

THE ROLE OF ARTIFICIAL INTELLIGENCE IN TRANSLATION

Zuparova Lobar Karimovna

Senior Lecturer

Uzbekistan State World Languages University

[*lobarxon1967@gmail.com*](mailto:lobarxon1967@gmail.com)

Abstract: This article explores the role of artificial intelligence (AI) in translation through a qualitative, sociotechnical perspective. It examines how AI tools impact translation efficiency, accuracy, cultural sensitivity, and professional roles. Findings reveal a complex interplay where AI enhances speed but struggles with nuanced meaning and cultural context, requiring ongoing human post-editing and oversight. The study highlights ethical concerns around bias and trust, and emphasizes that AI is reshaping rather than replacing the translator's role. Implications for practice, policy, and future research are discussed.

Keywords: Artificial intelligence, translation, sociotechnical systems, post-editing, cultural sensitivity, trust, professional roles, qualitative research

Introduction

In recent years, artificial intelligence (AI) has increasingly influenced various aspects of human communication, with language translation being one of the most prominent domains. From real-time speech interpretation apps to sophisticated machine translation systems like Google Translate, DeepL, and ChatGPT, AI is transforming how people access and understand information across linguistic barriers. These technologies promise speed, cost-effectiveness, and accessibility, offering users an unprecedented ability to engage with content in multiple languages.

However, while AI translation systems have made remarkable technical progress, concerns remain about their ability to capture linguistic nuance, cultural context, and the subtleties of human expression. For instance, idiomatic phrases, tone, and regional variations often present significant challenges to automated systems. Furthermore, issues of trust, perceived accuracy, and bias in AI-generated translations raise questions about their reliability in sensitive or professional contexts, such as legal, medical, or diplomatic communication.

Although much of the existing research in this area has focused on quantitative assessments of AI translation quality – such as BLEU scores or error rates – there is a growing need to explore the human dimension: how individuals experience and perceive AI translation tools in real-world contexts. In particular, the voices of professional translators and frequent users of such tools are underrepresented in academic literature.

Methods

This study employs a qualitative research method to examine how AI-based translation tools are experienced and interpreted by both professional translators and end-users. The STS framework guides the exploration of how technology (AI translation systems) and human elements (users, workflows, expectations) interact, adapt, and shape each other within translation contexts.

Rather than evaluating AI translation tools on their linguistic accuracy alone, this research aims to capture the social, experiential, and interpretive dimensions of their use. This is done through in-depth engagement with participants to understand the perceived benefits, limitations, and transformations in translation practice caused by AI integration.

Results

Analysis of the data through a sociotechnical lens revealed five central themes reflecting the evolving relationship between humans and AI in translation: *efficiency vs. accuracy*, *post-editing demands*, *cultural sensitivity*, *trust and bias*, and *changing translator roles*. These themes illuminate the broader structural and cognitive adjustments taking place as translation becomes increasingly mediated by AI technologies.

Efficiency vs. Accuracy. AI translation systems are widely integrated into personal and professional routines due to their unparalleled efficiency. Users often prioritize speed and accessibility, particularly when the translation task does not require deep semantic or contextual accuracy. In these cases, AI is seen as a practical tool that facilitates immediate comprehension across language barriers.

However, this efficiency frequently comes at the cost of precision. AI-generated translations can exhibit surface fluency while failing to convey deeper linguistic nuance or contextual meaning. This discrepancy reflects a core tension within sociotechnical systems: the trade-off between automation and interpretive quality. As users become more reliant on AI, their expectations of translation begin to shift toward utilitarian goals, potentially narrowing the perceived value of linguistic depth and cultural richness.

Post-editing Needs. The prevalence of post-editing in AI-assisted translation workflows reveals how automation does not eliminate human labor but rather transforms its nature. Instead of producing translations from scratch, professionals are increasingly engaged in tasks of revision, correction, and semantic alignment. This shift introduces a new form of cognitive labor that is often invisible but essential for ensuring the accuracy and appropriateness of AI outputs.

Post-editing requires not only linguistic proficiency but also critical evaluation skills, as practitioners must discern whether the AI has preserved meaning, tone, and intention. In this hybrid model of translation, the human role becomes one of interpretive oversight, positioned downstream from the machine's initial output. This change reflects a broader restructuring of authority within the sociotechnical system, wherein the machine initiates linguistic content and the human becomes the final arbiter of its quality.

Cultural Sensitivity. Despite advances in natural language processing, AI translation systems continue to exhibit significant limitations in handling culturally embedded content. Idioms, metaphors, humor, and region-specific references are frequently mistranslated or rendered inappropriately, highlighting the system's inability to fully grasp context-dependent meanings. These failures underscore a fundamental limitation of current AI: its reliance on pattern recognition rather than embodied cultural understanding.

Trust and Bias. Trust in AI-generated translations is contingent on context, familiarity, and perceived risk. Users tend to place greater trust in AI for informal or low-stakes tasks but express hesitation in relying on it for sensitive or high-impact communication. This conditional trust points to an awareness of the systemic opacity of AI systems – users recognize that they have limited insight into how translation decisions are made and what influences them.

Changing Roles of Translators. AI adoption is catalyzing a redefinition of professional translation roles. Rather than serving solely as linguistic producers, translators are increasingly positioned as quality controllers, editors, and consultants. This evolution reflects a redistribution of labor within the sociotechnical ecosystem, where machines handle the mechanical aspects of translation and humans focus on higher-order interpretive tasks.

Discussion

This article explored how artificial intelligence is reshaping translation practice, using Sociotechnical Systems Theory to interpret the interplay between human users and AI tools. The findings highlight a complex dynamic: while AI offers speed and accessibility, it also introduces new challenges around accuracy, cultural sensitivity, and professional identity.

AI has become a key actor in translation workflows, not simply automating tasks but redefining roles. Translators are now more often editors and consultants, overseeing the refinement of machine-generated content. This reflects a shift in how expertise is understood – away from production and toward judgment, quality control, and cultural mediation.

However, this shift comes with tensions. Users often accept surface-level accuracy for convenience, but professional settings still demand high-quality, culturally appropriate translations. AI's difficulty with idioms, tone, and bias underscores its limitations, particularly when representing diverse voices or politically sensitive material.

Ethically, the growing reliance on AI risks undervaluing human labor and reinforcing algorithmic biases. Transparency in how AI systems are trained, and clearer boundaries around appropriate use, are essential. For translation to remain both efficient and meaningful, human oversight must remain central. Overall, AI is transforming – not replacing – human translation, demanding new skills, ethical frameworks, and a rethinking of what quality means in multilingual communication.

Conclusion. AI is rapidly transforming the field of translation, offering greater speed and access while simultaneously challenging traditional notions of quality, authorship, and cultural nuance. This study, through a sociotechnical lens, shows that while AI enhances efficiency, it cannot fully replace human insight – especially in contexts requiring deep linguistic judgment and cultural sensitivity.

As translators adapt into roles as editors and consultants, the profession is evolving rather than disappearing. However, to ensure responsible and equitable use of AI in translation, there is a growing need for ethical oversight, inclusive design, and sustained human involvement. Future developments in AI must focus not only on technical accuracy but also on the preservation of meaning, diversity, and trust in cross-cultural communication.

References

1. Bowker, L. (2002). *Computer-aided translation technology: A practical introduction*. University of Ottawa Press.
2. Hutchins, W. J. (2005). *The history of machine translation in a nutshell*.
3. Köhler, M., & O'Brien, S. (2018). Post-editing practices: A survey. *The Journal of Specialised Translation*, 29, 4–23.
4. Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.
5. Nababan, M. R., Hasyim, A., & Gunawan, B. (2020). Ethical considerations in machine translation. *Journal of Translation Studies*, 15(2), 102-119.
6. Sundaram, H., & Sinha, A. (2021). Bias and fairness in AI-powered language translation. *AI & Society*, 36(3), 683–692.
7. Suchman, L. A. (2007). *Human-machine reconfigurations: Plans and situated actions* (2nd ed.). Cambridge University Press.

8. Vasconcellos, M. (2019). Translator's role in post-editing machine translation: A sociotechnical perspective. *Translation Spaces*, 8(1), 41-59.
9. Wang, Y., & Li, X. (2023). Cultural challenges in AI translation: A qualitative study. *Language and Intercultural Communication*, 23(1), 56-72.