

# A Comparative Study Between Manual and ChatGPT Translations on Literary Texts: Taking *Kung I-chi* as an Example

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**Abstract:** Currently the boom of machine translation based on neural networks is followed by concerns in both translators and interpreters. This paper reports a comparison between chat generative pre-trained transformer (ChatGPT) translation and human translation in literary translation. The results reveal that ChatGPT's performance in literary translation at present is not as good as imagined at the lexical, syntactic, and textual levels. However, there is no denying that with the development of artificial intelligence and information technology, the literary translation abilities of ChatGPT-like tools will be improved.

**Keywords:** Machine translation; Literary translation; ChatGPT

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## 1 Introduction

### 1.1 Research background

The advent of ChatGPT triggered an earth-shaking revolution in the history of human civilization. The role of language has become an unprecedented focus of attention. Any class and profession can communicate with

artificial intelligence in any natural language and produce diversified content products from artworks to academic papers. As an important field of economy and society, language service provides important support for communication between different languages and cultures. However, with the development of artificial intelligence language models such as ChatGPT, intelligent language services have gradually emerged, challenging the traditional language service model.

### **1.2 Research object**

Artificial intelligence-generated content (AIGC), which is one of the fascinating frontier technologies, refers to the fact that users can use AI to create content (e. g., images, text, and videos) automatically according to their personalized requirements (Du, 2023). With the iterative development of AI algorithms and network structures (Zhao 2020: 1612–1627), much progress has been achieved in AIGC. As core technologies in AIGC fields, generative adversarial network (GAN), contrastive language-image pre-training (CLIP), diffusion model, and multimodal generation make it possible to automatically generate content with high quality. Moreover, with the advancement of GPU and the increase in computational power, large-scale deep networks with huge amounts of parameters are trained so that more information can be learned to deal with general downstream tasks with better performance (Gusak 2022). By virtue of these technologies, in the year 2022, various AIGC products were developed and iterated by the world's technological giants.

ChatGPT is one of these products. Microsoft and OpenAI jointly launched an artificial intelligence chatbot program called ChatGPT in November 2022 (Thorp 2023: 313). The number of global monthly active users exceeded 100 million in just two months, and ChatGPT became the fastest-growing consumer application in history, according to a report by UBS. ChatGPT is an intelligent chat box that can answer almost any question in a prompt. ChatGPT has played a bearing on language understanding and generation tasks such as machine translation, coding, writing, admitting mistakes, and even rejecting unreasonable requests. Unlike previous chatting robots, ChatGPT is able to remember what the user has said earlier in the conversation which helps for continuous dialogue (Jiao 2023). In March 2023, with the publication of GPT-4 created by OpenAI (*Gpt-4 technical report*. <https://cdn.openai.com/papers/gpt-4.pdf>), ChatGPT was promoted with further functions.

The analysis of ChatGPT's outstanding capabilities in translation cannot be ignored. The first one is its multimodal (language and image) understanding and text generation. Users can easily feel that it can accurately understand their intention and generate proper texts in the interactive process. During the interaction, a strong understanding ability is required, which is also essential in literary translation. Moreover, ChatGPT has reached or exceeded human-level performance in several text generation tasks, such as answering questions, providing suggestions, summarizing, and polishing texts (Liang 2022). Another advantage lies in its rich creativity. It can cooperate with users on creative writing tasks, such as learning a certain writing or translating style.

### **1.3 Research objectives**

ChatGPT, as an online translation tool, has aroused the interest of both professional translators and scholars,

but related research is very limited. Therefore, most people are not familiar with the status quo of ChatGPT translation, its literary translation abilities in particular. This paper aims to explore a comparative study of literary translation between ChatGPT translation and human translation through an empirical study of their translation of Lu Xun's novel *Kung I-chi*. Gladys Yang and Herbert Allen Giles' translation is used as a reference in this comparative study. This study centers around the following three questions: (1) Whether ChatGPT translation can rival manual translation? (2) What's the difference between ChatGPT translation and manual translation? (3) Through the comparison, how can we improve machine translation?

#### 1.4 Research significance

Through the comparison, the gap between ChatGPT and humans is revealed. It is necessary for us to adapt to the application of new technologies. Translation education needs to provide students with the opportunity to use translation tools and technologies to help them become familiar with and master these tools. At the same time, we need to pay attention to the latest developments in artificial intelligence translation technology. The study also aims to provide insights into and implications for ChatGPT translation. According to the difference between human and ChatGPT translation, AI translation companies can improve translation quality by comprehending the difference between Chinese and English, thus using proper words and diversifying sentence structure. ChatGPT translation still has a long way to go, but with the boom of artificial intelligence in the new era, its future is prospective.

## 2 Text Sources

The source text is chosen from Lu Xun's novel *Kung I-chi*, and the target text is ChatGPT online translation and manual translation, which is by Gladys Yang and Herbert Allen Giles and receives high praise from general readers and industry insiders; hereafter, the two translators will be abbreviated as Mr. Yang. As the source text of the manual and ChatGPT translation is the same, their translations are comparable and ideal experimental data.

Lu Xun is an influential Chinese writer, essayist, and translator who is commonly considered the father of modern Chinese literature. Famous for his satirical observations of early 20th-century Chinese society, he is celebrated as a pioneer of modern vernacular Chinese literature. *Kung I-chi* is a short story by Lu Xun. The novel describes the tragic Kong Yiji, who was mentally pedantic, insensitive, undiligent, and destitute under the poisoning of feudal decadent thoughts and imperial examination system, mixed in people's ridicule and banter, and finally swallowed up by the feudal landlord class. The length was not long, but it profoundly revealed the poisoning of the imperial examination system to the intellectual spirit and the essence of "cannibalism" of the feudal system at that time, which had strong anti-feudal significance.

### 3 Comparative Study in Lexical Level

Words are fundamentally symbols for features of the culture. Accordingly, the cultural situation in both languages must be known in translation, and the words that designate the closest equivalence must be employed (Nida 2015). The novel *Kung I-chi* involves a large number of culture-loaded words, which contain unique historical and cultural content. Cultural-loaded words and phrases are defined as those “loaded with specific national cultural information and indicate deep national culture, which is the direct and indirect reflection of a national culture in the structure of words and expressions” (Hu 1999). Due to their distinctive features, Newmark states that most ‘cultural’ words are easy to detect because they are associated with a particular language; though many cultural customs are described in ordinary language, they cannot be literally translated because literal translation would distort the meaning (Newmark 1988).

The examples chosen at the lexical level mainly deal with the translation of culture-loaded words, including material, social, and linguistic culture-loaded words.

#### 3.1 Material culture-loaded words

ST TT by	曲尺形大 櫃檯	短衣幫	長衫	酒店	九文大錢	書籍紙張 筆硯	描紅紙	咸亨酒店
Mr. Yang	A right-angled counter	Short-coated class	Long gowns	Wine shops	Nine coppers	Books, paper, bushes, and inks	Copy-book	Prosperity Tavern
ChatGPT	A large curved counter	The lower class	Long robes	Taverns	Nine large copper coins	Books, paper, and ink	The red paper	The Xianheng Hotel

**Table 1 The comparison of material culture-loaded words**

The novel is set in a certain historical environment and cultural context. Therefore, there are many representative and chronological items that are far from the target culture, and it is difficult to find their equivalents.

By contrastive analysis, we find that Gladys Yang and Herbert Allen Giles resorted to explanatory translation to ensure readability. These items are endemic to China, so the two translators focus on their shapes and functions. “a right-angled counter” shows a foreignizing translation in which the counter’s shape is depicted, and “counter” stresses its function. However, ChatGPT wrongly translates it into “a large curved counter”, which means circular arc. As the product of Chinese culture, “短衣幫” is translated into “short-coated class” by Mr. Yang, which stresses the class’s appearance, while ChatGPT translates it into “the lower class,” which directly shows its meaning. Both are feasible. “Wine shops” stresses the function while “tavern” shows a strong sense of

history. The character “大” in “九文大錢” has no actual meaning, which can be considered as a modal particle to some extent. Therefore, it is unnecessary to translate “大” into “large.” Moreover, exemplified by traditional Chinese culture, “書籍紙張筆硯” is translated into “books, paper, brushes and inks” by the translators. Brushes, rice papers, and inkstones are the traditional famous specialties of China. Therefore, instead of using “pen” which Western people are more familiar with, they also employ foreignizing translation to retain Chinese characteristics. Similarly, there is no counterpart to “描紅” in the Western world, so the translators translate it into “copy-book,” which means a reproduction of a written record. Founded in 1894, “咸亨酒店” is world-renowned. “咸” means “all” while “亨” means “prosperity and success,” so Mr. Yang’s translation is based on the word’s propitious meaning while ChatGPT applies to the approach of transliteration.

### 3.2 Social culture-loaded words

ST TT by	秀才	丁舉人	服辯	掌櫃
Mr. Yang	Pass the lowest official examination	Mr. Ding, the provincial scholar	Write a confession	The tavern keeper/ the employer
ChatGPT	A scholar	Mr. Ding	Defend himself	The boss/the shopkeeper

Table 2 The comparison of social culture-loaded words

The story is set at the end of the 19<sup>th</sup> century when the Qing government was corrupt, but the imperial examination system, which had been in place since the Sui and Tang dynasties still prevailed. A few scholars who passed the exam were awarded government office, but most people failed and were reduced to poverty. Under such a social background, many social culture-loaded words emerge in the novel.

Examinations were given on four levels: local, provincial, metropolitan, and national. “秀才” refers to people who pass the lowest level of examination. “A scholar,” translated by ChatGPT, cannot differentiate “秀才” from other levels. Rather than translating word-by-word, the translators reveal the word’s connotation. The translators apply to domesticating translation when rendering “舉人” and “服辯” into “provincial scholars” and “confession,” which correctly convey their meaning. “Mr. Ding” cannot show the status, and “defend himself” is a wrong translation.

### 3.3 Linguistic culture-loaded words

ST TT by	君子固窮	之乎者也	者乎	多乎哉? 不多也.
Mr. Yang	A gentleman keeps his integrity even in poverty.	Archaisms	A jumble of archaic expressions	Verily, not much, forsooth!
ChatGPT	Gentlemen are often poor.	Strange and incomprehensible language	Such a person	How many? Not many.

Table 3 The comparison of linguistic culture-loaded words

District exams tested candidates on their knowledge of the Confucian classics, and their ability to compose poetry on given subjects using set poetic forms and calligraphy. Therefore, the protagonist involves many Analects-related sayings.

Coming from the Analects, “君子固窮” means that a man of virtue maintains his ideals even in frustrations, but ChatGPT only focuses on its literal meaning. “之乎者也” vividly shows Kong Yiji is a perfect type of pedant. The four characters are modal particles that are meant to add supplementary meanings to the affective meaning of a sentence. However, Chinese modal particles have no equivalent part of speech in English, so the translators and ChatGPT translation fudge the translation and avoid specifics. But when translating “者乎,” ChatGPT’s is a wrong literal translation which is separated from the context and might confuse readers.

## 4 Comparative Study in Syntactic Level

Different from English, Chinese involves many short sentences with no obvious logical words. The definition of the term, Chinese Run-on Sentences (hereinafter referred to as CRS) is that CRS consists of a host of clauses or phrasal expressions/minor sentences juxtaposed and characterized by an absence of connectives (Shen 2012: 403 – 415). Chinese run-on sentences which are ruled out in written English grammar, are considered as a unique phenomenon in Chinese. To overcome these difficulties, the translation strategy of foreignization and domestication, the translation method of literal translation, and some translation skills, such as amplification and omission, should be adopted comprehensively in this translation task to make the target text more natural and readable. This part focuses on the subject of each clause, verb types, and connectives.

### 4.1 *The subject of each clause*

According to linguistics, the subject of Chinese is flexible, and all linguistic units can serve as subjects in a sentence while the subject of English is strict and only nouns or linguistic units functioning as nouns can serve as subjects. Therefore, when translating Chinese into English, we should focus on whether the subject is suitable in the target language.

#### Example 1

ST: 我愈不耐煩了, 努著嘴走遠。

TT of Mr. Yang: My patience exhausted, I scowled and made off.

TT of ChatGPT: I grew even more impatient, pursed my lips, and walked away.

ChatGPT translates the sentence word for word, which is moderate. However, in Mr. Yang’s translation, the first clause is transformed into absolute construction so that the translation is smoother and more compact.

#### Example 2

ST: 孔乙己喝過半碗酒, 漲紅的臉色漸漸復了原。

TT of Mr. Yang: After drinking half a bowl of wine, Kung would regain his composure.

TT of ChatGPT: After drinking half a bowl of wine, Kong Yiji's flushed face gradually returned to normal.

The two subjects in the source text are “孔乙己” and “臉色”. Mr. Yang merges the subjects into one, “Kung” by non-finite verbs while ChatGPT copies the word order, causing the inconsistency of subjects.

Machine translation usually mechanically copies the sentence structure of the source language while human translators can adjust the target text more freely based on the meaning, which shows that machine lacks the abilities of thinking, reasoning, and judgment as well as human's comprehensive knowledge and accumulated cultural knowledge, thus making a one-to-one choice within a limited range (Zou 2011: 935–938+956).

## 4.2 *Verb types*

In linguistic typology, as an analytic language, Chinese is one that expresses syntactic relationships in a sentence mainly by word order rather than using inflections which are prevalent in English, a synthetic language. Therefore, there are no finite and non-finite verbs in Chinese, as opposed to English. As a result, it is recommendable that non-finite verbs and absolute construction be applied in Chinese-English translation for the purpose of creating a vivid and varied target text.

### Example 1

ST: 在這些時候,我可以附和著笑,掌櫃是決不責備的。

TT of Mr. Yang: At such times, I could join in the laughter without being scolded by my master.

TT of ChatGPT: During those moments, I would join in the laughter, and the boss would never reprimand me.

The source text is composed of two minor sentences. ChatGPT translates it into a compound sentence with two finite verbs while Mr. Yang employs absolute construction to clearly show a hierarchical structure.

### Example 2

ST: 他不回答,對櫃裡說:「溫兩碗酒,要一碟茴香豆。」便排出九文大錢。

TT of Mr. Yang: Ignoring this remark, Kung would come to the counter to order two bowls of heated wine and a dish of peas flavored with aniseed. For this, he produced nine coppers.

TT of ChatGPT: He wouldn't respond, but would say to the counter, “Warm up two bowls of wine and bring a plate of fennel beans.” Then, he would take out nine large copper coins.

There are three consecutive actions: ignoring, ordering, and paying. The first two minor sentences are translated into a compound sentence by ChatGPT while Mr. Yang uses a non-finite verb.

Moreover, Western people are unlikely to use “bring” when ordering, so it is the result of a literal translation by ChatGPT, which might influence readability. In Mr. Yang's translation, he uses the word “produce”. “If you produce an object from somewhere such as your pockets or handbag, you bring it out into the open so that it can be seen. The word implies that, unlike other customers, he would not get wine on credit although he was short of money. By contrast, “take out” is plain.

### Example 3

ST: 孔乙己便漲紅了臉,額上的青筋條條綻出,爭辯道,「竊書不能算偷;……竊書……讀書人的事,能算偷么?」接連便是難懂的話,什麼「君子固窮」,什麼「者乎」之類……

TT of Mr. Yang: Then Kung would flush, the veins on his forehead standing out as he remonstrated, “Taking a book can’t be considered stealing. Taking a book, the affair of a scholar, can’t be considered stealing!” Then followed quotations from the classics, like “A gentleman keeps his integrity even in poverty,” and a jumble of archaic expressions...

TT of ChatGPT: Kong Yiji’s face would turn red, the veins on his forehead would bulge, and he would argue, “Taking books cannot be considered theft! Can the affairs of scholars be counted as theft?” This would be followed by a series of incomprehensible phrases like “gentlemen are often poor” and “such a person,”...

In Mr. Yang’s translation, “would flush” is the predicate in the main clause while “remonstrate” is the predicate in the adverbial clause of time, which stresses Kong Yiji’s embarrassment. On the contrary, ChatGPT simply considers three verbs as coordinating relations. It is feasible to translate “竊” into “take,” which can also mean “take something without permission” and be a euphemism for “steal.” Although “take” does not correspond to “竊” in the formal level of the mode, its euphemism indicates that Kong Yiji deliberately downplayed his act of stealing books, which is consistent with the tenor.

In a subordinate position, non-finite verbs can modify predicate without losing the sentence structure, so human translators make a conscious effort to compact sentences with non-finite verbs. On the contrary, machine translation overuses finite verbs corresponding to predicates in Chinese clauses, which results in mechanical and monotonous versions (Weng 2020: 134).

## 5 Comparative Study in Textual Level

### 5.1 Connectives

As there are no obvious connectives in Chinese run-on sentences, different translators might have different comprehension. When translating Chinese into English, translators tend to choose connectives according to the context of the source text and their subjective judgment while machine, lacking logical reasoning ability and emotion, is inclined to choose a more objective coordinating conjunction.

#### Example 1

ST: 掌櫃也不再問,仍然慢慢的算他的賬。

TT of Mr. Yang: The tavern keeper did not pursue his question, but went on slowly making up his accounts.

TT of ChatGPT: The shopkeeper didn’t ask any further questions and continued to slowly tally his accounts.

The two clauses in the source text are without connectives. Mr. Yang adds “but” to invest the target language with subjective feeling while ChatGPT connects the clauses with relatively objective “and”.



## 6 Conclusion

This study chose the burgeoning online translation tool, ChatGPT as its research subject, and tested its literary translation ability at lexical, syntactic, and textual levels. The research results show that generally speaking, its literary translation has achieved progress, and the translation is narrowly readable. In a certain level, such as general sentence translation, ChatGPT performs well. Traditional translation is limited by human cognitive ability and language skills and cannot cover all subtle differences between languages and cultures. But AI translation can handle more complex and diversified translation tasks through powerful computing power and machine learning algorithms. It can automatically learn and adapt to the characteristics of various languages and cultures, and realize more accurate, fast, and comprehensive translation. ChatGPT uses artificial intelligence technology and automated tools for translation and language processing, such as machine translation and speech recognition. It automatically processes languages through algorithms and models, reducing manual intervention. Through automated processing, a large number of translation tasks can be quickly processed, but there may be deficiencies in some specific language and cultural details. At the lexical level, at present, ChatGPT can hardly rival human translators, especially those who are sophisticated. Intelligent language services process languages through machine learning and algorithms. They do not have human emotion and judgment and can only process languages based on existing data and models automatically. Human translators are more adept at weighing their words given the context, the protagonists' characters, historical background, and other factors. Translators carry out translation and language processing through their professional knowledge and judgment. They can understand and convey the meaning and emotion of language, as well as the background and details of culture. Besides, human translation and machine translation show distinctive differences in terms of the subjects of clauses, verb types, and connectives. At the syntactic and textual level, ChatGPT's translation is mechanical and monotonous without flexible non-finite verbs and connectives while humans don't get bogged down on forms, taking advantage of verb types, varied sentence structure, and suitable connectives.

This study has a number of limitations. Firstly, it was based on only one of numerous literary works, so the findings and implications may not be the same as other types of books. Secondly, the samples chosen in the study were challenging even for many translators and the literary translation ability of ChatGPT might vary with the text's difficulty. Therefore, additional studies should be carried out for the purpose of achieving a deeper understanding of ChatGPT translation.

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