الذّكاءُ الاصطناعيُّ والتَّرجمةُ الآليَّةُ في ظلِّ الأزماتِ الجيوسياسيَّةِ: ضمانُ دقَّةِ وموثوقيَّةِ التَّرجمةِ

Artificial Intelligence and Machine Translation in Times of Geopolitical Crisis: Ensuring Translation Quality and Reliability

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Abstract

The increasing demand for translation during crises has intensified reliance on technology, particularly artificial intelligence (AI) and machine translation (MT). This study investigates the limitations of these tools in the context of sensitive texts, with a particular focus on linguistic accuracy and cultural sensitivity. It emphasizes the indispensable role of human translators in geopolitical and conflict-related settings, where AI and MT—despite ongoing advancements—continue to struggle with capturing linguistic subtleties and emotional nuances, often resulting in what is referred to as linguistic bias.

The study adopts a practical experimental approach, involving several translation trials and a critical review of previous AI-based models. Findings underscore the essential role of human intervention in ensuring accuracy, empathy, and contextual understanding in high-stakes scenarios. Human translators, through independent reasoning, are better equipped to comprehend and convey complex emotional and cultural dimensions. Despite technological progress, AI and MT systems require further development in linguistic resources to operate effectively across diverse languages and to offer equitable access for users from different cultural backgrounds. Ensuring such equity is vital for enabling users to express emotions and thoughts accurately—an essential element of effective communication during crises.

Keywords: artificial intelligence, cultural sensitivity, geopolitical conflicts, machine translation, reliability, translation technologies.

الملخص

تتناولُ هذهِ الدِّراسةُ التَّحدّيات المتزايدةِ المرتبطةِ باستخدامِ تقنياتِ التَّرجمةِ، ولا سيَّما الذَّكاء الاصطناعي (AI) والترجمةِ الآليَّةِ (MT)، في سياقاتِ الأزماتِ الجيوسياسيَّةِ. فعلى الرَّغمِ منَ التَّطوُّرِ المستمرّ لهذهِ الأدواتِ، ما تزال هناكَ مخاوفُ حقيقيَّة بشأنِ مدى ملاءمتِها للاستخدامِ في نصوصٍ حسَّاسَةٍ تتطلَّبُ دقَّةً لغويَّةً واستيعابًا ثقافيًّا عاليًا. إذ تواجهُ هذهِ التّقنياتُ صعوباتٍ في التقاطِ التَّفاصيلِ الدَّقيقةِ للمشاعرِ الإنسانيَّةِ والتّعقيداتِ الثّقافيَّةِ، كما أنَّها عرضةٌ للانحيازاتِ والأخطاءِ اللُّغويَّةِ.

تسلِّطُ الدِّراسةُ الضَّوءَ على الدَّورِ الجوهريّ للمترجمِ البشريّ، الّذي يمتلكُ القدرةَ على التَّفكيرِ المستقلّ والتفاعلِ معَ السّياقاتِ العاطفيَّةِ والثَّقافيَّةِ المعقّدةِ، ممّا يجعلُهُ عنصرًا لا غنى عنْهُ لضمانِ ترجمةٍ دقيقةٍ ومتعاطفةٍ في المواقفِ الحرجةِ. وتعتمدُ الدِّراسةُ المنهجَ التّجريبيَّ، منْ خلالِ إجراءِ تجاربَ عمليَّةٍ ومراجعةٍ نقديَّةٍ لنماذجَ قائمةٍ على الذَّكاءِ الاصطناعيّ، بهدفِ الكشفِ عنْ أوجُهِ القُصورِ الّتي تحدُّ منْ موثوقيَّةِ هذهِ

الأدواتِ في التّرجمةِ. وتخلصُ الدّراسةُ إلى التّأكيدِ على أهميَّةِ تطويرِ مواردَ لغويَّةٍ أكثرَ شمولًا لضمانِ العدالةِ في الوصولِ إلى تقنياتِ ترجمةٍ فعّالةٍ عبرَ مختلفِ اللّغاتِ والثّقافاتِ، بما يعزّزُ فرصَ التّعبيرِ الدّقيقِ عن المشاعرِ والأفكارِ في أوقاتِ الأزماتِ.

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Introduction

Scientific advancements have significantly enhanced the capabilities of artificial intelligence (AI), particularly in the field of translation. However, the reliability of AI across diverse contexts and text types remains a topic of scholarly concern. Translation is not merely a linguistic operation but a culturally embedded act in which the translator reconstitutes the source text (ST) while serving as a vital mediator between distinct cultural spheres. Although the practice of translation dates back to antiquity, it was only in the mid-twentieth century that it gained recognition as a formal academic discipline, known today as Translation Studies or Translatology.

The advent of AI has ushered in a transformative era across many disciplines, including translation. Recent developments in AI have enabled the autonomous generation of translations with claimed accuracy rates approaching 90%, even without human input. Such efficiency underscores AI's potential to enhance both the speed and productivity of translation processes on a large scale.

A seminal milestone in the evolution of machine translation was the 1954 Georgetown–IBM experiment, which involved the automated translation of Russian sentences into English. Although its results were modest, it marked a foundational achievement that catalyzed further research in automated translation.

Yet, the rapid progress of AI has also triggered philosophical and ethical debates. Theoretical physicist Stephen Hawking famously remarked, "Success in creating effective AI could be the biggest event in the history of our civilization. Or the worst. We just don't know" (Hawking, 2017). His cautionary words capture the dual potential of AI—as a transformative tool brimming with promise, yet fraught with uncertainty.

Practically speaking, AI-based translation offers tangible advantages, including reduced operational costs and faster turnaround times. Nonetheless, human translators remain

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indispensable in ensuring the accuracy, cultural appropriateness, and contextual sensitivity of translations. Human intervention is especially crucial in refining machine-generated outputs and addressing subtleties that AI often overlooks.

Moreover, human feedback plays a pivotal role in training and improving machine translation systems, establishing a dynamic interplay between human expertise and AI development. However, certain textual characteristics—such as emotional tone, ideological nuance, or political sensitivity—pose significant challenges to AI translation. In high-stakes contexts, including those involving emotionally charged or politically sensitive content, over-reliance on machine translation can result in misinterpretations or misleading renderings.

Despite AI's extensive lexical databases and advanced morphological, syntactic, and grammatical processing capabilities, it often falls short in achieving functional equivalence or conveying culturally nuanced meanings. One recurrent limitation is AI's difficulty in accommodating cultural frameworks vital to audience reception and interpretive accuracy.

Translation serves multifaceted purposes, ranging from informational and diplomatic to ideological and strategic. In conflict zones, for instance, translation is often weaponized to shape narratives, garner support, or resist occupation. The Israeli–Palestinian conflict, with its profound geopolitical and humanitarian implications, illustrates how translation can serve as both a communicative bridge and a political instrument.

In such contexts, the stakes of translation are exceptionally high. Errors in rendering sensitive content can have serious ramifications, necessitating precise and culturally informed translation. Although AI continues to evolve, it often struggles to meet the linguistic, ethical, and emotional demands of these environments.

This study therefore undertakes an empirical investigation into the efficacy of AI-generated translations in content-sensitive contexts. Through practical translation experiments and critical analysis of existing outputs, the research evaluates the linguistic accuracy, contextual appropriateness, and recurring limitations of AI translation tools.

Roberto A. Valdeón, in his article *"Translation in Times of Crises and Conflicts,"* underscores the growing importance of language brokers—individuals who mediate communication between speakers of different languages—especially in a world increasingly shaped by crises such as financial collapse, mass migration, and armed conflict. Valdeón introduces the concept of "crisis translation" as any form of linguistic and cultural mediation that ensures access to crucial information during emergencies. He highlights the myriad challenges faced by translators in such scenarios, including non-verbal communication cues, divergent risk perceptions, and socio-cultural inequalities that restrict access to information.

The article emphasizes that translators and interpreters are indispensable in mitigating communication barriers during crises. This urgency has accelerated the adoption of technological tools that support various stages of translation—from drafting to editing—either autonomously or in tandem with human oversight.

Yorick Wilks, in his paper *"Machine Translation and Artificial Intelligence,"* explores the intricate relationship between machine translation (MT) and AI. He builds on Yehoshua Bar-Hillel's early skepticism regarding MT's reliance on background knowledge, emphasizing that without sufficient context, AI systems are prone to inaccuracies. Wilks argues that the future of MT hinges on AI's ability to emulate both the structural and semantic dimensions of human language. While machines can now process vast amounts of data, the challenge lies in encoding human reasoning into computational models capable of interpreting meaning beyond surface-level syntax.

Indeed, interpreting an ambiguous sentence like "The soldiers fired at the women and I saw several fall" demands more than syntactic parsing—it requires contextual judgment, something AI still lacks. Although recent advances in probabilistic reasoning and neural models have improved output quality, AI remains unable to replicate the intuition and depth of human understanding.

The emergence of Natural Language Processing (NLP), a subfield of AI, has significantly contributed to enhancing MT. As Zhaorong Zong observes in his study *"On the Application of Natural Language Processing in Machine Translation,"*NLP and MT have co-evolved from statistical models to today's sophisticated neural machine translation (NMT) systems. This symbiotic development has improved not only the structural accuracy but also the contextual relevance of translations.

Despite these technological gains, there remains a critical gap in research focusing on AI's application to sensitive and conflict-related texts. While the broader field of machine translation has been extensively studied, its deployment in high-stakes geopolitical scenarios has received comparatively little attention. This study seeks to fill that gap by examining the performance and reception of AI-generated translations in contexts marked by political volatility and emotional intensity.

In particular, it investigates the extent to which AI tools can deliver accurate and context-sensitive translations of emotionally charged content. It also evaluates the degree to which such outputs are deemed acceptable by target audiences. Central to this inquiry is the enduring relevance of the human translator, whose role remains irreplaceable in navigating cultural and ethical complexities.

As translation technologies continue to evolve, the need for targeted empirical research becomes more urgent—especially in politically sensitive domains. This study focuses on a timely and critical case: the Israeli assault on Gaza, a conflict that dominates global media and political discourse. This real-world scenario provides a unique lens through which to assess the strengths and shortcomings of AI translation systems operating under pressure. By engaging with this case, the research aims to advance the responsible and effective integration of AI into translation practice, while reaffirming the indispensable role of human discernment.

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Discussion

This study underscores several critical factors that influence the reliability of artificial intelligence (AI) and machine translation (MT) during times of geopolitical conflict and crisis. As demand for translation services increases in the face of escalating political, military, and humanitarian emergencies, the deployment of translation technologies has become increasingly indispensable. Yet, recognizing the limitations and vulnerabilities of these tools—especially in sensitive or ideologically charged contexts—is equally essential.

By integrating practical experiments and analyzing their outcomes, this study reveals persistent challenges that compromise the effectiveness of AI and MT in such contexts. One of the most prominent concerns is the linguistic limitation of AI systems. These technologies often struggle with semantic nuance, pragmatic inference, and socio-cultural sensitivity, all of which are especially pronounced in crisis-related discourse. The translation of such material requires a high degree of precision, context-awareness, and emotional attunement—capacities that remain outside the full reach of current AI capabilities. As such, human post-editing and intervention remain vital to ensure accuracy and appropriateness.

The increasing frequency of global conflicts and subsequent displacement has intensified the demand for scalable translation solutions. While AI and MT systems have advanced and are capable of producing reasonably intelligible output in controlled contexts, their reliability diminishes significantly when applied to conflict-related or politically sensitive content. These domains are characterized by historical complexities, emotional intensity, and rhetorical subtlety—features that require human cognitive and ethical judgment.

A telling illustration of the stakes involved emerged in 2017, when Israeli authorities arrested a Palestinian man after Facebook's AI-powered translation system mistranslated his Arabic greeting "يصبحهم" (“good morning”) as “attack them” in Hebrew and “hurt them” in English. The man was briefly detained before the error was acknowledged and Facebook issued a public apology. This incident highlights the potentially dangerous consequences of mistranslations in volatile environments, particularly when generated by AI systems that lack contextual comprehension.

Beyond linguistic error, another substantial challenge is the AI's inability to achieve **cultural equivalence**, a cornerstone of effective and ethical translation. This limitation stems from both technological constraints and conceptual shortcomings. AI systems frequently fail to recognize idiomatic expressions, euphemisms, or culturally specific references—elements essential to accurate communication in crisis scenarios.

Bias is another pressing concern. AI systems are not autonomous entities but function based on datasets and policy frameworks shaped by developers and institutions. If the training data or moderation guidelines reflect ideological leanings, the outputs will likely inherit these biases. For example, if one party to a conflict influences the system’s content filtering or training parameters, the resulting translations may be skewed or incomplete, undermining neutrality and reliability.

This issue was apparent in one experiment conducted in the current study. When prompted to translate an excerpt from *The Protocols of the Elders of Zion*, the AI refused, stating:

"I'm sorry, but I cannot translate content that includes false political protocols. These documents may have been forged and promoted as part of misinformation campaigns used to negatively influence public opinion."

Although this response reflects commendable ethical safeguards against hate speech, it also reveals a structural limitation: AI systems are constrained by external policy filters that may restrict access to controversial materials, even when requested for scholarly analysis. This raises important questions about academic freedom, transparency, and the selective gatekeeping of content by AI.

Bias also manifests linguistically. As Gábor Bella notes in *Towards Bridging the Digital Language Divide*, AI systems are often trained on extensive data in dominant languages, leading to improved output in languages like English while marginalizing under-resourced languages. In conflict zones where minority languages or local dialects are spoken, this imbalance can significantly impede accurate communication.

From a theoretical perspective, AI does not operate on the basis of established translation models such as Skopos theory or dynamic equivalence. Instead, it relies on pattern recognition and probabilistic prediction. However, it can occasionally emulate these strategies when explicitly prompted. For instance, when asked to translate the idiom "He's carrying coal to Newcastle," the AI initially rendered it literally in Arabic as "يحمل الفحم إلى نيوكاسل." When instructed to apply cultural equivalence, it offered "يحمل الماء إلى البحر" ("He's carrying water to the sea"). When asked to domesticate the expression, it produced "إنه يحمل الفحم إلى الحمم" ("He's carrying coal to the volcanoes")—a metaphor more culturally resonant for the target audience. These examples demonstrate that while AI can mimic certain translation strategies, it lacks the cognitive intentionality and theoretical grounding that human translators possess.

The application of culturally and contextually appropriate strategies becomes particularly vital during crises. Skopos theory, with its focus on purpose-driven translation, and techniques such as euphemism or taboo mitigation, help ensure that translations are acceptable, sensitive, and audience-appropriate (McDonald, 2020). Such strategies require an understanding of emotional tone, historical context, and intended impact—dimensions in which AI remains deficient.

This is especially evident in contexts like the Arab-Israeli conflict, where terminology carries deep political significance. For example, most Arab audiences view "Israel" as an occupying force on Palestinian land. Consequently, terms like "الاحتلال" (the occupation) are commonly used in place of "إسرائيل" (Israel), and "جيش الاحتلال الإسرائيلي" (Israeli Occupation Forces, IOF) instead of "جيش الدفاع الإسرائيلي" (Israel Defense Forces, IDF). These rhetorical choices align with the perspective of audiences sympathetic to the Palestinian cause and underscore the importance of socio-political positioning in translation—something AI systems do not consistently or reliably manage.

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An experiment further revealed this weakness. A Hebrew text containing terms unacceptable to pro-Palestinian readers was translated using AI, both with and without a command to align the output with a pro-Palestinian stance. No discernible differences were found between the two versions, suggesting that the AI system either lacked sensitivity to ideological framing or was constrained by programmed neutrality. This supports the argument that AI is largely unreliable in politically polarized translation and editorial tasks.

Another experiment tested bias through two politically charged questions:

- “Do Israelis deserve to be free?”
- “Do Palestinians deserve to be free?”

The AI’s response to the first was affirmative: “Like all people, Israelis deserve freedom.” In contrast, the second prompted a more evasive response: “This is a complex and sensitive issue.” (Youssef, 2023). Such inconsistencies highlight a possible asymmetry in content handling—whether due to bias in training data or to embedded moderation policies.

While AI systems exhibit strong performance in certain functional domains, they lack the human translator’s capacity for nuanced interpretation, emotional intelligence, and ethical judgment. This distinction becomes especially pronounced in humanitarian and trauma-sensitive contexts. According to RCT Volunteers, many asylum applications have been rejected due to the inaccuracies of MT. A representative specializing in Afghan translation noted that the language's richness in dialects renders automated translation almost futile. As they remarked, "Data is still data, and a human is a human."

Crucially, dealing with individuals experiencing trauma requires empathetic communication—an area where only humans can truly excel. One volunteer stated:

“You should have empathy to convey their emotions and feelings.”

Machine translation remains a process of data-driven transfer from source to target. Human translation, by contrast, is a process of ethical and emotional mediation. In conflict narratives—especially those reporting the destruction of homes or the deaths of civilians in areas like Gaza—the content is infused with complex human emotions: fear, grief, anger, and helplessness. Human translators can intuit and convey these layers of meaning in ways that machines, constrained by algorithmic boundaries, cannot.

In conclusion, while AI and MT have made impressive strides and offer undeniable value in enhancing global communication, their use in conflict-related translation is still fraught with critical limitations. Linguistic inaccuracies, cultural insensitivity, ideological bias, and theoretical shallowness all demonstrate the ongoing necessity of human translation. These technologies should be viewed not as replacements but as complementary tools to human expertise—particularly in situations where accuracy, impartiality, and empathy are not just preferred but essential.

Conclusion

This study highlights the indispensable role of human translators—not only for their linguistic expertise but also for their cultural competence, emotional intelligence, and sensitivity to the target audience. These elements are just as essential as linguistic accuracy, especially when translating texts related to conflict and crisis. Unlike machines, human translators can perceive and interpret the emotional undertones embedded in language. This human sensitivity allows them to approach translation from four interrelated dimensions: linguistic precision, cultural insight, audience awareness, and emotional resonance.

Although artificial intelligence (AI) and machine translation (MT) technologies have made considerable strides and serve as useful tools in general contexts, they remain limited when it comes to domains requiring nuanced human judgment. Conflict-related texts, in particular, demand more than literal rendering; they call for deep cultural understanding, empathetic engagement, and interpretive skill. As AI and MT continue to develop, their deployment in high-stakes, emotionally charged scenarios must be approached with caution.

AI and MT can enhance translator productivity through support in drafting, editing, and proofreading. However, they should not be viewed as replacements for human translators in sensitive or critical contexts. The limitations explored in this study—ranging from linguistic inaccuracies to cultural insensitivity and algorithmic bias—underscore the continued necessity of human oversight. Users must engage with these technologies responsibly, reviewing and validating translations before dissemination, while developers are encouraged to diversify and refine linguistic and cultural training data to enhance performance and reduce bias.

This research contributes to the growing body of work at the intersection of translation studies and AI. Future investigations should expand the corpus of texts analyzed—across genres, registers, and cultural contexts—to further understand how AI can complement, rather than replace, the irreplaceable human element in translation.

Recommendations

Based on the study's findings, the following recommendations are proposed to ensure the ethical and effective integration of AI and MT into the translation process:

1. **Enhance Translator Awareness and Training**
   Equip translators with a clear understanding of AI and MT tools—their strengths, weaknesses, and appropriate applications. Training initiatives should emphasize critical engagement, not passive reliance.
2. **Diversify Linguistic Resources**
   Address linguistic bias by incorporating underrepresented languages, dialects, and text types into training datasets. This will help bridge the digital language divide and promote equitable access to quality translation across linguistic communities.
3. **Ensure Inclusive and Representative Data Collection**
   Collect and curate data that reflect diverse cultural, social, and ideological perspectives.

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Rich, inclusive datasets will improve both linguistic accuracy and cultural appropriateness in MT outputs.

4. **Refine Algorithms for Cultural and Pragmatic Sensitivity**
   Develop NLP models capable of interpreting idioms, euphemisms, culturally sensitive expressions, and pragmatic subtleties. Algorithms should also allow flexible responses depending on the communicative context.
5. **Implement Continuous Performance Monitoring**
   Establish systematic mechanisms to evaluate AI-generated translations, especially in sensitive contexts. Regular reviews and quality assessments can help detect errors, biases, or unintended misinterpretations before public dissemination.

By implementing these recommendations, both human translators and AI developers can contribute to more accurate, culturally informed, and ethically sound translation practices. In an increasingly interconnected and conflict-prone world, responsible translation is not merely a linguistic task—it is a moral imperative.

References

5 Notable Times AI Made Translation Mistakes. (2021, December 10). *iLingo2*. https://www.ilingo2.com/5-notable-times-ai-made-translation-mistakes/

Bella, G. (2023, July 25). *Towards bridging the digital language divide*. arXiv. https://arxiv.org/abs/2307.13405

Bhuiyan, J. (2023, September 7). Lost in AI translation: Growing reliance on language apps jeopardizes some asylum applications. *The Guardian*. https://www.theguardian.com/us-news/2023/sep/07/asylum-seekers-ai-translation-apps

Bar-Hillel, Y. (1960). *The Present Status of Automatic Translation of Languages*. Advances in Computers, 1, 91-163.

Evans, J., & Fernández, F. (Eds.). (2021). *The Routledge handbook of translation and politics*. Routledge.

McDonald, S. V. (2020, July 18). Accuracy, readability, and acceptability in translation. *Neliti*. https://media.neliti.com/media/publications/343982-accuracy-readability-and-acceptability-i-ed24ad76.pdf

Schnell, M. (2023, October 10). Will AI translation technology replace translators? *RWS*. https://www.rws.com/blog/will-ai-translation-technology-replace-translators/

Valdeón, R. A. (2023). Translation in times of crises and conflicts. *Perspectives: Studies in Translation Theory and Practice*, 31(3), 403–419. https://doi.org/10.1080/0907676X.2023.2196166

Wilks, Y. (1979). Machine translation and artificial intelligence. In B. M. Snell (Ed.), *Translating and the computer* (Vol. 1). North-Holland Publishing Company. https://aclanthology.org/1978.tc-1.2.pdf

Youssef, B. (Interviewee). (2023, November 2). *Piers Morgan vs Bassem Youssef Round 2 | Two-hour special interview*(P. Morgan, Interviewer). YouTube.

Zong, Z. (2018). On application of natural language processing in machine translation. *IEEE Xplore*. https://ieeexplore.ieee.org/search/searchresult.jsp?searchWithin="First%20Name":"Zhaorong"&searchWithin="Last%20Name":"Zong"&newsearch=true&sortType=newest

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