Research on Post Editing of English Translation of Chinese "Tea Culture" Stories in the Context of Generative Artificial Intelligence

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Abstract. Recently, generative artificial intelligence technology represented by ChatGPT, Deepseek have sparked a new global wave of technology, with its impact affecting multiple fields such as education, finance, healthcare, media, law, and human resources. Generative AI has surpassed the initial stage of parsing only the grammar and syntax of natural language text, evolving to a higher level of understanding and processing logic, semantics, and emotions. This article will use generative artificial intelligence technology to translate Chinese "tea culture" stories, and conduct future editing from three aspects: increasing discourse coherence, adjusting register style, and improving translation syntax complexity, in order to provide more accurate translation for target language readers.

Keywords: generative artificial intelligence, tea culture, post translation editing

1   Introduction

Generative AI refers to the technology that generates text, images, sounds, videos, code, and other content based on algorithms, models, and rules. Generative AI technology integrates various functions such as automatic creation, machine translation, assisted creativity, image processing, speech recognition, knowledge extraction, data analysis, personalized recommendation, etc., which greatly subverts people's inherent understanding of AI technology. Its future development prospects and profound impact on various industries have also attracted widespread attention.

Generative AI now not only focuses on the surface structure of language, but also delves deeper into the deep meaning and essence of ideas behind language, making more accurate choices and judgments. This makes ChatGPT, Deepseek, ERNIE Bot and others have become knowledge processing tools with preliminary thinking and intelligence, and have strong computing power.

2   Characteristics and impacts of generative AI

2.1   Core Features of Generative AI

Generative AI, as an important branch of the field of AI, has attracted widespread attention for its unique capabilities and wide applicability. Its core features include six aspects. Generative nature is one of the core features of generative AI. Unlike traditional AI models, generative AI models are not only able to analyze existing data, but more importantly, they can generate new content that is similar to the training data.

Deviation is an important characteristic of generative AI. For the same input prompt, generative AI models will generate different and effective output results.

Modal diversity is another important feature of generative AI. Generative AI can generate different types of content, including text, images, videos, code, audio, etc.

Generative AI models also have broad adaptability. Among them, prompt engineering provides the possibility for the business diversity of generative AI models, and with the help of different carefully designed prompts, the expressiveness of the models is improved.

Real time interactivity is also an important feature of generative AI. The improvement in data processing efficiency and pre trained knowledge volume of generative AI makes it possible to understand, create, and respond in real-time.

Emergence is another important characteristic that generative AI cannot completely avoid. During the training process, the data is complex and diverse, and random probability distributions are introduced, making these abilities or behaviors that appear outside the training data or design goals of generative AI models, a natural result of the core mechanism of generative AI, and even almost impossible to completely avoid emergence.[1]

2.2   The Impact of Generative AI on Translation

The impact of generative AI on the entire human society is profound and comprehensive, and translation is just one of them.

Firstly, generative AI can provide authentic and relatively accurate translation services. Research has shown that the translation quality of ChatGPT-4 can be compared to commercial translation software such as Google Translate in all aspects. Its translation performance shows certain advantages compared to Google Translate and Youdao Translation. At the same time, it also has a powerful polishing function, which can provide efficient, authentic, and relatively accurate translation services after manually inputting prompts to improve the translation. In terms of translation from Chinese to foreign languages, the quality is comparable to excellent human translators. According to the latest memory function of ChatGPT 4o, it can also remember texts processed by the same translator in the future, forming coherence in translation style and terminology usage. Secondly, it can provide real-time translation services in multiple languages. According to OpenAI's official website, ChatGPT currently supports 58 languages. Although this number is not as many as the more than 130 languages available on Google Translate, it has surpassed commonly used

tools such as DeepL, Baidu Translate, and Tencent Translate, and the number of languages will continue to expand. Thirdly, it can indirectly provide multilingual interpretation services. For example, with the help of the Felo Subtitles subtitle tool, ChatGPT can indirectly provide multilingual consecutive or simultaneous interpreting interpretation services. After being combined with tools such as MetaHuman Creator and MakeHuman that can create virtual digital humans, it is even possible to generate "digital humans" that mimic the voice and image of the speaker for interpretation, which may to some extent compensate for customers' regret that AI interpreters cannot bring "emotional value". Fourthly, it can conveniently assist human interpreters in pre translation, in translation, and post translation work. Including: pre translation preparation, such as creating a bilingual terminology list, providing relevant background knowledge, etc; Translation assistance, such as using Cymo Note for speech recognition, highlighting terms and numbers, and online and offline interactive simultaneous interpreting interpretation; Post translation review, such as helping to review and analyze the advantages and disadvantages of the translation, providing improvement suggestions and better expression. Fifth, it can effectively reduce translation time and economic costs. ChatGPT-4 can process over 25000 words at once and can also batch polish translations through design instructions, which are then handed over to post editing personnel, effectively achieving the goal of reducing costs and improving efficiency. Sixth, there is also potential for translation in vertical fields. Although the current general language model has limited mastery of professional domain knowledge and still falls short of directly addressing translation and expectations in vertical domains, with the help of self-developed corpus and terminology fine-tuning training in vertical domains, the translation quality will be significantly improved.[2]

2.3   Spreading The Story of Chinese Tea to The Outside World

China is the country with the longest history of tea cultivation and drinking in the world, and its tea making techniques and culture have been passed down for thousands of years. The earliest introduction of Chinese tea to foreign countries can be traced back to the Southern and Northern Dynasties period. Subsequently, with the opening of the Silk Road and new shipping routes, Chinese tea, silk, and porcelain entered many countries and regions in Europe, Asia, and other parts of the world. In recent years, with the proposal of "Maritime Silk Road", "the Belt and Road" and other initiatives, tea import and export has become an important part of China's import and export trade. In November 2022, "Chinese tea making techniques and related customs" were included in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity. All of these provide new opportunities for the international dissemination of tea culture.

When it comes to the influence of global tea culture, besides China, British tea culture is also well-known, and English afternoon tea has become a window for many people to understand British culture. However, many people believe that English tea drinks and Japanese tea ceremony are "aristocratic" and have cultural connotations, which shows that the promotion of Chinese tea and Chinese tea culture is still far from enough. To promote the development of Chinese culture, the exchange and in-

ternational dissemination of tea culture is one of the important areas. Therefore, the translation of tea culture stories is an important aspect of "telling Chinese stories well".

With the increasing status of China in international politics, economy, and culture, as well as the growing awareness of "telling China's story well", the translation of tea culture works has become a hot research topic in recent years. At present, the translation of Chinese stories mostly focuses on some classic works, such as the Four Great Classical Novels of the Book of Songs and the Analects. There are relatively few translations of tea literature works, and even the most classic "Tea Classic" has only two translations.

The translators of "The Classic of Tea", Professor Jiang Xin and Professor Jiang Yi (2008), believe that the translation should strive to maximize the reproduction of the ideas, styles, and characteristics conveyed by the source language, and adopt the translation method of "alienation" to enable the target language readers to understand China's national spirit, distinctive customs, aesthetic images, and other connotations through the translated text of the tea classic. The rest mainly focuses on the translation of external promotional materials with a focus on tea culture. Liu Jing (2014) believes that as China's international status continues to rise, the focus of external propaganda is gradually shifting towards traditional Chinese culture. As a typical representative of traditional Chinese culture, tea culture's external translation is the most important way for Chinese culture to go abroad and be understood by the world. Liu Yanyan (2017) believes that the translation process of tea culture is actually a collision and exchange between Chinese and Western cultures. Duan Yali (2021), starting from the background of the "the Belt and Road", analyzes the importance, status quo, achievements and development prospects of the English translation of Chinese intangible cultural heritage publicity, and makes a useful exploration of the appropriate translation strategies for the English translation of Chinese intangible cultural heritage publicity.

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One Thousand and One Leaves: Tea Culture in Stories is a typical Chinese "tea culture" story reader. The article is concise in wording and rich in content, presenting the history, geography, culture, famous tea, dissemination, influence, and style of China's 5000 year tea culture one by one. Historical events are mixed with mythological colors, and are highly characteristic of traditional Chinese culture. This article will use generative AI for translation and post editing, effectively achieving the goal of reducing costs and improving efficiency.

Chinese belongs to the Sino Tibetan language family, while English belongs to the Indo European language family. The significant differences between the two are reflected in many aspects. For example, in terms of vocabulary, English has more nouns and prepositions, while Chinese has the advantage of verbs; In terms of sentence

structure, English are as loose as flowing water; In terms of sentence focus, English emphasizes the beginning, while Chinese emphasizes the end.[3]

3.1   Coherence of Generative AI

Generative AI assisted translation has the ability to optimize the syntax of translation without changing the empirical meaning, thereby enhancing the coherence of the text. Textual coherence involves the semantic connections of the entire text, demonstrating the relationships between various semantic units. This coherence can be achieved through syntactic restructuring and logical reorganization.[4] Send instructions to Deepseek to improve the coherence of the translation through its syntax optimization.

Example 1:

Translation: But soon he became thoroughly accustomed to the opulent life of an emperor—neglecting court duties, ruling with tyranny, inflicting brutal punishments, indulging in wine and women, and descending into unrestrained debauchery.

Syntax optimized translation: Yet soon he grew accustomed to the decadent luxury of imperial life—abandoning governance, ruling as a tyrant, meting out brutal punishments, drowning himself in wine and sensual pleasures, and sinking into utter debauchery."

Analysis: This passage is selected from Replacing Wine with Tea. It can be seen that after being polished by Deepseek, the coherence of the translated text is more natural. Replacing 'But soon' with 'Yet soon' is more in line with English narrative habits, implying a softer turning point. Use dashes instead of commas to make the logic of long sentences clearer and highlight the progressive relationship of subsequent actions.

Example 2:

Translation: Simmering milk reveals crab-eye bubbles; fine porcelain holds moonlit essence and cloud like spirit.

Syntax optimized translation: The milk boils, crab-eye bubbles rise; Porcelain cups cradle moonlit skies— Where cloud like spirits swirl and dream, In steam-wreathed dance, a fleeting gleam.

Analysis: This passage is selected from Dong Xiaowan Goes Off Drinking and Loves Tea. This passage describes Dong Xiaowan boiling tea. When the tea water boils and becomes clear and transparent like crab fish scales, it can be poured into a porcelain that is as smooth and round as a moon cloud. The optimized translation reconstructs the original Chinese two parallel short sentences into a four line ladder like structure through clause reconstruction, which conforms to the "progressive imagery" habit of English poetry. The first line focuses on "bubbles rise", and the second line transitions to the metaphor of "moonlit skins" for "containers and celestial phenomena".

3.2   Adjusting the register style

Generative AI technology has the ability to adjust the language domain style of translated texts according to demand. It emphasizes the multidimensionality of domain

analysis, especially in understanding and identifying language variants under specific contextual features and communication purposes. This means that when adjusting the text style, it is necessary to go beyond the direct meaning of the text and introduce metaphors, symbolism, and rhythm to create a more emotional and artistic style that is not only faithful to the original text, but also captures and conveys the emotional and aesthetic value of the original text. Send instructions to Deepseek to adjust the register case to make the writing more literary.

Example 3:

Translation: In Shennongjia today, this tea folk song still lingers:The tea tree was planted by Shennong's hand,With white blooms peeking through leaves so grand. It feared no mist nor cloud when first sown,Nor wind nor rain as it's grown.Its tender leaves brew cures for every plight,Beloved in every home - pure delight!

Translation after adjusting the register and case: Folks in Shennongjia still sing this old tea tune:Way back when Shennong himself put tea in the ground, Pretty white flowers peekin' through green all around. Didn't fear no fog when them shoots was small, Laughs at wind and rain now it's grown tall. Steep them young leaves—keeps the doctor away, Every family drinks it every day!

Analysis: After issuing the command to adjust the register and case, Deepseek provided five versions of translations, namely: Academic Literature Edition, Literary Poetry Edition, Folk Oral Edition, Brand Promotion Edition, and Children's Education Edition. This tea song is selected from "Shen Nong Gets Tea". This is a tea song with very simple and easy to understand lyrics. Considering that this is a folk song with clear rhythm and catchy pronunciation, it is best to achieve the same effect in translation. Therefore, we choose the folk oral version translation for analysis here. Use colloquial expressions ("peekin", "didn't fear no") to simulate folk songs. Borrowing the English proverb 'keep the doctor away' to correspond to 'detoxify the hundred poisons', the whole poem has a lively rhythm and is suitable for oral transmission.

Example 4:

Translation: Tyrant Sun Hao was captured and sent to Luoyang.

Translation after adjusting the register and case: In defeat and disgrace, the despotic monarch Sun Hao was led in chains to Luoyang - a humiliating end for the once-feared ruler whose cruelty had sealed his dynasty's fate.

Analysis: After issuing the command to adjust the grammatical structure, Deepseek provided 8 versions of the translation, namely: academic history, literary narrative, concise news, educational text, comedy dialogue, popular history, diplomatic text, and military history. This sentence is taken from *Replacing Wine with Tea*, which tells the story of the state of Wu being destroyed by the Western Jin Dynasty, and the king of Wu, Sun Hao, being captured and taken to Luoyang. Therefore, we choose the literary narrative style for analysis. By using evaluative terms such as "despotic" and "humiliating" , we aim to convey a clear moral judgment of historical figures. Construct a visual image using the detailed description of "in chains" . Creating narrative pauses through punctuation and reinforcing dramatic transitions with appositive structures is a rhetoric commonly avoided in formal writing. Establish a literary causal relationship between character behavior and dynastic fate using attributive clauses. In addition, add a reasonable imagination: "once feared ruler".

3.3   Improving the syntactic complexity of the translation

Generative AI technology can improve the syntactic complexity of translations by using subordinate clauses (such as relative clauses, adverbial clauses, etc.) to enhance the logical coherence between sentences; Embedding additional information into the main sentence through apposition, insertion, and modifying phrases to enrich the syntactic structure; By using parallel structures and compound sentences, multiple simple sentences can be fused into more complex expressions. In addition, the standardization of written expression is often improved through the use of passive voice and nominalization structures.

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Example 5:

Translation: Old Wei Yin, tender of tea leaves and keeper of faith, Would bow each twilight, each breaking morn, Before compassionate Guanyin's gaze,His humble chalice steaming, With spring-picked devotion.

Improving syntactic complexity Translation: Wei Yin, an aged cultivator of tea whose gnarled hands had coaxed life from mountain soil for decades, maintained with monastic precision the sacred ritual of presenting—at the precise juncture where night yielded to day and daylight softened into dusk—a porcelain cup brimming with the season's most tender leaves before the ever-merciful countenance of Guanyin, his whispered mantras intertwining with the rising vapor in silent communion.

Analysis: Send instructions to Deepseek to increase the complexity of its syntactic structure. The obtained translation uses the same position structure, "an aged cultivator... decades".Simultaneously containing the attributive clause 'who gnarled hands... soil' and the time adverb 'for decks'. Using the insertion language structure, "at the precise juncture...dusk—". The present participle modifies the entire sentence. The polished translation increases the complexity of syntactic structure and information density without changing the original meaning.

4   Conclusion

In summary, generative AI technology can improve the efficiency and quality of translation, and is expected to become an effective tool for translating Chinese stories for external publicity. With the iterative upgrading of the model, the combination of artificial translators and AI remains the best path for the external translation of Chinese tea stories in the future. In future exploration, China's translation field not only needs to cultivate a group of translation talents who are proficient in high-end technology and have a deep understanding of both Chinese and Western cultures, but also continuously enrich the training discourse of the big language model of Chinese tea

stories, empower the external translation of Chinese tea stories through technology, and strengthen China's position in the international discourse system.

5   Acknowledgment

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