Opportunities and Challenges Brought by Artificial Intelligence to Literary Translation——A Case Study on DeepSeek and the English Translation of *A Dream of Red Mansions*

Lijun Yi

Nanchang Institute of Technology,
Nanchang, China, 330099
14686710@qq.com

Abstract. The rapid development of Artificial Intelligence (AI) has changed our communication pattern to some extend. The application of AI in translation of literary works and relevant academic research has become a fashion, it not only brings convenience for us to acquire massive filtered information, but also motivates our inspiration through man-machine conversation. At the same time, it can speed up the spreading of literary works and deepen the mutual learning among civilizations. As we are enjoying the opportunities brought by AI, we should face the potential challenges as well, and consider its responding strategies.

Keywords: Artificial Intelligence, translation, opportunities, challenges

1   Introduction

Since the 18th National Congress of the Communist Party of China, Chinese President Xi Jinping has pointed out in a series of important speeches that the great Chinese national spirit and excellent traditional culture result in our nation's continuous growth and prosperity. He has repeatedly emphasized the importance and necessity to promote spreading Chinese excellent traditional in this new era. As excellent literary works carry on traditional virtues and wisdom, the translation and academic study of them can not only bridge different people, but also deepen the mutual learning among civilizations.

A Dream of Red Mansions is a brilliant pearl among the treasure of Chinese literature, so we should not underestimate its significance in spreading Chinese culture. As the pinnacle and representative of Chinese classic literature works, *A Dream of Red Mansions* has been translated into multiple languages and spreads overseas. As we know, there are two most authoritative English translation versions, one is *The Story of the Stone* translated by David Hawkes and John Minford, and the other one *A Dream of Red Mansions* is from a Chinese scholar Yang Xianyi and his British wife Gladys. Although many scholars in the West have made some relevant academic researches on different topics, including its English translation, such as Florence Wheelock Ayscough lock Ayscough (1923), Patrick Hannan (1973), Victor Henry Mair (1983), Andrew H.

Plaks (1993), etc, the spreading depth and influence in West were not so desirable. In recent years, the rapid development of Artificial Intelligence (AI) technology, especially the rise of Large Language Models (LLMs), has brought new possibilities for literary translation and academic research, but some potential problems will companion as well. This article will take DeepSeek as an example, combining the two representative English translation versions of *A Dream of Red Mansions*, to compare and analyze the opportunities and challenges brought by AI to literary translation and academic research, while considering its corresponding strategies.

2   The Opportunities Brought by AI to Literary Translation and Academic Research

The exploring of AI technology began in the mid-20th century. Just after over half a century, it has gone through a rapid development process from theoretical exploration to practical application, and then to comprehensive promotion. It has evolved from originally simulating some certain specific functions of human intelligence to deep learning (DL) and natural language processing (NLP), bringing infinite possibilities to our life, work, and learning, and also providing many opportunities for literary translation and academic research.

2.1   Development of AI Technology Offers Possibilities for the Digital Transformation of the Translation Industry

The early exploration of AI technology focused on simulating some certain specific functions of the intelligence of human beings, so it was limited by its computing power and data resources. As for translation of literary works, main basement on the loaded dictionaries and grammar rules resulted in poor translation quality which was not only short of understanding of deep language structure and underlined meanings, but also lacked creativity in output texts. Entering the 1980s, the birth of Statistical Machine Translation (SMT) marked a new stage in machine translation. This technology utilized large-scale bilingual text corpora and statistical methods to construct language maps, such as Baidu Translate, achieving significant improvements in translation quality, especially in daily communication. However, it was not satisfied enough to meet high-precision aesthetic and cultural expectation in translating literary works and spreading national literature when dealing with complex language structures, metaphorical meanings between lines, cultural connotations, and so on.

Since the 21st century, the rise of deep learning technology has brought revolutionary breakthroughs to machine translation. In recent years, translation industry has realized its digital transformation along with the development of AI technology from neural network machine translation in 2016 to artificial intelligence natural language processing technology represented by ChatGPT in 2022. At the beginning of 2025, a transformative wave centered around Hangzhou DeepSeek Artificial Intelligence Basic Technology Research Co., Ltd. (DeepSeek) swept across the global artificial intelligence field. Driven by the technological boom of DeepSeek, humanities and

social science research is welcoming more possibilities and undergoing a paradigm shift from the traditional "pen and paper era" to a new "algorithm era".

2.2   A Powerful Corpus Provides Higher Tool Value for Literary Translation and Academic Research

Modern AI technology is advancing rapidly. For example, it is reported in the 2024 Government Work Report that DeepSeek has achieved a three-tier technological leap only within 18 months after the establishment of the company, from the launching of the first fully open-source model, DeepSeek LLM, to the pushing out of the MoE architecture DeepSeeker V2 which only at a cost of 1% of GPT-4 Trubo, and then to the performance comparable to its competitors, DeepSeeker R1, the iteration speed has been significantly reduced compared to traditional AI laboratories.

With breakthroughs in open source big model technology and disruptive business models, DeepSeek reshaped the global AI industry landscape and triggered a deep game in the capital market over the value of computing infrastructure. With powerful corpus and superior operating system, AI technology like DeepSeek is also opening up new avenues for the translation and academic study of literary works as a tool assistant. For example, if you input the requirements for the English versions of *A Dream of Red Mansions*, DeepSeek's reply not only includes the recommendation of the representative versions of the novel, but also provides some relevant information about the early or hidden versions, such as the early abridged version of *The Dream of the Red Chamber*(1958) translated from German by MacHugh sisters, and the unfinished version of *The Dream of the Red Chamber* (1892) translated by H. Bencraft Joly. In addition, DeepSeek offers some brief comparative analysis, examples, access advice to get more information, and other likes. Compared to traditional academic research on translation, it not only saves time and energy for readers and researchers to collect and filter information, but also helps them to classify comprehensive materials and deal with basic data. In this way, the tool value of DeepSeek can be realized higher.

2.3   Multiple Rounds of Human-machine Interaction Inspires Academic Thoughts

Through large-scale corpus training, AI technology is able to capture and reproduce multi-level language features, demonstrating its excellent contextual perception and language comprehension abilities. In recent years, the rise of Transformer architecture and pre-trained language models has further promoted the applying of large language models in the field of literary translation and academic research. With pre-training on large-scale unlabeled text data, these models not only acquire rich language knowledge and patterns, but also have excellent language generation and contextual understanding abilities, by which make the translation process more intelligent and personalized. With powerful learning ability, neural network machine translation captures the complex relationship between original language and target language among massive data to masters richer language knowledge and patterns, which results in more accurate and fluent translation, especially in dealing with long sentences and complex grammatical structures. What's more, deep learning technology can not only improve the efficiency and effectiveness of literary translation, but also provide some

logical and comprehensive analysis of the translated text.

As a result, after multiple rounds of human-computer deep interaction, more concrete and detailed questions and requirements produce deeper analysis and more comprehensive answers. During these rounds, the readers can get some inspiration for further thinking or research. Taking the research on the English translation of *A Dream of Red Mansions* as an example, DeepSeek will provide some basic information and general analysis of different English translation versions. After reading these information, some aspects may stimulate the reader's further desire to get more details, such as the translation characteristics of different versions. With more concrete instructions, DeepSeek will provide more details, even help the reader to produce an academic outline with additional advice. Presently, it is not unusual for students and researchers to use AI to assist their scientific research and academic paper writing.

3 Challenges Associated with AI Application in Literary Translation and Academic Research

Although the application of AI in literary translation and academic research has opened up new paths and provided more possibilities for us, while enjoying the convenience and efficiency brought by AI, we need to anticipate its potential problems and challenges.

3.1 Coordinated Development of Technology and Theory Is not Ideal

Although the development of artificial intelligence is advancing rapidly, and its massive database has brought infinite convenience to our learning and work, the perfect combination of technological progress and theoretical development has not yet been achieved. The translator actually needs to go through a process from original texts input to target language output, accompanied by cultural analysis and transformation. From the perspective of narratology, this is actually a process of "secondary narration". Famous scholar Zhao Yiheng has once discussed the principle of the "secondary narrative" in his book *A General Narratology*. He thought the secondary narrative cannot restore the text or "naturalize" it to the original form of an event. What the secondary narrative can do is just to straighten out the narrative to an "understandable" state, and the judging criteria of "understandable" comes from our cognitive rules which accumulate from our daily experiences. In other words, just transform it in a way similar to understanding daily experiences.

Therefore, literary translation is impossible to restore all the ideas and emotions carried in the original text, whether it is translated by human beings or AI technology. Another point deserves attention is that our researches pace in humanities and social sciences is different from the advancement speed of AI technology, it needs a certain degree of accumulation of precipitation. On account of this difference, the AI technology should take more theories of the humanities into consideration, especially in its database input and algorithm design to make the coordinated development more ideal.

3.2   The Translator's Subjectivity and Creativity Cannot Be Replaced

In the translation process, human translators depends on their own accumulated knowledge and habitual cognition which characterized by their own subjectivity and creativity, while AI translation cannot carry this consistent personal comprehension because its translation lies in their limited corpora and algorithms no matter how large the database is and how powerful the computing capacity is.

It's no doubt that AI translation sometimes can analyze and imitate people's style to show insights in some points, such as the diction used in the translation of the book name of *A Dream of the Red Mansions*. DeepSeek provides us both the translation of the book name from Hawkes, *The Story of the Stone*, and the one from Yang Xianyi, *A Dream of the Red Mansions*. What's more, DeepSeek helps us to analyze the difference: Hawkes stands out the original narrator of the story--the stone, while Yang Xianyi chooses the word mansions which implies inner stories and feelings within the private room, and the dream indicates the result as well. As to the translation of the whole story, AI translation cannot reach the unique and consistent characteristic of human translators. As acknowledged by academic circle, the authorized translation versions of the novel *A Dream of the Red Mansions* are from Hawkes and Yang Xianyi. Hawkes' version makes more allowance for target language rules and readers reading habits to develop its acceptance overseas, while Yang Xianyi focuses more on being loyalty to the original texts to transmit the original feelings of characters and significance in Chinese history and literature. For example, there are multiple description of the appearance of characters, especially for young girls in the original book, the translator should consider both the feelings of the people who sees the girl and in what context. As discussed in narratology, the narrator's subjectivity affects his creation. Such as in Chapter 3, when Lin Daiyu first entered the Jia family, she was timid and shy. While in Baoyu's eyes, besides her external beauty as a young girl different from his familiar sisters, Baoyu had a natural sense of intimacy and inexplicable familiarity with her because of the fairy stories in their past life. Therefore, Baoyu comes across heartful joy and love with romantic and aesthetic intentions.

Compared the two representative version and the translation from DeepSeek, before translating the details, Yang Xianyi kept consistency with the original text by using a general declarative sentence to narrate the plot, "Looking at Tai-yu closely, he found her different from other girls" , while Hawkes changed the sentence into a exclamatory sentence, " How different she seemed from the other girls he knew! " to outstand Baoyu's "attentive study" and surprising finding. DeepSeek just translated this plot into "He promptly made her a bow and, his greeting over, took a good look at her" which omitted the conclusion after Baoyu's observation. What's more, Yang Xianyi's following detailed translation kept the foreignizing translation principles as his own style to transform the information as far as possible, he also offered some additional information to help readers understand the images he used to compare with Daiyu, such as Pi Kan and Hsi Shih. While Hawkes clung to domesticating translation strategies to advance the understanding and acceptance of English readers, besides translating the detailed description of Daiyu in a poetic way, he just added "martyred" before Bi Gan and "beautiful" before Xi Shi as modifiers to help readers classify

these two images. Any style from these two translators can be replaced or copied by AI translation because they will never truthfully understand life beyond language from real experiences within communities.

3.3 Machine Cannot Make Ethical Judgments

Literary works are the carrier and medium for culture inheriting and spreading, as well as the expression of the author's thoughts and consciousness. At the same time, their outlook on life and ethical views can be directly or indirectly presented through various details. Whether it is the author or the translator, the narrative approach and discourse they used have their own unique features and implied values. Although traditional translation of literary works relies on manual and time-consuming processes such as reading, thinking, translating, polishing, and optimization, it not only highlights the translator's subjectivity and creativity, but also tests their ethical choices.

In Chapter 98 of *A Dream of Red Mansions*, before dying, Daiyu called Baoyu's name twice and said "nihao"(Chinese pinyin). In Chinese, "nihao" can be used as greeting words which equals to "hello" in English, obviously, the author didn't make this meaning here. According to the art of storytelling, Narratolgy, this unfinished sentence leaves a "narrative gap" for readers. As to theoretical analysis, narrative gap is not absolute void, but absence. It is the lack of corresponding part of the text stimulates the readers to fill in the gap to complete the meaning of the plot. It is a special narrate strategy to bridge the author's intention with readers' experience and wishes. The gap opens multiple possible doors for readers, while the translator should understand these narrative techniques and make allowance for ethical judgement instead of making literal translation by which the machine translation is frequently prone to. Taking the two versions to compare again, Yang Xianyi translated Daiyu's last words as "Pao-yu, Pao-yu! How...." , while Hawkes' translation is "Bao-yu! Bao-yu! How could you...". Yang Xianyi kept close loyalty to the original text to leave an open gap for readers, while Hawkes' ethical judgement resulted in presenting further sentiment of Daiyu in the tone of questioning. Compared with human translators, machine translation is a mechanical process from input to output, which means their answers based on digital information without vitality. As a result, AI technology is likely to provide multiple ethical choices according to its powerful calculating ability, but it is impossible for them to replace people to take ethical judgement and make the final decision.

4 Conclusion

Certainly, we do not deny the convenience and efficiency brought by the highly development of AI technology in translation industry and relevant academic research, we should make critical allowance for the potential problems and crisis. Although AI technology covers mass data and practices powerful calculating process to provides relatively complete translation of literary works and useful information for us to make further academic research, even takes over some basic research work for us, we should not depend too much on AI. Whether it is translator or it is academic research-

er, their works are full of accumulated life experiences and wisdom which will never be replaced by machines. Let's take the advantages of AI technology to assist our translation and academic research to make more contribution to the inheriting and spreading the value and significance of classic literary works.

5   Acknowledgment

References

1. Cao Xueqin, *The Story of the Stone*, Trans. Hawkes David [M], Penguin Books, 1973, pp. 56-57, 1932.
2. Cao Xueqin and Gao E, *A Dream of Red Mansions*. Trans. Yang Xianyi & Gladys Yang [M], Foreign Languages Press, 2021, p. 67, 283.
3. Tu Niangen, "Narrative Gap and Its Meaning Generation"[J], Journal of Northwest University, 2015, p. 62.
4. Wang Yun, Zhang Zheng, "Hidden Concerns and Relief of ChatGPT AI Translation"[J], Chinese Translation. 2024, pp.95-102.
5. Zhao Yiheng, *A General Narratology*[M], Sichuan University Press, 2013,p.109.