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A Study on Chinese Translation of Haiku with the Assistance of DeepSeek

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Abstract: Japanese haiku features an extremely concise form, profound cultural connotations embedded in *kigo* (seasonal words), and sophisticated grammatical functions of *kireji* (cutting words). It has long been a difficult and widely discussed topic in the field of literary translation. This paper analyzes the constraints on haiku translation from linguistic, cultural, and poetic perspectives, and points out that conciseness, seasonal markers, and imagery transitions can hardly be fully preserved simultaneously in cross-linguistic conversion. This paper also discusses the practical performance of neural machine translation and large language models in haiku translation. It is found that artificial intelligence boasts remarkable efficiency in rapidly generating initial drafts and maintaining consistency of terminology, yet it encounters difficulties in handling the intertextual implications of seasonal words and the textual tension created by cutting words. On this basis, the paper proposes a structured human-machine collaboration workflow. It holds that artificial intelligence shall undertake basic tasks requiring speed and consistency, while human translators retain the power of aesthetic judgment and cultural decision-making. The research concludes that although artificial intelligence can assist with a large number of technical translation tasks, human translators are still required to calibrate and confirm the core parts of haiku translation related to poetic perception and cultural memory.

Keywords: Artificial intelligence; Human-machine collaboration; Kigo (Seasonal Words); Kireji (Cutting Words); Poetic fidelity; Post-editing

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1. Introduction

The translation of Japanese haiku is an extremely challenging type of literary translation. Its main difficulties lie in *kigo* and *kireji*. Seasonal words carry poets' perceptions of seasonal changes, while cutting words function as markers for tonal shifts and imagery pauses. Following the traditional 5-7-5 mora meter, each of the 17 syllables of haiku bears dense loads of semantic meaning, cultural background, and phonological effects. Any negligence will ruin the original artistic charm of haiku. With the rapid development of artificial intelligence in recent years, AI-assisted translation has shown prominent advantages. When applied to Japanese haiku translation, artificial intelligence performs well in generating first drafts, realizing literal

word correspondence and providing multiple alternative versions. Nevertheless, it is deficient in subtle semantic adjustment, distinguishing delicate nuances of seasonal words and reproducing tonal transitions of cutting words. How to effectively utilize artificial intelligence has become a worthy research topic for current scholars [1].

2. Constraints on haiku translation: Requirements of language, culture and poetics

Haiku delivers semantic and phonological perceptions in a highly condensed form. Classical haiku generally adheres to the 5-7-5 metrical pattern, forming a two-part structure. Different imagery segments are connected by cutting words rather than explicit logical conjunctions. The artistic power of haiku lies in implicit expressions. Unique phonological combinations and deliberate pauses create implied meanings beyond literal texts and effectively arouse readers' associations [2].

The inherent characteristics of the Japanese language further strengthen such compactness. Ellipsis is a common linguistic phenomenon in Japanese. Subjects, tense markers, and auxiliary words can be omitted as long as they can be inferred from the context. The topic-comment structure puts the theme in the front position, followed by an extremely short predicate. A large number of homophones also create conditions for puns and sound repetition [3]. Lexical and syntactic ambiguity is not a defect of haiku; instead, it is a deliberate rhetorical technique that enables multiple meanings to coexist within the limited syllable framework. In the context of culture and poetic traditions, seasonal words evoke readers' memories related to poetry, while some cutting words have fixed pragmatic functions. A literal word-for-word translation will easily cause the loss of these functions. All the above constraints force translators to make compromises during haiku rendition.

Currently, neural machine translation models specially fine-tuned with poetic corpora can basically produce fluent sentences and achieve a certain degree of stylistic control [4]. However, many specific poetic techniques are still poorly handled. The ultra-short length of haiku brings difficulties in text alignment, and the models are prone to errors when processing low-frequency words. Although adaptive technologies for poetic machine translation have improved stylistic simulation, obvious quality gaps still exist in rhythm reproduction, imagery presentation, and figurative language processing. Besides, automatic evaluation indicators cannot reliably reflect the adequacy of poetic expression.

Therefore, this paper adopts a case analysis method and carries out research from four dimensions: meaning (semantic fidelity), imagery (presentation of scenes and metaphors in translated texts), rhythm (compactness of rhythm and reproduction of cutting word effects), and cultural connotation (retention of original functions of kigo and kireji, and preservation of intertextual clues). This analytical framework has strong practical significance for haiku translation research. Comparing AI translations with human translations item by item based on the four dimensions can more precisely define the capability boundaries of current artificial intelligence in haiku translation [5].

3. What AI can and cannot do in haiku translation

From the perspective of technological evolution, with the assistance of human post-editing, existing neural machine translation and large language models can generate relatively reliable draft translations for Japanese-Chinese conversion. Continuous technological improvements in recent years have greatly enhanced the

accuracy of AI-aided Japanese translation. The generated sentences are grammatically correct, fluent to read, and maintain stable word alignment [6]. This means artificial intelligence can quickly provide multiple translation options for a single image and keep word usage consistent across a group of haiku works, thus reducing human translators' repetitive thinking burden.

When it comes to haiku translation, the capability limits of AI systems become more obvious. Relevant studies show that models fine-tuned with poetic datasets outperform general large language models in retaining stylistic features and literal fidelity, and they can better control rhythm and line breaks [7]. Adding restrictive conditions to prompts can adjust register and reduce redundant expressions, which helps maintain the concise form of haiku. Decoding parameters also exert great influence: narrowing the beam width or increasing sampling diversity expands lexical options and sometimes achieves better results. On the contrary, overly strict parameter constraints make the model tend to adopt plain and literal expressions, resulting in lengthy sentences that violate the conciseness of haiku [8].

Even so, several core elements of haiku remain challenging for AI. Figurative language is often oversimplified in translation, and the hierarchical scenes and implicit transitions in original works are flattened. Although expanding haiku corpora and adding annotated examples of kigo and kireji can optimize stylistic performance and word selection to a certain extent, the models still fail to truly understand implicit cultural connotations and intertextual relations.

In short, artificial intelligence is competent at rapid draft writing and consistent word selection, and can adjust linguistic styles. However, it still faces great difficulties in understanding implicit cultural knowledge, interpreting the ambiguity brought by cutting words, and processing highly condensed metaphors in haiku [9].

4. Comparative analysis of human translation and AI translation of classic haiku

Based on the above discussion on meaning, imagery, tone, and cultural connotation, this paper selects several classic haiku works by Matsuo Bashō and Yosa Buson for a comparative analysis. To ensure objectivity, unified prompts, system settings, and decoding parameters are adopted to reduce variable interference. The outputs of AI models are compared with publicly available human translations, and selected high-quality human versions are taken as the reference for qualitative evaluation.

4.1. Matsuo Bashō: *Furu ike ya*/*Kawazu tobikomu*/*Mizu no oto*

Zhou Zuoren's translation: An old pond — / A frog leaps in, / and the sound of water.

DeepSeek's translation: Beside the old pond, a frog leaps in, with clear splashes of water.

Both versions convey the core content of the original work. However, DeepSeek adds the modifier "clear", turning the objective description into a subjective aesthetic judgment. The ambiguous artistic conception of *sabi* (quiet elegance) is defined by the word "clear", and the multi-layered implications of the original poem are simplified. Zhou Zuoren's translation presents all images with a clear spatial relationship, showing a progression from stillness to motion and finally to sound without any distortion. DeepSeek adds the locative word "beside", shifting the focus from the pond itself to its surroundings and weakening the secluded atmosphere. The word "leap" replaces "jump", refining the plain action and losing its rustic charm. The implied artistic conception of *sabi* is explicitly interpreted as "clearness", which damages the subtlety of the poem.

In terms of rhythm, Zhou Zuoren uses an em dash to create a pause. The blank after "An old pond" achieves the rhythmic effect of kireji, and the two-part structure is distinct without deliberately compressing syllables. DeepSeek adopts three three-character phrases with smooth transitions, replacing the abrupt shift from extreme silence to sudden sound with a flowing rhythm and weakening the tension between the two parts. The ending phrase *mizu no oto* (sound of water) is plain in the original work. Zhou Zuoren retains this simplicity, while DeepSeek uses the modified phrase "clear splashes" to weaken the direct sense of sound. Both translations correctly identify the frog as a seasonal word for spring. Zhou Zuoren subtly preserves the implicit implication of warm spring water and reviving life, while the words "leap" and "clear splashes" in DeepSeek's version create excessive elegant associations and deviate from the simple style of the original poem. The exclamatory and pausative function of kireji *ya* is reproduced by the em dash in Zhou Zuoren's translation, while commas in DeepSeek's text only serve as ordinary sentence breaks and fail to deliver the sense of abrupt pause.

This case reflects a typical defect of AI poetic translation: adding descriptive words to pursue literary effect. Corresponding editing strategies are proposed: following the aesthetic principle of *sabi* in haiku, translators shall delete all unauthorized modifiers during post-editing and restore the translation to pure objective imagery.

4.2. Yosa Buson: *Haru no umi/Tsutari tsutari kana*

Chen Li & Zhang Fenling's translation: The spring sea drifts lazily all day long.

DeepSeek's translation: The spring sea, rippling on and on all day.

Both translations convey the basic content. The human version focuses on people's leisurely mood with a slight personification effect. DeepSeek is more faithful to the state of the sea itself, yet it converts the dynamic movement of waves into static adjectives, changing the semantic nature from action to state. The word *tsutari* depicts both the shape of waves and the passage of time. The human translation retains both meanings, while DeepSeek emphasizes visual presentation and reduces the dynamic sense. Core images are completely preserved in both versions. The human translation retains a vivid rhythmic flow like human breathing; DeepSeek condenses the scene into two reduplicative words, turning the continuous surging of waves into a static state and losing vitality.

In terms of rhythm, the prose-style sentence in the human translation ends with the character "Zai", echoing the exclamatory mood of kireji *kana* with a leisurely and gentle rhythm. DeepSeek uses two four-character phrases without verbs. Its rhythm is extremely compact, like a frozen moment, and the lingering exclamation of *kana* is only implied by line breaks without phonological rhythm. The repetitive structure *tsutari tsutari* is compressed into two separate reduplicative phrases in DeepSeek's version, weakening the rhetorical effect of repetition. Both translations correctly recognize "spring" as the seasonal word. The human translation delivers the lazy atmosphere of spring with a human touch, while DeepSeek adopts an objective descriptive style. The exclamatory function of kireji *kana* is directly reflected by the character "Zai" in the human translation, while DeepSeek has no corresponding lexical marker and only relies on blank spaces to suggest the mood.

This case shows AI's tendency to compress repetitive structures. The targeted editing strategy is to restore the original reduplicative form while retaining the advantages of AI translation in seasonal expression and structural conciseness.

Two universal rules can be summarized from the above cases. First, with fixed prompt settings, the outputs of large language models are relatively stable, but they are still sensitive to wording. Second, adopting qualitative error classification methods helps identify defects in tone and rhetorical processing, instead of merely judging translations by grammatical correctness and semantic integrity [10].

In terms of form, rigidly adopting the 5-7-5 syllable pattern in Chinese translation often damages poetic fidelity. Adding redundant words to fit the meter will weaken the effects of kigo and kireji. On the contrary, flexible word count ensures more accurate semantic expression. Targeted post-editing on this basis can restore poetic rhythm without changing the original meaning [11].

Therefore, when AI adds modifiers for fluency or literary effect, translators shall remove redundant adjectives and locative words in accordance with the *sabi* aesthetic of haiku and return to original imagery. When AI compresses repetitive rhetorical structures to improve information efficiency, translators shall restore the original reduplication as a poetic technique. The above revisions belong to lightweight adjustments including character deletion, replacement, and repetition restoration. The evaluation criteria are clear based on established aesthetic principles [12].

5. Human-machine collaboration: Workflow and evaluation criteria for haiku translation

Considering the capability limits and technical defects of AI mentioned above, translators shall make full use of AI's efficiency while safeguarding the core poetic elements during translation [13].

Firstly, clarify the rhetorical features and register requirements of haiku before writing prompts. Sort out information about kigo, kireji, expected linguistic style, and conciseness. Secondly, adopt prompts with clear restrictive clauses to specify requirements and understanding of haiku, so as to improve the pertinence and accuracy of AI outputs. Thirdly, organize peer review to implement human-centered evaluation. Finally, conduct reading tests to examine phonological rhythm, pauses created by cutting words, and verbal conciseness [14].

At present, the poetic corpora adopted by DeepSeek are insufficient, and a single automatic evaluation indicator cannot truly measure the adequacy of poetic expression. Although the system can quickly generate fluent and syllable-focused versions, its inherent limitations cannot be ignored. Optimal translation results rely on well-organized human-machine collaboration. Standardized prompts are used to check line breaks and seasonal markers, while human translators conduct final verification on imagery combination and linguistic style [15].

In the future, when such technologies are widely applied to all fields of literature and cross-cultural communication, artificial intelligence will operate in the form of modular intelligent editing systems. The rhythm module simulates reading rhythm and breathing pauses; the cultural module verifies seasonal words, allusions, and implied meanings; the style module monitors register consistency and restricts explanatory paraphrasing. Human translators can focus on the tension of combined imagery, artistic conception of blank spaces, and the intangible "poetic adequacy" that cannot be quantified by indicators. Ultimately, technology expands the range of possible translations, while humans make humane judgments among numerous options. This is the irreplaceable core value of human translators beyond AI's computational speed.

6. Conclusion

As this capability generalizes to all fields of literature and cross-cultural communication, artificial intelligence will operate in the form of modular intelligent editing. The prosody module simulates reading rhythms and breathing pauses; the culture module verifies seasonal imagery, literary allusions, and implied meanings; the style module monitors register consistency and restricts interpretive paraphrasing. Human translators can then focus their energy on the tension of juxtaposed imagery, the lingering charm of blank spaces, and that "poetic fullness" which cannot be quantified by metrics. Ultimately, technology expands the boundaries of possibilities, while humans make that single warm judgment amid countless alternatives — this is the core demand that artificial intelligence will always rely on humans to address, beyond its processing speed advantages.

Disclosure statement

The authors declare no conflict of interest.

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