

A TRANSCULTURAL-COMPARATIVE STUDY OF ARTIFICIAL INTELLIGENCE AND TRANSLATOR PRACTICE IN ENGLISH UZBEK LITERARY TRANSLATION

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Abstract:

This article analyzes the possibilities of using artificial intelligence technologies in translating literary works from English into Uzbek and the practical experience of professional translators from a transcultural and comparative perspective. The study compares translations generated by artificial intelligence systems such as ChatGPT, DeepL, and Google Translate with translations produced by professional human translators. Particular attention is paid to the translation of metaphors, idioms, national-cultural units, realia, and pragmatic meanings. The study also examines the extent to which artificial intelligence can ensure stylistic, semantic, and cultural equivalence in literary texts. The findings demonstrate that artificial intelligence is an effective tool for accelerating the translation process; however, professional translator involvement remains necessary when translating complex cultural and aesthetic units.

Keywords: Artificial intelligence, literary translation, transcultural study, comparative analysis, ChatGPT, DeepL, Google Translate, pragmatics, idioms, metaphor.

Introduction

In recent years, the rapid development of artificial intelligence technologies has had a significant impact on linguistics and translation studies. In particular, systems developed on the basis of Neural Machine Translation have considerably increased the speed and accuracy of the translation process. Platforms such as ChatGPT, DeepL, and Google Translate are now capable of translating not only everyday texts but also literary works. However, literary translation is not merely the transfer of information from one language into another; it is a process of recreating aesthetic, stylistic, and cultural layers. A literary text is distinguished by the author's individual style, system of imagery, emotional and expressive means, and units specific to national culture. Therefore, translating such texts requires not only linguistic knowledge but also intercultural competence. The adequate transmission of metaphors, phraseological units, historical and national realia, and pragmatic meanings represents one of the major challenges in the translation process.

According to transcultural translation theory, translation is not simply communication between two languages but communication between two cultures. From this perspective, examining the capabilities and limitations of artificial intelligence is one of the pressing issues in contemporary translation studies. Although AI systems are currently capable of producing grammatically accurate translations, their effectiveness in recreating cultural context, symbolic meanings, and the author's style remains a subject of scholarly debate.

The relevance of this study lies in the fact that the capabilities of artificial intelligence in English–Uzbek literary translation have not yet been studied comprehensively enough. Existing research has mainly examined English–French, English–German, or English–Chinese translation, whereas empirical evidence concerning the effectiveness of AI systems in English–Uzbek literary translation remains limited. The purpose of this study is to examine artificial intelligence and professional translator practice in English–Uzbek literary translation through transcultural and comparative analysis, identify their advantages and limitations, and develop scientific recommendations for improving the quality of literary translation.

To achieve this aim, the following tasks were established:

- to examine the theoretical foundations of AI-based translation systems;
- to identify the transcultural characteristics of English–Uzbek literary translation;
- to compare the outputs of ChatGPT, DeepL, and Google Translate with professional translations;
- to evaluate the translation of metaphors, idioms, realia, and pragmatic units;

to develop an effective model of cooperation between AI and the human translator. The findings have scientific and practical significance for the development of translation theory, the teaching of translation-related disciplines in higher education institutions, and the improvement of AI-based translation technologies.

RESEARCH METHODOLOGY

This study employed a comprehensive methodological approach to examine artificial intelligence and professional translator practice in English–Uzbek literary translation from comparative and transcultural perspectives. The research was based on a mixed-method design incorporating qualitative and partially quantitative elements.

Selected excerpts from literary works representing different genres of English literature were used as the research material. The sample was formed according to the following criteria:

- the presence of cultural units in the text;
- the occurrence of metaphors and idioms;
- the presence of dialogue and authorial narration;
- the diversity of stylistic devices.

A total of 30 text excerpts were selected for analysis. Each excerpt consisted of approximately 150–250 words.

The texts were taken from the following well-known works:

- Pride and Prejudice (Jane Austen);
- The Great Gatsby (F. Scott Fitzgerald);
- Harry Potter and the Philosopher's Stone (J. K. Rowling);
- Animal Farm (George Orwell);
- The Little Prince (English translation).

These works were selected as representative research material because they incorporate diverse stylistic and cultural layers.

Research instruments. Each text was translated into Uzbek using the following four approaches:

1. ChatGPT (GPT model);
2. DeepL Translator;
3. Google Translate;
4. A translation prepared by a professional translator (control version).

The professional translation was treated as the benchmark in the study, and the other translations were compared against this version.

Research methods. The following scientific methods were used throughout the study.

Comparative analysis: Each translation version was compared with the others, and the degree of semantic accuracy, stylistic adequacy, and cultural equivalence was assessed.

Transcultural analysis: Particular attention was given to the transfer of national-cultural units, realia, historical concepts, culture-specific customs, and pragmatic meanings occurring in the translations.

The following units received particular attention:

- realia;
- phraseological units;
- metaphors;
- symbolic images;
- religious units;
- national cultural colour.

Semantic analysis: The semantic accuracy of the translation and its correspondence to the source text were examined. Instances of meaning loss, additional meanings, and incorrect interpretations arising in translation were recorded separately.

Stylistic analysis: The degree to which the author's style was preserved was assessed according to the following criteria:

- imagery;
- emotionality;
- expressiveness;
- figurative and stylistic devices;
- rhythm and intonation.

Statistical analysis: Each translation was evaluated using a scoring system according to the following criteria:

Evaluation criterion	Maximum score
Semantic accuracy	10
Stylistic adequacy	10
Cultural equivalence	10
Idiom translation	10
Metaphor translation	10

Thus, the maximum score for each translation was 50 points.

Evaluation criteria

Translation quality was evaluated using the following indicators:

1. Degree of preservation of the original meaning;
2. Representation of the author's style;
3. Transfer of cultural meaning;
4. Naturalness of expression in Uzbek;
5. Ease of reception by the reader.

Expert judgments for each criterion were also taken into account during the evaluation process.

Reliability of the study

To ensure the reliability of the results, all translations were produced from the same texts and a unified set of evaluation criteria was applied. The results were verified at several stages and generalized on the basis of comparative analysis. This approach contributed to the objectivity and reproducibility of the research findings.

RESEARCH RESULTS

During the study, 30 excerpts of literary texts in English were translated into Uzbek by ChatGPT, DeepL Translator, Google Translate, and a professional translator. Each translation was evaluated in terms of semantic accuracy, stylistic adequacy, cultural equivalence, and the quality of metaphor and phraseological-unit translation. The analysis showed that artificial intelligence systems are capable of producing grammatically accurate and consistent translations. However, professional translators demonstrated a significant advantage in preserving literary style, imagery, and cultural meanings.

Overall indicators of translation quality

1-jadval Comparative evaluation of artificial intelligence systems and professional translation results

Evaluation criterion	ChatGPT	DeepL	Google Translate	Professional translator
Semantic accuracy	9.4	9.2	8.5	9.8
Stylistic adequacy	8.9	8.1	7.0	9.9
Cultural equivalence	8.4	7.8	6.6	9.8
Idiom translation	8.7	7.5	6.2	9.7
Metaphor translation	8.5	7.4	6.0	9.8
Total score (50)	43.9	40.0	34.3	49.0

The table results show that the professional translator achieved the highest scores across all criteria. Among the artificial intelligence systems, ChatGPT demonstrated the highest overall performance.

Results of metaphor translation. A total of 78 metaphors were identified in the 30 texts analyzed. of these:

Translation type	Fully preserved	Partially preserved	Lost
ChatGPT	61	13	4
DeepL	54	16	8
Google Translate	42	20	16
Professional translator	74	4	0

The results showed that ChatGPT achieved higher performance than the other AI systems in translating metaphors. The professional translator, however, translated almost all metaphors while preserving their original artistic value.

Translation of phraseological units. A total of 65 idiomatic units were identified in the selected texts.

The most frequent errors were:

- literal translation;
- loss of pragmatic meaning;
- reduction of emotional colouring;
- insufficient cultural adaptation.

For example:

Original:

"Break the ice." ChatGPT: "Muzni eritmoq." Although this is a literal translation, the meaning became understandable when accompanied by an explanation.

DeepL: "Muzni sindirish." The original pragmatic meaning of the idiom was lost. Google Translate: "Muzni buzish." This is unnatural in Uzbek. Professional translator: "Suhbatni boshlab yubormoq." Both the content and pragmatic meaning were fully preserved.

3.4. Translation of cultural units

A total of 54 cultural units (cultural references) were identified in the analysis.

They were divided into the following groups:

Unit type	Number
National foods	9
Historical units	7
Religious units	8
Clothing	10
Traditions	11
Realia	9

ChatGPT translated 81% of these units adequately, whereas Google Translate achieved 59%. The professional translator achieved 96% accuracy.

Translation of stylistic devices

Epithets, personification, repetition, irony, and allegory occurring in the literary texts were analyzed separately.

The results showed that:

- ChatGPT successfully conveyed 86% of the stylistic devices;
- DeepL — 78%;
- Google Translate — 64%;
- Professional translator — 98%.

AI systems experienced particular difficulty in translating irony and sarcasm.

Overall results

The research findings indicate the following main conclusions:

- ChatGPT achieved higher performance as a literary translation system than DeepL and Google Translate.
- The professional translator demonstrated superiority in preserving aesthetic and cultural layers.
- AI is an effective tool in terms of grammatical accuracy and speed.
- Human translators continue to play an important role in texts requiring cultural adaptation.
- Cooperation between AI and professional translators can further improve the quality of literary translation.

DISCUSSION

The results of this study made it possible to identify the capabilities and limitations of artificial intelligence in English–Uzbek literary translation. The data showed that modern artificial intelligence systems, particularly ChatGPT, are highly effective in ensuring grammatical correctness, syntactic coherence, and lexical correspondence. However, human translators continue to demonstrate superiority in fully recreating the stylistic subtleties, cultural connotations, and pragmatic meanings characteristic of literary texts.

The research findings are consistent with Eugene Nida's theory of dynamic equivalence. Nida argues that the primary task of translation is to preserve not the form of the text but the effect it produces on the reader. The examples analyzed showed that although artificial intelligence often generated grammatically correct translations, it could not fully reproduce the emotional and aesthetic effect of the source text.

From the perspective of Lawrence Venuti's theories of domestication and foreignization, the research findings also produced significant conclusions. AI systems often translate cultural units by generalizing or simplifying them. As a result, the national colour of the source text may be weakened. Professional translators, by contrast, were able to preserve cultural features when necessary through explanatory translation or functional equivalents.

Susan Bassnett interprets literary translation as intercultural communication, and the present study also confirms this view. The adaptation of English realia into Uzbek requires more than the replacement of linguistic units; it also requires consideration of cultural thinking and reader reception. A similar situation was observed in metaphor translation. Although ChatGPT correctly interpreted many metaphors, in some cases it converted them into neutral expressions. As a result, the level of artistic imagery was reduced. The professional translator succeeded in preserving both the semantic and aesthetic functions of the metaphors.

Another important finding of the study was that ChatGPT took context into account more effectively than the other artificial intelligence systems. In particular, it demonstrated stronger performance in translating dialogues, preserving the speech styles of characters, and recreating complex syntactic constructions. DeepL and Google Translate, although grammatically accurate in some cases, reduced the emotional impact of the literary expression.

The study also demonstrated that artificial intelligence cannot completely replace the translator's activity. AI technologies are effective for accelerating the initial stage of translation, ensuring terminological consistency, and saving time. However, the involvement of a professional translator remains necessary at the stages of final literary editing, stylistic adaptation, and cultural adaptation.

The scientific novelty of this study lies in the comprehensive comparison of ChatGPT, DeepL, and Google Translate with professional translation using English–Uzbek literary translation as the research context. From a transcultural perspective, the quality of translating cultural units, metaphors, idioms, and pragmatic elements was assessed. At the same time, a model of cooperation between AI and professional translators was proposed. According to this model, the initial translation is generated by artificial intelligence and subsequently undergoes stylistic

and cultural editing by a professional translator. This approach makes it possible to accelerate the translation process while maintaining a high level of literary quality.

The results suggest that training artificial intelligence systems on specialized corpora based specifically on the national and cultural characteristics of the Uzbek language could further increase their effectiveness in literary translation. Furthermore, integrating transcultural translation theory with AI technologies represents one of the promising directions of contemporary translation studies.

CONCLUSION

This study was devoted to analyzing artificial intelligence technologies and professional translator practice in English–Uzbek literary translation through transcultural and comparative approaches. The results showed that modern artificial intelligence systems, particularly ChatGPT, DeepL, and Google Translate, significantly accelerate the translation process and are effective in ensuring grammatical and lexical accuracy. These systems demonstrated particularly strong performance in preserving general meaning and correctly rendering syntactic structures.

At the same time, the study once again confirmed that literary translation is not merely the replacement of linguistic units but a process of recreating cultural, aesthetic, and pragmatic meanings. The superiority of professional translators was clearly demonstrated in translating metaphors, idioms, national realia, and cultural units. Human translators achieved better results than artificial intelligence systems in understanding context more deeply, preserving the author's style, and creating an aesthetic impression in the reader close to that of the source text. According to the comparative analysis, ChatGPT achieved the highest scores among the AI systems. It was observed to outperform DeepL and Google Translate in translating complex syntactic constructions, rendering dialogues naturally, and taking the overall context into account. However, ChatGPT also demonstrated certain limitations in cultural adaptation and the recreation of literary imagery.

The scientific novelty of the study consists in the comprehensive transcultural comparison of artificial intelligence and professional translator practice in English–Uzbek literary translation. Translation quality was evaluated according to the criteria of semantic accuracy, stylistic adequacy, cultural equivalence, and pragmatic adequacy. In addition, a hybrid translation model based on cooperation between artificial intelligence and professional translators was proposed. According to this model, the initial translation is produced by an artificial intelligence system and is subsequently edited by a professional translator from stylistic, cultural, and pragmatic perspectives. This approach contributes to increasing the efficiency of the translation process while preserving the aesthetic value of the literary text.

In future research, it would be appropriate to train artificial intelligence models on large-scale literary corpora adapted to the Uzbek language, develop their transcultural competence, and improve criteria for the automatic evaluation of literary translation.

Overall, artificial intelligence is not expected to completely replace professional translators in the near future. Rather, it will serve as an effective tool supporting translators' work, while

cooperation between humans and artificial intelligence may shape a new stage in the development of literary translation.

REFERENCES

1. Baker, M. (2018). In Other Words: A Coursebook on Translation (3rd ed.). Routledge.
2. Bassnett, S. (2014). Translation Studies (4th ed.). Routledge.
3. Catford, J. C. (1965). A Linguistic Theory of Translation. Oxford University Press.
4. Chesterman, A. (2016). Memes of Translation. John Benjamins.
5. Cronin, M. (2017). Eco-Translation. Routledge.
6. House, J. (2015). Translation Quality Assessment. Routledge.
7. Jakobson, R. (1959). On Linguistic Aspects of Translation. In On Translation. Harvard University Press.
8. Munday, J. (2016). Introducing Translation Studies (4th ed.). Routledge.
9. Newmark, P. (1988). A Textbook of Translation. Prentice Hall.
10. Nida, E. A. (1964). Toward a Science of Translating. Brill.
11. Nida, E. A., & Taber, C. (1969). The Theory and Practice of Translation. Brill.
12. Toury, G. (2012). Descriptive Translation Studies and Beyond. John Benjamins.
13. Venuti, L. (2018). The Translator's Invisibility (3rd ed.). Routledge.
14. Vinay, J. P., & Darbelnet, J. (1995). Comparative Stylistics of French and English. John Benjamins.
15. Wilss, W. (1996). Knowledge and Skills in Translator Behavior. John Benjamins.
16. OpenAI. (2025). GPT Models Documentation.
17. OpenAI. (2025). ChatGPT Research Overview.
18. Google. (2021). Google Neural Machine Translation Documentation.
19. DeepL GmbH. (2024). DeepL Translator White Paper.
20. Koehn, P. (2020). Neural Machine Translation. Cambridge University Press.
21. Hutchins, J. (2005). The History of Machine Translation. John Benjamins.
22. Gambier, Y., & van Doorslaer, L. (Eds.). (2010). Handbook of Translation Studies. John Benjamins.
23. Baker, M., & Saldanha, G. (2020). Routledge Encyclopedia of Translation Studies. Routledge.
24. O'rinboyev, B. (2019). Tarjimashunoslik asoslari. Toshkent.
25. Karimov, N. (2021). Badiiy tarjima nazariyasi va amaliyoti. Toshkent.