

## TO INDEX KANJI

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**Annotation:** The topic I was given was “innovative approaches to foreign language education,” but my story may be more about regression than innovation. In this IT era, when the demand for paper dictionaries is likely to be waning, we are trying to create a paper dictionary.

The topic I was given was “innovative approaches to foreign language education,” but my story may be more about regression than innovation. In this IT era, when the demand for paper dictionaries is likely to be waning, we are trying to create a paper dictionary.

The Japanese language is said to have the most difficult writing system in the world, and this is actually true. In addition to the unique characters hiragana and katakana, kanji are also used, numbers are Arabic numerals (numbers also have kanji, kanji numerals), and alphabets are used as appropriate. Kanji are originally Chinese characters, so naturally they are also used in Chinese. But in China only kanji are used and not mixed with other letters like hiragana. Besides, Japanese kanji have on-yomi (on-reading: Japanized Chinese reading) and kun-yomi (kun-reading: Japanese reading) in each character. The confusion is further deepened by the fact that there are many ways to read it.

The three letters are originally kanji. Hiragana and katakana were created from kanji. Kana is written by converting ideographic kanji into phonetic letters, hiragana is made by writing it fast, and katakana is made by removing parts of it.

It is undoubtedly this writing system, especially the kanji, that makes Japanese, which is not difficult in nature, very difficult. In terms of grammar, honorific language is also a little difficult. As you can see in this picture. You could say that Kanji is the so-called ‘final boss’ of the game, the last and greatest enemy that stands in the way of the protagonist.

The simple 4-syllable-word “消しゴム (eraser: 3 syllables)” is made up of the three hiragana, katakana, and kanji characters. These three letters are also used in the simple sentence "Ali went to the bank." And the character “行” can be read in two ways (on: ‘kou’ and kun: ‘i(ku)’).

Why not abolish such difficult kanji? Foreigners may wonder why we won’t write sentences only in hiragana or the alphabet (roma-ji), but kanji are convenient. Memorizing kanji is extremely difficult for both foreign Japanese learners and Japanese children, but the convenience is worth the effort. You should try learning about 1000 kanjis first. If you do this, you will realize how useful kanji are. However, it will be difficult until then.

When introducing kanji, I often use my name as an example. If you write “Wakabayashi” in roma-ji, it needs 11 letters, in hiragana “わかばやし” 5 letters, and in kanji “若林” only 2 letters. How economical! -- Of course, this is just a joke to get people's attention, but it has the following advantages.

The biggest feature and advantage of kanji (but also their biggest disadvantage) is that they have three in one: shape, sound, and meaning. In the case of monophonic letters like the alphabet, the letters only have shapes and sounds. For example, “e” has its shape and the sound ‘e’. The kanji pronounced ‘e’ has many different forms, and each character has a different meaning. Such as “絵 (picture)” “恵 (grace)” “会 (meeting)” “依 (depend)” etc., and each has a different meaning. The character “巳”, which resembles “e” in shape, is pronounced ‘shi/mi’ and means ‘snake.’

Some alphabets also have such “kanji-like characteristics.” It's a number. The letter “5” is the sound ‘five’ in English, ‘pyat’ in Russian, ‘besh’ in Uzbek, and ‘go’ in Japanese.

In the case of Japanese, the situation is further complicated by the fact that each kanji has an on-yomi and a kun-yomi. A certain kanji, for example “作”, is read as ‘zuo’ in Chinese and ‘sa/saku’ in Japanese, which has changed slightly depending

on the Japanese language, and this is the on-yomi reading. However, this can also be read as ‘tsuk(ru).’ You can think of it as “translation” in the Japanese sense, and this is kun-yomi.

In this way, when we mix kanji (ideographs) with meanings with hiragana and katakana, which have sounds but have no meaning (phonetic letters, in this case syllabic letters), the meaning is carried by the kanji, and the hiragana is used to indicate grammatical elements, case relationships, conjugation of verbs and adjectives, and auxiliary verbs, while katakana indicates that the word is a foreign word or proper noun of a foreign country. This makes it easier for people who know a lot of kanji to understand the text. This is a big advantage.

Furthermore, because the letters have meanings, it is easy to understand technical terms. For example, how many native English speakers know the term “pectoralis major”? This is written in kanji as “大胸筋”; “筋” is ‘muscle’, “胸” is ‘breast’, and “大” is ‘big’, so it is obvious what it is. Or “limnology”, in kanji: “陸水学”. “陸” is ‘land’, “水” is ‘water’, and “学” is ‘science’, so you can probably guess what kind of science it is. In English, from “-logy” you can guess it means somewhat about science or study, but you don't know much more than that. In addition, the character “land” is also used in “上陸 (landing)”, “着陸 (landing of airplanes)”, “離陸 (takeoff)”, “大陸 (continent)”, “陸軍 (army)”, “陸橋 (overpass)” and so on. The words “海軍 (sea army; navy)” and “空軍 (sky army; air force)” can also be used alongside “陸軍 (land army)”, providing an orderly and clear system for the inconsistent English equivalents. The kanji is productive.

On the other hand, it also has the disadvantage of increasing the number of homonyms, which is difficult to overlook, and this again makes it difficult to abolish kanji. If we were to abandon kanji and write only phonograms like the Roman alphabet, we would not be able to distinguish between homophones. We cannot easily understand the meaning by hearing, but we can get it by looking at the characters. It must be said that it is a script that is extremely difficult for the blind.

The Japanese vocabulary consists of Japanese words (wago), words of Chinese origin (kango, written by kanji with on-reading), and foreign words. The proportion of words of Chinese origin in the Japanese vocabulary is 47.5%, and the proportion of Japanese is 36.7% (type frequency; type frequency: 41.3% and 53.9%, respectively). It's so big that you could say it's been hijacked, and it's almost impossible to get rid of it. We have no choice but to get along well.

There are four ways to compose kanji: 象形 (shoukei), 指事 (shuji), 会意 (kaii) and 形声 (keisei). In short, shoukei and shiji are pictographs; shoukei represents things that have a form, and shiji represents things that have no form. For example, kanji like “子(child)” and “鳥(bird)” are shoukei, and “上(top/above)” and “下(down/under)” are shiji.

Kaii (meeting of meanings) and keisei (shape-and-sound) are secondary productions that are the combination of two or more elements. Kaii is a combination of meaning and meaning, and keisei is a combination of meaning and sound. “人(man) + 木(tree)” (a person leaning on a tree) is “休(rest)”, and “宀(roof, house)” + “女(woman)” (a woman inside the house) is “安(safe).” Keisei-kanji like “机(desk)” is a combination of meaning “木(tree, wood)” with sound “几(ki)”, and “時(time)” meaning “日(day)” with sound “寺(ji).”

Kanji characters created in Japan (national characters: “働 work: hatara(ku)” (人man + 動move = work), etc.) and English words created in Japan (Japanese English: “ベッドタウン: bed + town = suburb”, etc.) are based on the method of kaii. Kaii is very interesting as a method of combining two elements, but there are only a few kaii characters, and more than 90% of kanji (more than 60% of commonly used kanji) are based on the keisei method: one is responsible for meaning, and the other is responsible for sound. The part that indicates the meaning is called the ifu (意符), and the part that indicates the sound is called the onpu (音符). The ifu is called 部首 (“radical”) and is used as a guide for kanji searches.

Since ancient times, people have struggled with how to search for the countless kanji (it is said to exist 50,000 or even 100,000). There are usually three types of kanji indexes: index by readings, index by radicals, and index by total stroke number. Of these, the easiest to use is the on-kun reading index; if you know how to read it, whether it's on or kun, you can use this index to find the kanji you're looking for. However, usually people don't know how to read the kanji and look it up in a dictionary to find out, so this index is useless in that case.

One don't use the total stroke index unless it is absolutely necessary. The radical index is the most orthodox. But there are some difficulties to find out the real radicals; for instance, the radical for “開 (open)” is “門 (gate),” and the radical for “聞(hear)” is “耳(ear).” You are troubled by the fact that they have different radicals even though they have similar shapes. For this reason, some dictionaries employ what is called a ifu-onpu (meaning part-sound part) index, which allows searches from any constituent element.

We are taking this further and creating a subdivided element index. For example, the aforementioned “安” and “時” can be searched not only by the radicals “宀” and “日”, but also by “女” and “寺(temple)”, and in addition to it, “寺” can be searched by “寸” (hand shape + one) and “土(earth)”. But the only thing you have to be careful about is, since the upper part of “寺” (“土”) was originally “止(stop)” (foot shape), so it appears on the “止” part, which seems to be an inconsistency at first glance, but the original character is given priority. And there is a fundamental problem with indexes: how to arrange each element. The “inorganic” method of using the number of strokes is the simplest and most uniform method, but too many elements are lined up in the same number of strokes, and the arrangement there becomes a further problem. Here, too, I attempted an “organic” classification and arrangement based on the origin of the characters. Each element is defined as: People (people, women/children), Body (hands, feet, heads, bodies), Nature (heaven, earth, plants, animals), Culture (food, clothing, shelter, transportation, weapons, tools,

beliefs), Symbols/Others. So sorted, “扌” appears in the “hand” category, and “止” appears in the “foot” category. It's tedious, but I think it's easy to use once you get used to it (it's just like kanji itself, which is difficult at first but becomes useful as you learn it). It also helps in knowing the origin of characters. Knowing the origin of characters will be of great help in learning kanji. This dictionary is of course also equipped with a reading index and a total stroke index, and this element index can also be used as a radical index. I believe that if you become familiar with this element index like a “dictionary to read” while using other indexes, it will definitely be effective in learning kanji. I really want to complete it.