The reason of these facts means that a writing system can convey its concept directly without sound-image.

A graph, of course, does not manifest content itself, but a linguistic unit, which has both content (concept) and form (sound-image). However, unlike a linguistic sign, speech sound, it can communicate content and form separately. A graph communicates the content of a linguistic sign. A phonetic grapheme communicates the form of a linguistic sign. Thus a writing system can simultaneously be more logographic (like the English system) to manifest the content, and can be more alphabetical (like the Chinese system) to manifest the form or phonetic outline. The tendency to be more alphabetical or phonetic is already well examined, so in the following section we will examine devices of the writing system to be more logographic.

3. Logographic Devices

3. 1. There are various ways to show a word. Separating each word by space is prevalent among writing systems in Europe and West Asia. Indic Devanagari reinforces it with a horizontal line above a word. Chinese is a unique language where a form of a word is always one syllable except for borrowed words. Its writing system clearly shows this characteristic. The size of each letter is always the same even if the letter contains many lines. The Japanese system consists of rather complicated Chinese letters and the simpler *kana* syllabary. As an agglutinative language, Japanese words are built up with a base which can be a word when used independently and one (or more) affix(es). The Chinese letters are used for the bases, and the syllabary for affixes. The complex of two kinds of letters shows the agglutinating character of Japanese and gives a kind of word division. For example, in the sentence as 〈日本語の大きな特徴は数種類の文字を使う事です。〉, if we replace Chinese letters with □, and syllabic letters, ○, divisions in the sentence (indicated with ‘|’) always come after a ○:

□□□○ | □○○ | □□○ | □□□○ | □□○ | □○ |
□○○

日本語の 大きな 特徴は 数種類の 文字を 使う
事です

The difference in the morphological level can be manifested in writing systems. The Japanese system succeeds in this by using two different kinds of letters. In the alphabet systems capitalization is one of such devices. In the German system nouns become characteristic by capitalization and in other systems it indicates proper nouns. As mentioned above certain complexes of letters as 〈wh-〉, 〈th-〉, 〈-ould〉 are relevant

to the differentiation of parts of speech. They are a kind of semantic graphemes. The number of letters may be relevant to this differentiation, though the differentiation is somewhat vague. In English and other languages the comparative difference of the number of letters helps us to distinguish full words from form words, though in speech some adverbial particles are pronounced with considerable length and stress at the end of a sentence.

The word boundary is also manifested in the writing system. In addition to simple separation as mentioned in the first paragraph of this section, some systems have positional variants of a letter, such as the Arabic, Indic, Mongolian systems, and 〈-y〉, 〈-ck〉, and others in English. Such devices clearly show a word as a prosodic unit.

Prosodic marks are not usually manifested. However, if a stress or some other accent itself is relevant to the morphology of the language, it is manifested as in Greek, Latin, or French 〈é〉 and others. Hebrew schwa, which means ‘vain’ and shows that there is no vowel, and other diacritical marks for vowels in the Near East writing systems show that vowels are prosodic units as stress in English or other languages. Prosodic marks also gives syntactic information as punctuation marks do in the English system. These logographic devices skillfully manifest a linguistic unit according to the language for which they are used.

3. 2. *Furigana* in the Japanese writing system is a typical example to show the difference between a graph and graphemes.

‘Shakespeare’

[ʃeikʷsɔpiə]

〈大^シ文^エ学^イ者^ク〉

[daibungakɯʃa]

‘great man of letters’

Furigana are usually put beside Chinese letters to show their (Chinese letters') phonetic value. However it is sometimes seen that the phonetic value of the *furigana* syllabary is completely different from that of Chinese characters. In the above case the *furigana* of the 〈大文学者〉 'great man of letters' must be 〈だいぶんがくしゃ〉 [daibunɡakɯʃa], but 〈シェイクスピア〉 'Shakespeare' are put instead of it. This means that the graph consisting of four Chinese letters shows the content of the word 'great man of letters' and the graphemes consisting of seven syllabic letters show the form of the word [ʃeikuɯsɯpia].

Such use of letters shows that the writing system can communicate form and content of a linguistic unit, a word in this case, separately. Rebus or *chia-chie* 仮借, one of six ways of building Chinese letters, also show this fact. Here we separate graphemes from the graph and then attach the graphemes to the other graph. In 〈E-Z-Lern〉, the name of a driving school, the graph shows a unity as a word, but the graphemes come from the other graphs 〈easy learn〉.

Thus every writing system has the dual function, one is to show the content of a linguistic unit and the other, the form of it. In the level of graph even the alphabet system becomes logographic and some graphemes become semantic; phonetic graphemes become more alphabetical even in the Chinese system. This dual function of the writing system effectively communicate a language.

4. Spelling spells.

There is an argument about reading: Is the phonetic value of each graph irrelevant or not when we read? In other words do we read by ear or by eye? It is certain reading aloud is effective to the beginners especially if the content is very difficult. However fluent readers often experience a quick grasp of the

important parts of the whole text. In the last section we have argued that a writing system can communicate the language's form and content separately. The former readers pay more attention to (phonetic) graphemes, which communicate sound-image, or form, and the latter readers to graphs, which communicate concept, or content.

Here we should be careful not to confuse a linguistic sign and a spelling. Linguists cannot be too careful of this confusion. However, it is not strange if a person regards a writing system of a language to be equal to the language. We acquire a mother tongue 'naturally'; though there are mutual activities between a mother or an equivalent person of her and a child, after the child acquires a language, he or she never remembers the patient effort. On the other hand we cannot acquire a writing system without conscious efforts. Thus, the writing system in the modern world is considered to be much more superior to the linguistic system (or speech sound), though the writing system is originally a secondary system to the latter system.

The phenomena which de Saussure qualified to be pathological come from this fact; spelling pronunciation plainly shows this treasonable superiority of the writing system. The talisman with some sacred letters on it is the ultimate case of it. Though the letters are only substitutes of linguistic signs, we regard they themselves have power. In this case really spelling *spells* us.

However, as we have examined above, the writing system has developed its own system and structure. The greatest difference is that the writing system can communicate form and content of a language separately. This reminds us of the double articulation of the linguistic sign. However, while linguistic secondary articulation cannot exist without the primary

articulation, graphs and graphemes can be identified without phonetic value. Kono (1953, p.4) calls such graphs in Chinese *jigo* 字語. Scholars of ancient history often read the ancient texts without phonetic reality (personal communication). We identify the phonetic form of a word by word final mute ⟨e⟩ in English.

This fact indicates the non-linear character of the writing system. Though letters are put linearly, they are not identified so linearly as the speech sounds, and the writing system can separately communicate content and form because it is logographic as well as phonetic. These non-linear and dual-functional characters of the writing system make the ‘treason’ by the writing system to the linguistic system authentic. Every writing system very skillfully manifests units of the content and the form of a language, and phonologists sometimes become depressed by the idea that the well-developed writing system of a language might be the best phonological transcription.

Spelling spells a language. The method to manifest a linguistic unit varies according to the structure of each language. The study of the relationship between a language and its writing systems will teach much about the nature of a sign. While the linguistic system communicated by speech sound cannot completely be free from its linearity, a writing system is not so much restricted to this linear character. We will leave close examination from this point of view for further study.

5. Conclusion

We have examined the world writing systems and analysed how skillfully each system communicates each language. The writing system has dual function to manifest a linguistic content and a linguistic form. Graphs manifest a linguistic unit and graphemes in general a linguistic form. Thus a writing system is not

purely phonetic nor logographic.

It is often said if all the languages are written in the same writing system we can understand them more easily. Indeed if Russian were written in the Roman alphabet, it would be much easier for `W e s t e r n` European people to learn. However, this is because Russian belongs to the same group as other European languages, so if we can identify its phonetic outline we can conjecture its meaning. However, in the other cases we cannot understand a language at all even if we can identify all the speech sounds.

Of course identification of phonetic outline is important to understand a language. However, we do not need all the phonetic characteristics of a language to understand it, some of the characteristics can be deduced phonologically or morphologically, for example, aspiration of the word initial plosives, or stress in English. Likewise all the phonetic characteristics are never put into letters; only relevant features to form a unit are manifested. This makes us notice the other function of the writing system, the logographic function. Logographic devices varies according to the language. We must say a writing system cannot be understood without the knowledge of the language even if the world writing system is one.

However examination of the logographic function of each writing system may teach us something about the nature of the system of signs. At least when we talk about orthography we must take this function of the writing system into consideration. The reason of the failure of modern spelling reformers of English (among them Webster’s is the only example of success) is that they are too phonetic. Here we will emphasis again that graphs become logographic and graphemes become phonetic.

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Needless to say, any inadequacies are my own.

SIGNS

- < > : spelling
[] : pronunciation
' ' : meaning
> : 'changed to'
< : 'changed from'

ABBREVIATIONS

- AN: Anglo-Norman French
IE: Indo-European
IPA: International Phonetic Alphabet
ME: Middle English
OE: Old English

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