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Literary Translation and Artificial Intelligence Between Accuracy and Aesthetics

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الترجمة الأدبية والذكاء الاصطناعي بين الدقة والجمالية

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ABSTRACT

This study aims to explore the aesthetic and accuracy aspects of literary translation and compare the production of artificial intelligence-based translation, such as translation by ChatGPT or DeepL, with human translation, which relies on the translator's literary and cultural sense. The study focuses on the analysis of selected literary texts from Arabic novel for (Nasser Abu Srour, The Tale of a Wall, 2022) that translated from Arabic into English by (Luke Leafgren, 2024) , comparing the two versions in terms of narrative voice, rhetorical imagery, psychological rhythm, and dramatic irony. The study finds that human translation remains superior in preserving literary aesthetics and stylistic depth, despite the significant development in the capabilities of neural translation systems.**Key words:** aesthetic equivalence, machine translation, human translation, stylistic aesthetics, literary translation.

الخلاصة

تهدف هذه الدراسة الاكاديمية الى استكشاف جانب الجمالية و جانب الدقة في الترجمة الادبية ، ومقارنة نِتاج الترجمة الآلية ،مثل ترجمة جات جي بي تي و ديب ال ، بالترجمة البشرية التي تعتمد على الحس الادبي والثقافي للمترجم. تركز الدراسة على تحليل نصوص ادبية مختارة من الرواية العربية (حكاية جدار) للكاتب (ناصر ابو سرور،٢٠٢٢) وترجمتها الى اللغة الانكليزية من قبل (لوك ليفغرين، ٢٠٢٤) ، ومقارنة هذ التراجم من حيث الاسلوب السردي و الصور البلاغية و الايقاع النفسي و المفارقة الدرامية. وتخلص الدراسة الى ان الترجمة البشرية متفوقة في الحفاظ على الجماليات الادبية والعمق الاسلوبي، على الرغم من التطور الكبير في قدرات انظمة الترجمة العصبية.

الكلمات المفتاحية: التكافؤ الجمالي، الترجمة الآلية، الترجمة البشرية، الجمالية الاسلوبية، الترجمة الادبية.

1.Introduction

Literary translation constitutes one of the most sophisticated and complex fields of translation, due to the rhetorical, cultural, and aesthetic elements it encompasses, requiring the translator to possess a creative ability that goes beyond literal rendering. In recent years, artificial intelligence technologies particularly neural machine translation (NMT), have played an increasing role in the translation process. However, the question remains: Can artificial intelligence convey the aesthetic dimension of literary texts in the same way humans can?

Stylistic aesthetic is one of the most complex issues in the field of literary translation. It is not limited to conveying the semantic meaning of the text, but extends to reproducing the artistic and emotional impact that the original text has on its reader. This issue becomes even more complex when comparing human translation with AI translation, especially in narrative texts of reflective and philosophical nature.

2.Research Problem

The study problem lies in the disparity between machine translation and human translation in conveying the aesthetic characteristics of literary texts, which can lead to the erosion of the text's aesthetics and the loss of the original spirit of the work.

3. Research Objectives

a. Comparing machine and human literary translation from the perspective of aesthetics and stylistic accuracy.
b. Evaluating the ability of artificial intelligence to process rhetorical images.
c. Analyzing the challenges facing machine translation in conveying cultural meaning and semantic accuracy.

4. Research Questions

a. To what extent is artificial intelligence capable of preserving the aesthetic structure of literary texts?
b. Can machine translation convey implicit meanings, similes, and metaphors as accurately as a human translator?
c. What are the stylistic and semantic difference between the two translations in narrative texts?

5. Literature Review

The link between literary translation and artificial intelligence is an emerging field in translation studies that has gained increasing attention in recent years. Previous studies demonstrate that AI is capable of processing subtle linguistic structures, but it faces significant challenges in conveying artistic aesthetics and literary rhetoric.

5.1. Bassnett, Susan (2013): Literary Translation Studies

Susan Bassnett is one of the most prominent theorists of literary translation. In her book, Translation Studies, she points out that literary translation cannot be reduced to conveying meaning alone, but rather includes "conveying the rhythm, image, and cultural layer of the text." Her study emphasizes that translation requires an "artistic and creative sense" that cannot be programmed.

5.2. Castilho et al. (2017): Neural Translation Quality vs. Human Translation

In an experimental study published in The Prague Bulletin of Mathematical Linguistics, researcher Sheila Castilho and colleagues compared human and neural translations. They concluded that machine translation outperforms simple, clear sentences, but is weaker in ambiguous and rhetorical texts. The study recommended against the use of neural translation in literary texts without human review.

5.3. Toral & Way (2018): Evaluation of Machine Literary Translation

In a study titled "What Level of Quality Can Neural Machine Translation Attain on Literary Text?", Toral and Way tested the performance of neural translation on Spanish literary texts. The results showed that machine translation can produce accurate language, but it loses poetic tone and cultural metaphor, making it insufficient for literary translation without human review.

5.4. Koehn, Philipp (2020): Neural Translation and Artificial Intelligence

In this book, Neural Machine Translation, Koehn discusses how machine translation has evolved from statistical models to artificial neural networks. While he acknowledges the improvement in linguistic performance, he points out that these systems do not understand cultural context or metaphorical meaning, making them "imperfect tools in literary fields."

5.5. Vanmassenhove, Eva (2021): Artificial Intelligence and Translation Studies

In an article titled "Machine Translation and the Future of Translation Studies," Eva Vanmassenhove discussed developments in artificial intelligence in translation, warning against relying solely on algorithms for texts that require "emotional and cultural understanding." She noted that linguistic aesthetics remain beyond the scope of machine perception.

All previous studies indicate that neural translation has seen significant development in the field of non-literary texts (such as technical documents or news), but literary translation still requires a high degree of human sensitivity and linguistic creativity. Machine translation also struggles with understanding metaphor, cultural connotations, and conveying stylistic aesthetics-characteristics still unique to human translation.

5.6. Research Gap

Despite numerous studies examining the performance of neural machine translation (NMT) compared to human translation, most of these studies have focused on:

a. Non-literary texts such as news, technical documents, and functional texts, without sufficiently delving into literary translation, particularly in terms of stylistic aesthetics and rhetorical dimensions.The lexical and semantic aspects of translation (such as grammatical and idiomatic accuracy), without adequate analysis of aesthetic and artistic elements, such as rhythm, metaphor, inter textuality, and poetic imagery in literary texts.The absence of studies examining modern translation technologies such as ChatGPT and DeepL in light of aesthetic and literary analysis, as previous studies have focused primarily on Google Translation systems or

previous neural translation systems.The paucity of comparative empirical studies that use applied examples of narrative texts, with a dual analysis of aesthetic and perspective.The paucity of research that integrates multiple disciplines (translation, artificial intelligence, literary aesthetics), as research still suffers from a disconnect between the technical aspect and the literary critical aspect.Despite the increasing reliance on artificial intelligence in translation, there remains a clear gap in studies examining the extent to which modern machine translation systems (such as ChatGPT and DeepL) can convey literary aesthetics and stylistic precision in narrative texts, compared to human translation, which relies on deep cultural and stylistic expertise. Integrating aesthetic analysis with technical evaluation remains largely absent, calling for in-depth comparative studies that combine artificial intelligence tools with literary critical approaches.

6. Methodology

- Methodology used: Comparative analytical approach.
- Sample: Four narrative passages taken from Arabic literary work for Nasser Abu Srour's novel (The Tale of a Wall)
- Tools: Paragraphs translated using ChatGPT and DeepL, and compared with Published human translations for Luke Leafgren.
- Evaluation criteria: Rhetorical imagery, musical tone, stylistic structures, cultural translation, and semantic accuracy.

7. Theoretical Framework

a. Literary Translation: Literary translation is defined as the transfer of literature, with its aesthetic and eloquent quality, from (SL) into (TL). It requires a high level of linguistic and cultural appreciation, and the ability to recreate the aesthetic impact of the original text (Bassnett, 2013).

b. Neural Translation and Artificial Intelligence: Neural Machine Translation (NMT) uses artificial neural networks trained on millions of texts and continually improves, but it lacks the contextual and cultural dimensions of literary texts (Koehn, 2020)

8. Practical Aspect (Applied Analysis)

8.1.1. Study Tools : (An Applied Study of Four Samples)

8.1.2. Sample of Literary Texts:

Four narrative passages were selected from Arabic literary work for Nasser Abu Srour's Novel, The Tale of a Wall, 2022)

8.1.3. Translation tools used:

a. Translation using the ChatGPT model.
b. Translation using DeepL Translator.
c. Professional published human translation for (Luke Leafgren, 2024) .

8.1.4. Analysis tools:

a. Rhetorical analysis (rhetoric, similes, and metaphors).
b. Linguistic and stylistic analysis (sentence structure, linguistic shift, rhythmic meter).
c. Semantic and cultural analysis.

8.2. Evaluation and Analysis Criteria

Four main criteria were adopted in evaluating the translation:

a. Semantic Accuracy:

The extent to which the translation adheres to accurately conveying the original meaning without unjustified omissions or additions.

b. Stylistic Aesthetics:

Preserving the internal rhythm of the sentence and the rhetorical imagery.

c. Cultural Load:

The translation's success in conveying the cultural and historical cues contained in the text.

d. Linguistic Naturalness:

The fluidity of the translated language and its acceptability by the English recipient.

8.3. Comparative Analysis of Texts:

This section aims to analyze stylistic aesthetic in four selected samples from the novel, The Tale of a Wall, by comparing machine translation (ChatGPT and DeepL) with the human translation performed by Luke Leafgren, focusing on the elements of narrative voice, rhetorical imagery, psychological rhythm, and dramatic irony.

8.3.1: First Sample

" في خريف عام ١٩٨٧، كنت على وشك ان اتم الثامنة عشر من عُمري . كنت قَد رتبت اولوياتي وشعرت انني على المَسار الصحيح. لم تكن احلامي لتُقيد بتلك الفترات الطويلة من الوقوف عند حدود مُخيمي، اتمتم بالغيرة والغَضب لما ارى على الجانب الاخر. كان نظام كوني من شُموس واقمار ومجرات خفية يساعِدني على تحقيق اهدافي، بعضها متواضِع والبعض الاخر مُعقد للغايةِ."

a. ChatGPT translation:
" In the fall of 1987, I was about to turn eighteen years old. I had arranged my priorities and felt that I was on the right path. My dreams were not to be restricted by those long periods of standing at the borders of my camp, muttering with jealousy and anger at what I saw on the other side."
b. DeepL translation:
" In the autumn of 1987, I was about to reach my eighteenth birthday. I had organized my priorities and felt I was on the right track. My dreams would not be limited by those long periods of standing at the edge of my camp, whispering jealousy and anger at what I saw on the other side."
c. Human translation: for Luke Leafgren,
" In the fall of 1987, I was about to turn eighteen. I had organized my priorities and felt I was on the right track. My dreams would not be constrained by those long periods of standing at the limits of my camp, churning with jealousy and anger because of what I saw on the other side. A cosmic matrix of suns, moons, and hidden galaxies was helping me to achieve my goals, some modest and others exceedingly complex."

Analysis:

	Standard	**ChatGPT translation**	**DeepL translation**	**Human translation**
1-	**Rhythm**	**Middle**	**Good**	**Very high**
2-	**Internal music**	**Weak**	**Middle**	**High**
3-	**Rhetorical images**	**Transcribed verbatim**	**Softened**	**Reproduced**
4-	**Textual coherence**	**Limited**	**Good**	**Artistically cohesive**

Table no. 1

This sample reflects the moment of individual consciousness formation, where chronological narrative, inner reflection, and an early sense of constraint. The aesthetic here stems from the narrative voice that not only describes reality but also evaluates it emotionally.

Machine translation here preserves apparent meaning, and chronological order. However, it loses psychological tension, and transforms the inner voice into a declarative statement, which weakens the aesthetic dimension associated with self-formation.

This sample reveals that machine translation, whether by ChatGPT or DeepL, adhered to the syntactic structure of the Arabic text, resulting in a sound semantic transfer, but it lacked the tense narrative rhythm characteristic of the original text.

In contrast with the human translation through reshaped the phrase "churning with jealousy and anger" to convey the psychological state rather than merely describing it, which aligns with Nida's concept of dynamic equivalence (Nida, 1964).

8.3.2.: Second Sample

" النجوم والاجرام السماويةُ التي لا تعد في السماءِ من فوق اثبتت كَم يمكن ان يكون العَملُ سهلا. عندما كُنت طفلا، تعلمتُ حركاتهم ومواقعهم المتغيرة، وكانت كُلها جميلةً بالنسبة لي."

a. ChatGPT translation:
" The countless stars and celestial bodies in the sky above proved how easy the task could be. When I was a child, I learned their movements and changing positions, and they were all beautiful in my eyes."
b. DeepL translation:
" The innumerable stars and celestial bodies in the sky above showed how easy the task could be. As a child, I learned their movements and shifting positions, and they were all beautiful to me."
c. Human translation: for Luke Leafgren,
" The innumerable stars and celestial bodies in the sky above proved how easy the task could be. As a child, I came to know their movements and their shifting positions, which were all so lovely to me."

	Standard	ChatGPT translation	DeepL translation	Human translation

1-	Meditative Rhythm	Flat	Flat	Stepped
2-	Poetic Dimension	Inanimate	Inanimate	Living
3-	Relationship self/universe	Cognitive	Cognitive	Existential
4-	Aesthetic Impact	Weak	Middle	High

Table no. 2

Analysis:

This sample is based on a symbolic, contemplative language, where stars and celestial bodies are transformed from descriptive elements into aesthetic signs bearing connotations of freedom, existential vastness, early knowledge, and escape from spatial constraints. The aesthetic here does not stem from the individual element alone, but from the relationship between the self and the universe, rhythmic slowness, and intimacy in vision. While a ChatGPT and DeepL produced translations with a deficient aesthetic, these machine translations offer language that is grammatically correct, semantically accurate, but emotionally neutral. The using of the verb in this example "I learned their movements" is functional, instructional, and technical; which does not reflect the existential relationship between the child and the sky, but rather transforms the experience into a rational cognitive activity.

The aesthetic effect of this is to emptied the image from its symbolic dimension, reduced the reflection of the description, and loosing the poetic dimension.

Human translation, however, employed the phrase "came to know" instead of "learned" a subtle stylistic shift that imbues the verb with both emotional and cognitive dimensions, thus enhancing the reflective nature of the text. The aesthetic here lies not in meaning, but in suggestion, something that machine translation cannot replicate.

8.3.3: Third Sample

" الجريمة المتمثلة في اِنتزاع قَضمة خُبز يائس جَمعت تلك العناصر معا في مُجتمع موَحد إنفجر في غضبٍ ونهضا معاً في إنتفاضة الحجارة."

a. ChatGPT translation:

" The crime of taking a desperate bite of bread brought those elements together into a unified society that exploded in anger and rose together in the Intifadha of Stones."

b. DeepL translation:

" The crime of snatching a desperate mouthful of bread united those elements into a single society that erupted in rage and rose together in the Stone Intifadha."

c. Human translation: for Luke Leafgren,

" The crime of snatching a desperate mouthful of bread bound those elements together into a unified society that exploded in rage and rose together in the intifada of stones."

Analysis:

	Standard	ChatGPT translation	DeepL translation	Human translation
1-	Moral Paradox	Weak	Weak	Strong
2-	Dramatic Irony	Limited	Middle	High
3-	Emotional Charge	Low	Middle	Very High
4-	Linguistic Intensity	Literally	Literally	Artistically

Table no. 3

This sample carries a stark aesthetic paradox; "crime" which does not signify a criminal act, but it signifies an act of survival "a bite of bread" the aesthetic here rests on shock and moral contradiction. Losing of irony in ChatGPT translation in : (the crime of taking a desperate bite of bread); although the translation here is semantically correct but the verb "taking" is neutral and does not imply coercion or violence, so it softens the impact.

The machine translation treats the event as a historical fact, while human translation transforms it into a collective dramatic image.

Leafgren's choice of "snatching" reflect an aggressive act, swift, and forcful; this act evokes tension, cruelty, and moral irony which maintains the collective dramatic character of the text. Then the using of the verb "bound" lends the text a stronger semantic coherence than machine verbs like "brought" and "united" reflecting a narrative sense that transcends literal translation.

8.3.4: Fourth Sample

"قبل اسبوعين ، خرجت من حالةٍ من اللامبالاةِ الطويلةِ وقَررتُ ان اقرأ كتابا لكيرغيغارد ، حيثُ يتحدث عن الحبِ ، ويزعمُ ان افضل طريقةٍ للحفاظ عليه هي تحرير الحبيبِ ورفض كل الغرائزِ التملكيةِ."

a. ChatGPT translation:
" Two weeks ago, I came out of a long state of apathy and decided to read a book by Kierkegaard. he was talking about love and claimed that the best way to preserve it is to free the beloved and reject all possessive instincts."
b. DeepL translation:
" Two weeks ago, I emerged from a long period of indifference and decided to read a book by Kierkegaard. In it, he speaks about love and argues that the best way to preserve it is to liberate the beloved and reject all possessive impulses."
c. Human translation: for Luke Leafgren,
" Two weeks ago, I emerged from an extended about of apathy and decided to read a book by Kierkegaard. In the book he talks about love, arguing that the best way to preserve it is to release the beloved and to deny all possessive instincts."

Analysis:

	Standard	ChatGPT translation	DeepL translation	Human translation
1-	Rhythm	Balanced but rigid	Smother than ChatGPT	Psychologically progressive
2-	Tone	Explanatory	Soft interpretation	Contemplative
3-	Relationship with the reader	Informatics	Quasi-emotional	Emotional

Table no. 4

This sample blends subjective experience, philosophical reflection, and the concept of immaterial freedom. The aesthetic here is serene, profound, and based on thinking through narrative. The Arabic text does not present an abstract philosophical idea, but rather it employs philosophy as an extension of subjective experience, and connects love and freedom within the context of imprisonment and confinement.
Machine translation treats the text as a summary of a philosophical idea, separates the idea from personal experience, and weakens the connection between the psychological context (apathy) and the intellectual stance. Example: "claimed that the best way to preserve it .."; the verb claimed carries a cold, argumentative tone that clashes with the calm reflection in the original text.
The fundamental difference lies in the following:
- Machine translation translates what was said.
- Human translation translates why it was said.

This is what machine translation systems lack due to the absence of contextual and existential awareness.
This sample plays a pivotal role in the narrative, as it:
- Shifts the narrative from the external (event) to the internal (idea).
- Represents a transition from physical constraint to conceptual freedom.
- Enhances the philosophical nature of the text.

Human translation has successfully preserved this, while machine translation merely conveys the idea without its impact.

Applied Results

a. Artificial intelligence demonstrated acceptable ability in translating direct and accurate sentences, but it faltered when it came to sentences requiring aesthetic interpretation.
b. Human creativity remains superior in dealing with symbolism, metaphor, and cultural tropes in literature.
c. Machine translations lacked the necessary shifting structures and natural literary style, despite their superior speed and lexical structure.
d. This study confirms that literary translation remains, in its essence, a human creative act that cannot be reduced to algorithms, no matter how advanced they may be.

8.4. Practical Summary

The field study confirms that artificial intelligence can be an effective supporter in aspects of literary translation, particularly at the level of the text's basic structure. However, reshaping literary aesthetics and stylistic precision requires human intervention with a high linguistic and cultural sensitivity.

9. Analysis and Discussion

Comparative analysis of translated narrative texts shows that artificial intelligence has reached an advanced level in providing lexically accurate translation. However, it still suffers from shortcomings on several crucial levels related to literary aesthetics, which can be analyzed through the following levels:

9.1. **Stylistic Aesthetics in the First Sample : (Narrative Voice and the Formation of Self-Awarness)**

The first sample reflects a pivotal moment in the formation of the narrator's self-awareness, where chronological narration blends with inner reflection in a seemingly calm linguistic structure, yet one charged with underlying psychological tension. The aesthetic here stems from the narrative voice, which expresses the experience from within, not merely from a presentation of facts.

Machine translation demonstrates a clear ability to convey the general meaning of the text, but it tends to transform the narrative voice into a direct, declarative discourse, resulting in a diminished psychological rhythm and a loss of emotional depth. This transformation exemplifies prioritizing semantic equivalence over aesthetic equivalence.

In contrast, human translation preserves the reflective character of the narrative voice, through linguistic choices that highlight the inner feeling and reshape the narrative rhythm in harmony with the emotional experience of the original text, which is consistent with the concept of dynamic equivalence that focuses on the effect of the text on the recipient (Nida, 1964).

9.2. **Stylistic Aesthetics in the Second Sample: (Contemplative Language and the Cosmic Image)**

The second example is based on a symbolic, contemplative language, in which the sky and stars transform into an aesthetic space that replaces walls ans constraints, carrying connotations of freedom and existential vastness. Here, aesthetics stem from the intimate relationship between the self and the world, not merely from external description.

Machine translation treats this image as a direct visual description, accurately conveying the vocabulary but stripping it of its suggestive dimension, reducing the contemplative experience to a purely relation cognitive activity. This flattens the symbolic image and diminishes its aesthetic impact.

On the other hand, the human translation here succeeds in preserving the contemplative dimension of the image, through a linguistic formulation that highlights the emotional relationship between the narrator and the universe, and reduces the aesthetic suggestion inherent in the original text, which is consistent with the concept of pragmatic equivalence in literary translation (Baker, 2018).

9.3. **Stylistic Aesthetics in the Third Sample: (The Collective Moral and Dramatic Paradox)**

The third sample relies on a sharp aesthetic paradox, namely the characterization of the act of survival as a "crime" within a charged historical and political context. The aesthetic here stems from the moral shock and dramatic intensification that transforms the individual event into a symbolic collective act.

Machine translation conveys this passage with semantic accuracy, but it softens the paradox by choosing relatively neutral words, thus diminishing the emotional charge and transforming the text into a narrative closer to a historical report.

In contrast, human translation preserves the dramatic character of the text through sharp lexical choices and a rising linguistic rhythm. These elements reproduce the moral paradox and maintain the aesthetic shock that constitutes the essence of this passage, aligning with Venuti's view of the centrality of aesthetic impact in literary translation (Venuti, 2017).

9.4. **Stylistic Aesthetics in Sample Four: (Philosophical Reflection and Existential Freedom)**

Sample four represents a shift from external narration to philosophical reflection, where philosophical through is employed as an extension of subjective experience within the context of constraint. The aesthetic here stems from the contemplative tranquility and psychological gradation that connect the philosophical idea with personal experience.

Machine translation treats this passage as an abstract intellectual proposition, separating the idea from its psychological context. This weakens the aesthetic dimension and transforms the text into a straightforward philosophical summary.

Human translation, however, succeeds in preserving the organic relationship between the idea and the experience, reproducing the contemplative tone of the text and achieving an aesthetic based on interpretation rather than explanation, and on suggestion rather than declarative statement.

9.5. **A Comprehensive Aesthetic Comparison:**

The comparison of the four samples shows that machine translation excels at conveying semantic meaning and grammatical consistency, but it fails to capture the stylistic aesthetics based on the rhythm, symbolism, and

narrative voice. In contrast, human translation demonstrates its ability to reproduce the aesthetic impact of the text, thanks to its awareness of the cultural and psychological context and its stylistic sensitivity.

Through this treatment, it appears that aesthetics and accuracy in literary translation require complex cognitive and taste tools that are still beyond the capabilities of current artificial intelligence, placing a greater responsibility on the human translator in literary and artistic projects.

10. Results

- Artificial intelligence has shown significant progress in lexical accuracy, but it remains weak in conveying rhetorical and symbolic aesthetics.
- Human translation has the ability to reshape aesthetic impact, particularly in texts that rely on poetic imagery and linguistic manipulation.
- There are future challenges to improve AI to be more culturally and aesthetically aware.

11. Conclusions

Artificial intelligence is an assistive tool in literary translation, but it cannot yet fully replace human creativity. Literary translation also requires aesthetic judgment, which algorithms do not provide in the way that a creative translator can.

12. Recommendations

- Avoid relying entirely on machine translation for literary texts.
- Integrate artificial intelligence as an assistant to translators, not as a substitute.
- Develop intelligent translation programs trained on world literature and its aesthetic and semantic values.

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