

Sejong's Achievement, as Viewed by an American Admirer

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Along with the mastery of tools, fire, speech, and agriculture, writing rates as one of the most important distinctions between humans and animals.¹ Of those distinctions, writing is the most recent, having arisen barely 5,000 years ago. Traditionally, writing was also the distinction most restricted geographically: 2,000 years ago most of the world peoples still did not write. As a result of this restricted distribution, "civilized" peoples have always considered literacy to form the divide between themselves and "barbarians."

There are only three occasions in human history when writing evolved spontaneously, uninfluenced by any previous writing system. Those occasions were in the Sumerian civilization of ancient Iraq around the year 3200 B.C.; in China, by 1300 B.C. and in Mexico, around 600 B.C.²⁻⁹ Those first inventions of writing

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systems must have been incomparably more difficult than borrowing and adapting an existing writing system.

The first scribes had to settle on basic principles that we now take for granted. For example, they had to figure out how to break down a continuous utterance into speech units, regardless of whether those units were taken as words, syllables, or single sounds (phonemes). They had to learn to recognize the same sound or speech unit through all our normal variations in speech volume, pitch, speed, emphasis, and pronunciation. They had to decide that a writing system should ignore all of that variation. They then had to devise ways to represent sounds by symbols.

Somehow, those first scribes of Iraq, China, and Mexico solved all those problems, without having in front of them any example of the final result to guide their efforts. That task was evidently so difficult and lengthy that, as far as we know, those were the sole three occasions in history when people definitely invented writing entirely independently, without available models. The other reason why there were no other independent inventions of writing is that all other opportunities were pre-empted by the spread of Sumerian or Chinese or Mexican writing. Once those three peoples had invented writing, the details or principles of their writing spread to other societies, before those other societies could go through the necessary long period of independent experimentation with writing themselves.

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- Diringer, David (1982). *Writing* (Thames and Hudson, London).
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Thus, all subsequent writing systems were inspired by those three first scripts. How do you actually devise a new script for your own language, when you have a script for another language in front of you? This was the problem that faced King Sejong of Korea in the year 1446. It turns out that the spread of writing has occurred by means of either of two contrasting methods, which find parallels throughout the history of technology and ideas. Someone invents something and puts it to use. How do you, another would-be user, then design something similar for your own use, knowing that other people have already got their own model built and working?

Such transmission of inventions assumes a whole spectrum of forms. At the one extreme lies "blueprint copying," when you copy or modify an available detailed blueprint. At the opposite extreme lies "idea diffusion," when you receive little more than the basic idea and have to reinvent the details. You know that it can be done, and you are thereby stimulated to try to do it yourself, but your eventual specific solution may or may not resemble the first inventor's specific solution.¹⁰⁻¹¹

For example, recent historians have argued vigorously about whether blueprint copying or idea diffusion contributed more to Russia's building of an atomic bomb.¹² Did Russia's bomb-building efforts depend critically on blueprints of the already-constructed American atomic bomb, stolen and transmitted to Russia by spies? Or was it merely that the revelation of the American atomic bomb in 1945 convinced Stalin that the idea of building an atomic bomb was feasible, and that Russian scientists then reinvented the principles of bomb-building in an independent program, with little detailed guidance from the American effort? We don't know the answer for

¹⁰⁻¹¹ Kroeber, A.L. (1940) Stimulus diffusion. *American Anthropologist* 42:1-18.

Rogers, Everett (1983). *Diffusion of Innovations*, third edition (Free Press, New York).

¹² Holloway, David (1994). *Stalin and the Bomb* (Yale University Press, New Haven).

the Russian atomic bomb, but we do know the answer for many writing systems.

Blueprint copying has been the basis of roost writing systems, which copy and modify the previously existing script of another language. One example will be familiar to all of you: the development of a writing system for the Korean language, based on Chinese characters for writing the Chinese language, around 600 A.D. Another example is the alphabet used for writing the English language. All alphabets that have ever existed were invented by modifying another alphabet. The first Semitic alphabet of around 1800 B.C. was modified to create the Phoenician alphabet by 1200 B.C., which was modified to form the Etruscan alphabet before 700 B.C., which was modified to form the Roman alphabet around 600 B.C., which was modified to form the English alphabet by 800 A.D.^{13 14} Idea diffusion, the other method for devising a new writing system, is also familiar to you because it was the method used by King Sejong in devising Hangul. It was probably also the method that the ancient Egyptians used to devise their hieroglyphs.

Problems inevitably arise whenever you adapt the script of one language to another language, because no two languages have exactly the same set of sounds. The resulting modified script of the "borrowing language" may provide a bad fit to the sounds of the borrowing language, if the sounds of the borrowing and lending language are quite different. That principle will also be familiar to you because of your experience with Chinese-based writing systems for Korean. The Chinese writing system is good for the Chinese language, because the Chinese language has many so-called "homophones" - words that are pronounced the same but that have different meanings. Those homophonous words would have to be written confusingly identically in an alphabetic script, but are

^{13 14} Diringer, David (1968). *Tek Alphabet*, third edition (Hutchinson, London).

Naveh, Joseph (1982). *Early History of the Alphabet* (Brill, Leiden).

distinguished by separate signs In Chinese writing.¹⁵¹⁶ However, the sounds of Korean and also of Japanese are quite different from the sounds of Chinese, as you know from the famous proclamation of King Sejong:

"The sounds of our country's language are different from those of China and are not confluent with the sounds of our characters. Therefore, among ignorant people, there have been many who, having something that they want to put into words, have in the end been unable to express their feelings. I have been distressed because of this, and have newly designed 28 letters, which I wish to have everyone practice at their ease and make convenient for their daily use." King Sejong could have added that the sounds of Japan's language are also different from those of the Chinese language, but that has not prevented the Japanese from continuing to use Chinese-derived writing, with the result that Japan now has by far the clumsiest and most difficult writing system in the world.

However, it is not always true that blueprint copying yields a bad writing system. For example, Finland writes the Finnish Language with a 20-letter alphabet derived from the Roman alphabet. The fit between spoken sounds and written signs in Finnish is so nearly perfect that the question "how do you spell it?" is virtually unknown in Finland, even among children. The English alphabet is also based on the Roman alphabet, and it also used to be good, but it is now inconsistent and awful, as all of you who have struggled trying to write and pronounce English know. I am now rediscovering for myself the bad features of English writing, because my eight-year-old twin children come home from school every day and have to practice spelling exercises, which they would never have to do in Finland. Our English spelling became awful because English

¹⁵¹⁶ Boltz, William (1968). Early Chinese writing. *World Archaeology* 17:420-436.

Boltz, William (1994). *The Origin and Early Development of the Chinese Writing System* (American Oriental Society, New Haven).

pronunciation has been changing for many centuries without changes of English spelling. In addition, English borrowed not just one writing system but many: French writing, German writing, Dutch writing, and others, used inconsistently. While King Sejong noted the difficulties of writing Korean with borrowed Chinese and Indian and Arabic letters. In effect, that is what English did.

Why do Japan, English-speaking countries, and many other peoples continue to use scripts poorly adapted to their language, when they could have imitated King Sejong and invented a good script? One reason is that ease and clarity of writing are not the sole considerations. People may prefer a bad and difficult script because it is beautiful and prestigious, as is true for Chinese-based writing in Japan. Japan has its own kana syllabary, almost as well adapted for writing the Japanese language as King Sejong's Hangul is for writing Korean, but the kana syllabary is not replacing Chinese-based writing in Japan, as Hangul is replacing Chinese-based writing in Korea. Also, people may remain with a bad writing system simply because people are conservative, lazy, and reluctant to change. Many spelling reforms have been proposed for the English language, but none has been adopted, because we English-speaking adults are too lazy to go to the work of learning a new good alphabet.

The other method for devising new writing systems, that followed by King Sejong, has been idea diffusion. By idea diffusion, I mean that the inventor of a new script does not borrow and modify an existing script; he just uses his awareness of the existence of other scripts to devise a new one. often based on very different principles.

One example of idea diffusion in the history of the United States is the development, around 1820, of a system for writing the language of a Native American Indian tribe, the Cherokees.¹⁷ A Cherokee Indian named Sequoyah observed that white Americans made marks on paper, and that they gained great advantage by

¹⁷ Klausner, Janet (1993). *Sequoyah's Gift* (HarperCollins, New York).

using those marks to record and repeat lengthy speeches. However, the operation of the English alphabet remained a mystery to Sequoyah, since he was illiterate and could neither speak nor read English. He decided to design a system for writing the Cherokee language, even though he knew nothing about the operation of English writing.

Sequoyah began by drawing pictures, but gave them up as too complicated; he continued by inventing separate signs for each word, as in Chinese writing, but gave that up too. Finally, he realized that words were made up of modest numbers of different syllables that recur in many different words. Hence he devised 85 signs for the 85 commonest Cherokee syllables. Thus, surrounded by an alphabet that he could not understand, Sequoyah instead independently re-invented a syllabary. Unaware that the Japanese had already invented their kana syllabary many centuries earlier, and that the Minoans of Crete had already invented another syllabary over 3,000 years earlier.

Egyptian hieroglyphs, the most famous of all ancient writing systems, may also have originated through idea diffusion, though we don't know the name of the Egyptian King Sejong or Sequoyah who did it. Egyptian hieroglyphic writing suddenly appeared, in its nearly final form, around 3000 B.C., at a time of intense trade between Egypt and Sumeria. Probably Egyptians learned from Sumerians about the idea of writing and possibly about some of the principles. Other principles, and all the specific forms of the Egyptian hieroglyphs, were then quickly designed by some Egyptian who was clever, but not quite so clever as King Sejong.

King Sejong similarly designed his Hangul alphabet by idea diffusion. He did not copy the letters of any existing writing system. Instead, he apparently got the idea of an alphabet from familiarity with some foreign alphabet – perhaps a Mongolian alphabet, or a Tibetan alphabet, or an Indian Buddhist alphabet. He got the idea of grouping characters in square blocks from Chinese writing. But he invented new forms for the letters, and he invented many new principles.

To appreciate why scholars consider Hangul an excellent writing system, let us ask ourselves; what do we want an excellent writing system to do?

One thing that an excellent system could do is to provide letters or signs whose forms are very different from each other, so that they can be quickly distinguished at a glance. For example, lower-case letters of the English or Roman alphabet are distinctive, because some of them (like b, d, f, h, k, l, and t) rise high above the line, others (like g, p, q, and y) dive far below the line, still others (like a, c, e, m, and so on) neither rise above nor dive below, and two letters (i and j) have distinctive dots over them. By that criterion, the Hebrew alphabet is more difficult to read, because it has many letters that closely resemble each other.

Another feature that can make a writing system excellent is letters designed so that it can be written quickly. A remarkable example is an extinct alphabet used for a while long ago, around 1300 B.C., at the town of Ugarit on the Mediterranean coast of Syria. Its letters consist of one, two, or three vertical or horizontal lines in parallel or in series, some of them crossed by other lines. The 30 letters each require, on the average, barely three strokes to be drawn, but they are still easily distinguished from each other. The other remarkable feature of the Ugarit alphabet is that the letters requiring the fewest strokes may have been the commonest letters for the language then spoken at Ugarit. The result was that the Ugarit people could use the Ugarit alphabet to write their language very quickly.

King Sejong, in inventing Hangul, achieved an excellent writing system in a different way. He combined the advantages of an alphabet and a syllabary, by devising an alphabet of only 28 letters, but grouping those letters into square blocks representing syllables. One resulting advantage is that you Koreans can learn Hangul quickly, because you now have only 24 letters to learn, instead of the thousands of signs that Chinese and Japanese people have to learn. But King Sejong gave you another advantage; you can read Hangul quickly, because the letters are grouped into

syllables, so that you learn unconsciously to recognize whole groups of letters as syllables, and each word therefore consists of fewer units for you. In thus combining the advantages of an alphabet and a syllabary, the Hangul alphabet that King Sejong created became unique among the world's writing systems.

Hangul has two other features that interest scholars. King Sejong designed all vowels to have the related forms of long lines, all consonants to have related forms of two-dimensional shapes, and members of each of the five groups of consonants also to be distinguished by related shapes. A few other writing systems also design vowels and consonants differently, but King Sejong got the idea independently. Second, he designed the form of each letter to resemble the shape of the mouth while pronouncing that letter. In that respect, the Hangul alphabet is unique among the world's writing systems.

All these are among the reasons why scholars outside Korea admire King Sejong's achievement in creating the Hangul alphabet.

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