

A Comparative Analysis of Human Translation and AI Translation in Humorous Subtitles: A Case Study of Her Story

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Abstract. Artificial Intelligence (AI) has developed rapidly in recent years, and it has also been applied in the aspect of translation. But humorous expression remains a difficulty because of its high dependence on language and culture. In this research, Functional Equivalence Theory serves as an important reference for translation, and General Theory of Verbal Humor (GTVH) also offers crucial theoretical support for humorous effect's analysis. This research focuses on part of the subtitles in movie, *Her Story*, in order to analyze the differences between human translation and AI translation from the respects of general humor, linguistic humor and cultural humor. Through the comparative analysis, it is obvious that human translation shows its irreplaceable value in cultural sensitivity and creative expression. In contrast, AI translation still has limitations in dealing with humorous expressions, manifesting in contextual negligence, cultural differences, language structure error, communicative inadequacy. These translations can preserve only the literal meaning but lack the capacity to understand and decode deeper meanings, which will result in the loss of humor during the translation. At the present stage, AI is still considered as the auxiliary tool for human translators, supporting translators performing better in coping with profound expression.

Keywords: Functional Equivalence Theory, General Theory of Verbal Humor, Subtitle Translation, Artificial Intelligence

1. Introduction

With the development of China's society and economy, movies, an important cultural carrier, exerts a vital effect on cultural transmission and exchanges. Naturally, subtitle translation has become the key part of the cross-cultural communication. As a distinctive art form inherited by humans, humorous expressions have been highly welcomed due to the unique charm. In nowadays society, they are widely used in various pragmatic contexts, including film and television works [1]. Humorous expressions directly affect audiences' comprehension and empathy of plots because of their crucial role in conveying emotions. As a saying goes "Comedy doesn't travel", which means comedy will face sorts of challenges in the process of intercultural communication. To elaborate

further, it is the dependence on pun and cultural metaphor that causes these tasks posed by linguistic forms and cultural connotations during the translation process [2].

Existing researches mostly focus on analyzing humor translation strategies from the perspective of Functional Equivalence Theory, but the evaluation between human translation and AI translation has received less attention. Recently, AI has developed rapidly and has been put into practice in many areas; however, subtitles, especially humor subtitles demand more on accuracy, conciseness and cultural adaptations which still cannot be satisfied by AI. The unnatural and rigid processing always lead to “mechanical translation” or “cultural misunderstanding”.

The director of *Her Story*, Yihui Shao, is renowned for her style of sarcastic humor. She also used humorous and satirical expressions to reveal the current situation and the social predicament of women. So *Her Story* will serve as the example, and this research will compare different humor translation versions offered by humans and AI, systemically analyzing their performance in humor transmission in order to provide more efficient translation strategies and methods for the film industry.

2. Theoretical framework

This research chooses Eugene A. Nida's Functional Equivalence Theory as the core analytical framework. This theory includes four aspects: lexical equivalence, grammatical equivalence, textual equivalence, and stylistic equivalence. From Nida's perspective, every language shared a similar structure, especially the deep structure. So he mentioned that when the form contradicts the content in the translation, the content comes first. He emphasized that a good translation should let target-language audiences respond similarly and naturally as the source-language audiences [3]. In conclusion, Functional Equivalence Theory is suitable for the subtitling research because they are both audiences-centered.

In addition, to strengthen the theoretical explanation, this research also chooses the General Theory of Verbal Humor (GTVH) proposed by Attardo and Raskin as the auxiliary analytical framework to help identify the core contradictions in the source material. GTVH was proposed by two prominent scholars in the field of humor translation, Salvatore Attardo and Victor Raskin in 1991, which offered reliable references and foundations for this research. It graded different hierarchical models of humor, arranged in ascending order as follows: language, narrative strategy, target, situation, logical mechanism, script opposition [4]. In this classification, the lower the language level, the more concrete it becomes. At the same time, it will have less ability to create humor and make higher similarity of humor [5].

Functional Equivalence Theory plays its role in humor translation with respect to the dynamic evaluation system. When processing the humorous expressions in *Her Story*, it requires translators to ensure the equivalent transmission of the humor function first, then pursue the cultural adaptation, and finally retain the original form within the possible range. Besides, GTVH serves as a supplementary tool to locate the core elements of humor.

About the samples, this research chooses the official film subtitles as the human translation. They are the fourth version translated by the director, Yihui Shao and her professor friend.

AI subtitles are based on the translation offered by the Viitor translation application. Compared to other platforms, it has obvious advantages. First, DeepSeek and ChatGPT, which have both gone viral recently are not suitable. Though equipped with a sufficient and rich database, they do not support video translation up to now. This drawback will not allow them to translate in line with the coherent context. Moreover, in contrast to other apps that support video or audio translation, Viitor can not only carry out real-time translation, but also can process subtitles at a fast speed, meeting the

need of instantaneity. Furthermore, it supports 19 languages for free, which demonstrates that Viitor will cover more target audiences with higher promotion potential. According to the above analysis, this research chooses Viitor as the AI translation sample.

3. Translation strategy

According to Schmitz's classification of humor, it can be classified as general humor, linguistic humor and cultural humor [6]. This categorization offers a systematic framework for analyzing translation strategies.

General humor, also known as "humor based on reality", is the easiest humor that can be understood by audiences from different countries, regardless of cultural limitations, such as some absurd plots. Linguistic humor mainly relies on the intrinsic traits of the language, achieving the effect through the voice arrangement, special usage of words or particular rhetoric, such as puns, phonetic mix-ups. Cultural humor includes plenty of expressions involving native cultures, such as idioms, customs, allusions and so on [7]. Translators should equip themselves with rich knowledge about the ideology, religion and values of the source culture; only in this way can they transmit the humor correctly. Both linguistic humor and cultural humor are of certain difficulty.

3.1. General humor

Table 1. Example 1

Lines	挺会掐点啊,我这搬完了,你来了.
Human translation	Perfect timing,I just finished move in and look who shows up.
AI translation	You're quite punctual. By the time I finished moving, you came over.

The concrete context is when Tiemei finished moving, her ex-husband just showed up coincidentally in a rush. In order to mock him, Tiemei said the words above.

From the perspective of semantic equivalence," perfect timing" translated by human corresponds to the sarcastic tone of the Chinese version accurately, while "quite punctual" translated by AI is excessively formal, losing the irony of the character as Table 1 shows. From the perspective of stylistic equivalence, human translation uses colloquial expression." Look who shows up" vividly reproduces Tiemei's surprise and ridicule towards the unexpected appearance of her ex-husband. This translation conforms to the relation and the setting of the plot. In contrast, "By the time... you came over" in Table 1 is too straightforward to convey any emotion. Human translation constructs the humorous effect of contrast between expectation and reality through the irony and dramatic presentation, which can allow audiences to understand Tiemei's intention immediately. However, AI translation merely states the fact and completely misses the humorous elements of the source context. In conclusion, it is human translators' advantage to not only maintain the semantic accuracy, but also to strengthen the humorous effect by using natural colloquial expressions and irony in conveying emotions and reproducing the style.

3.2. Linguistic humor

Table 2. Example 2

Lines	什么大麦小麦,你是没防晒所以老得快.
Human translation	Natural tan? More like a sunblock ban.
AI translation	What do you mean by 'big or small'? You need to apply sunscreen to avoid aging quickly!

Tiemei's ex-husband and her admirer Ma are in a "male competition", her ex-husband insinuated to Ma that he looked quite old due to his dark skin. Ma retorted that "It's my natural tan", and then her ex said the words above. In the end, the little girl commented supplementally "Dad, you are rhyming".

From the perspective of functional equivalence, "Natural tan? More like a sunblock ban." achieves dynamic equivalence. Human translation as Table 2 shows not only transmits the core semantic information of "natural tan=no sun protection" correctly but also translates the source material to something that can be more easily understood by English audiences through creative transformation. From the perspective of formal equivalence, human translation uses "tan" and "ban" to reproduce the wordplay of rhyming, which enables English audiences to understand the same linguistic humor as Chinese audiences. At the same time, human translation maintains and intensifies the sharp and ironic tone of the ex-husband through brief rhetorical questions. However, though AI translation transmits basic meaning, it shows obvious drawbacks in cultural adaptation, humor reproduction and style preservation. Especially AI still lacks the ability to translate according to the context, which means it cannot analyze and identify the indicative request of the translation most of the time. In this context, AI fails to meet the need of the rhyming translation, which is mentioned later, leading to the semantic breakdown. Human translation reconstructs the multidimensional equivalence in the English cultural framework through creative treason and finally achieves Nida's goal perfectly.

Table 3. Example 3

Lines	谁让你那么爱当妈
Human translation	That's what you get from momsplaining
AI translation	Who told you to be such a mom?

Tiemei encouraged girls to go on a business trip for training but opposed by college A for limited expenditure and the undesirable development of the account. He also insinuated Tiemei was "a happy, strong and energetic single mother". Then they walked away and argued, and college B left the remark above.

The reason why college B gave this ironic comment is because Tiemei reaped what her sowed because of her excessive care and consideration towards others. Human translation first grasps the ridicule and satire, the core of the semantic meaning. So it uses "That's what you get" as Table 3 shows, which frequently refers to negative results in an English context. It directly explicates the implied meaning through commonly accepted expressions in English. Then comes the imitative presumption of "momsplaining". Actually, there is no such word in English that can convey the same meaning as Chinese, so the literal translation is not the best choice, and it will confuse the audience, too. So the human translation activates audience cognition through lexical analogy to "mansplaining". "Mansplaining" was coined by Rebecca Solnit, used to describe how men

underestimate women’s cognition subconsciously and preach at them, so English-speaking audiences were quite familiar with the affix”-splaining” [8]. That’s why human translation uses this word in a special way to break down the linguistic barriers. Therefore, human translation achieves script opposition through the ironic representation and imitative presumption and ultimately achieves the delivery of humor. In contrast, AI translation first misinterprets the tone as accusatory as Table 3 shows, then the selection of” mom” is quite straightforward without any highlights, which will even cause misunderstanding due to the instantaneity of the subtitle. For example, some people might think Tiemei is as nagging as a typical “mother”, or it is the belittlement of a mother. All these kinds of misunderstandings will result in the loss of humor.

3.3. Cultural humor

Table 4. Example 4

Lines	谁知道你家这儿这么麻烦啊
Human translation	Didn't realize your building was Fort Knox.
AI translation	Who knew your place would be so troublesome?

Ye made an appointment with the man to meet at his home, but she was strictly refused by the guard. She could do nothing but wait and said the complaints above to the men.

From the perspective of functional equivalence, human translation bridges the cultural gap implied by Chinese through the replacement of cultural imagery, which achieves semantic equivalence effectively. The exaggerated expression makes audiences understand the strictness immediately, and it also maintains the complaining tone on the basis. “So troublesome,” offered by the AI translation in Table 4 transmits the basic information only, losing humor and artistic effect [9]. From the perspective of GTVH, human translation makes a strong contrast between the residential building and the military base. It also uses a culturally universal metaphor on the logical level to reproduce the dramatic complaints caused by the annoying guard. In contrast, AI translation fails to construct a humor mechanism on six levels of GTVH, resulting in a plain expression. In conclusion, it is the transformation of culture-specific items that can achieve an equivalent effect.

Table 5. Example 5

Lines	美国人素质不行的啊
Human translation	Americans, right?
AI translation	Americans lack of quality.

In order to encourage the girl to perform on the stage, Ye said that even Taylor Swift was laughed at by the audience because of her mistakes. The girl asked curiously:” How could they do that to her?” and Ye answered with the above words.

Human translation chooses to translate it in an ambiguous way, because translators must take the target audience’s acceptance of the source culture into consideration. If translators translate subtitles directly as the AI version as Table 5 shows, it will definitely offend American audiences. So human translation only keeps the ironic tone, conveying the joking tone between friends to show that it is not an accusation or even discrimination [10]. So human translation achieves transition from the easiest equivalence of words to the most complex equivalence of function. It pursues not the form, but the communicative function implied by the words.

4. Conclusion

This research reveals the crucial mechanism of the intercultural communication in screen humor through the comparison between human translation and AI translation of humor subtitles in *Her Story*. Human translation shows its irrepressible advantages in the mastery of contextual and cultural emotions. The precise application of theory and the consideration of audience's cognition and communicative effects reflects the human translation's profession. In contrast, despite the advantages of efficiency and cost of AI translation, it can only convey the literal meaning, showing obvious limitations in humor transmission. This current situation highlights AI's deficiencies in understanding context and cultural characteristics.

This research also offers important insights into translation practices. Humor translation is the essence of cultural recreation which requests translators to possess both cultural sensitivity and theoretical literacy. In order to improve AI translation's performance in humor translation, researchers can integrate the theoretical framework into the training model or build a database of humorous expressions in the future. But it is important to point out that, all these improvements cannot copy the cultural sensitivity and creative expression of human translators, so AI will be an auxiliary tool for human translators to help achieve better human-AI collaboration in the future.

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