Reflections on the Necessity of Chinese Lexical Expansion (Postprint)

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Abstract

With the development of society, the amount of information requiring linguistic expression is massive. Due to the continuous large-scale emergence of new information, technologies, and objects, expression and naming are no longer simple matters, necessitating a substantial number of appropriate words as well as new characters. To address these issues, this paper examines the necessity of expanding Chinese characters and vocabulary.

Full Text

Preamble

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Abstract

With societal development, the volume of information requiring linguistic expression has become enormous. As new information, technologies, and objects continuously emerge in vast quantities, both expression and naming present significant challenges, demanding extensive suitable vocabulary and even new characters. This article reflects on the necessity of expanding Chinese characters and words to address these issues.

Keywords: expansion of Chinese characters and words; Chinese language system for science and technology; Chinese expression of foreign terminology

Main Text

Language is one of society' s most fundamental components and the most basic tool for communication. Chinese possesses extremely rich connotations and unique charm, carrying profound thought and culture. With societal development, the volume of information requiring linguistic expression has become enormous. As new information, technologies, and objects continuously emerge in vast quantities, both expression and naming present significant challenges, demanding extensive suitable vocabulary and even new characters. This poses substantial challenges to the Chinese language.

Many terms—including technical terminology, drug names, and academic vocabulary from natural and social sciences—originate from the West, and translating them into Chinese presents numerous difficulties. Accurate translation is often extremely challenging, most notably exemplified by the complex Chinese translations of numerous Western drug names that bear no relation to the common meanings of the characters used. For instance, a Western cough suppressant is translated as "枸橼酸喷托维林片" (Juyuansuan Pentuoweilin Pian), which is difficult to write and memorize in Chinese, with its meaning opaque to ordinary people; its Western name "Pentoxyverine Citrate" is relatively simpler. Another example is a drug indicated for HIV-1 (Human Immunodeficiency Virus Type 1) infection and chronic hepatitis B, whose Chinese translation "富马酸替诺福韦二吡呋酯片" (Fumasuan Tinuofuwei Erpifuzhi Pian) is dauntingly complex. While its Western name "Tenofovir Disoproxil Fumarate Tablets" is also not simple, it appears somewhat more straightforward than the Chinese version. These issues with characters, vocabulary, and translation suggest that we must consider the expansion of Chinese characters and words.

Currently, new naming and translation of foreign terms rely on combining existing Chinese characters. Since each character carries rich meanings, and combinations with other characters have already formed numerous words, this approach creates two fundamental problems: first, the pool of available character combinations is diminishing; second, new combinations expressing novel meanings suffer from interference by the original meanings of their constituent characters, as well as latent connotations from other existing combinations. This can compromise both the accuracy and speed of our thinking when reading and comprehending Chinese texts.

While literary and linguistic professionals appreciate the polysemy of Chinese expression, people often encounter situations where translated works are perplexing, yet reading the original brings clarity. This is not an isolated issue but a systematic one. As a Western philosopher once stated: "The limits of my language mean the limits of my world." The divergent paths in calculus development between Britain and continental Europe after Newton and Leibniz also illustrate the impact of language and notation. At that time, Britain adopted

Newton' s system and notation, while continental Europe chose Leibniz' s system and symbols. Consequently, for over a century, Britain lagged far behind continental Europe in analysis-based mathematics, and the entire field of mathematics lost contributions that some of its finest minds could have made. This situation only changed in the 19th century when Cambridge analysts learned from and innovated upon continental approaches.

Since the May Fourth Movement, reflection on the development of Chinese characters and language has never ceased, and some characters were even created during this period. For example, the writer Xia Yan created the characters "搞" (gǎo, to do) and "垮" (kuǎ, to collapse) based on colloquial speech, while Hu Gangfu created "熵" (shāng, entropy) based on his understanding of the Western thermodynamic term "entropy." These characters are now commonly used in daily life. However, no widely adopted new characters have emerged in the past 70 years. Since the founding of the People' s Republic of China, Chinese character reform has focused primarily on simplification and standardizing variant characters, motivated in large part by literacy campaigns and reducing the burden of learning and writing Chinese. While these efforts have achieved tremendous success, they have essentially not considered the expansion needs of the Chinese language.

The Japanese writing system borrowed from Chinese characters, but in addition to kanji, it includes kana and romaji. Kana is further divided into hiragana and katakana, with the latter primarily used for foreign proper nouns and technical terms. While this system solves some problems, it also creates others, yet hiragana and katakana may have played an important role in Japan' s scientific, technological, and social development, as this system is useful for precise expression in science and for precise thinking.

The current scientific and technological systems remain dominated by Western culture. We have yet to establish a Chinese language system for science and technology, and may not even have recognized the fundamental importance of building such a system. The absence of a Chinese scientific language system may have already caused many latent impacts: for instance, the integration of scientific and technological thinking into Chinese language and culture proceeds more slowly; the general public and youth struggle to grasp certain essences and spirits when learning science and technology; the resulting concepts and thinking tend to be fragmented and piecemeal, making it difficult to form coherent systems, thereby affecting understanding and subsequent development of science and technology. Working within someone else' s language system is like planting flowers and grass on someone else' s land—you cannot create your own garden. Without our own scientific language system, achieving self-reliance and strength in science and technology will lack a firm foundation [1]. China' s need for scientific and technological self-reliance demands that we have our own system. Behind this lies a critical issue: the expressive capacity of language and its ability to carry thought. Both Chinese characters and the Chinese language need development in these respects.

The question of how Chinese can express itself more simply, effectively, and systematically is likely worthy of serious study. Specific issues include:

(1) Whether to consider systematic methods for creating new characters to express new fundamental information connotations arising from social development and other cultures. (In translation, it is often difficult to find appropriate words to express certain meanings—for example, the translation of the term "Tenure" has long troubled academia, and no universally accepted formulation has yet emerged, with both "长聘" (chángpìn, long-term appointment) and "常任" (chángrèn, permanent) being used for professional titles.)

(2) Whether it is possible to select some simple Chinese characters or character-based symbols specifically for expressing foreign proper nouns such as technical terms,

(3) Whether Mandarin pronunciation can be appropriately extended. Even in the current pinyin system, some combinations of initials and finals lack corresponding Chinese characters. Many pronunciations found in dialects are also absent from Mandarin. Currently, each Chinese character has a monosyllabic pronunciation in Mandarin, whereas dialects actually have polysyllabic pronunciations. Rich phonetic diversity in language is highly beneficial for brain development, intelligence, and perceptual growth.

(4) The impact of hiragana and katakana usage on Japan' s scientific and technological development.

References

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Note: Figure translations are in progress. See original paper for figures.