Investigation into the Future of Human Translation Industry in the AI Era from the Translation Practitioners' Perspectives

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Abstract: This study investigates the future of the human translation industry in the Artificial Intelligence Era. It addresses the question of whether the vast developments of AI in machine learning and natural language processing, which has significantly influenced the translation landscape, would eventually replace human translators. Data for this study was collected via interviews with academicians and practitioners in the field of translation working at universities in Palestine and Jordan. By focusing on the future of human translation in light of advancements made by AI, this paper attempts to promote valuable discussions and trigger positive debates among researchers in the field of translation. The overarching question that is debated today is: Do the vast alarming advancements made by AI in the field of translation constitute a threat to human translation industry and consequently a potential human replacement or positive tools that contribute to a fast better quality and enhanced text translation? Context–sensitivities, cultural specificities, emotiveness continue to be proper human properties. Utilizing technological advancements in machine translation in a collaborative effort can only work for the betterment of the field of translation.

Keywords: artificial intelligence (AI), human replacement, machine translation, technological advancements, translation

1. Introduction

In today's information, globalized society, language plays a key role as the main carrier of "intercultural communication". So, translation between world languages assumes a pivotal role in cultural communication (Ren 2021). Prior to the advent of artificial intelligence (AI) translation technologies, human translators primarily depended on dictionary machine translation (MT), such as Google Translate, Microsoft Translator, Deep L, to name just a few. Then, there occurred a shift to AI translation technologies.

AI can bridge language barriers and boost global communication. It translates texts across languages, using neural networks and learning algorithms.

The translation industry, especially small businesses and organizations, was attracted by the efficiency, speed and cost-effectiveness associated with AI-enhanced translation, which can process huge amounts of data in seconds.

Concurrent with this fascination with AI translation, concerns were raised by human translators about the future of their employment. Questions were raised about the possibility of AI replacing human translation in the foreseeable future. Recent research studies, however, have emphasized the fact that the need for human translators will continue, especially in the area of post-editing. Herbig et al. (2019: 1) state that "Current advances in machine translation increase the need for translators to switch from traditional translation to post-editing of machine-translated texts, a process that saves time and improves quality."

Publications have appeared that compared and contrasted AI translation and human translation, highlighting the pros and cons of each. Among the pros of AI translation are: speed, efficiency, accessibility and ability to process large datasets in a very short period of time. On the other hand, AI translation tools face serious challenges when translating culturally-specific content, such as proverbs, idioms and metaphors. Moreover, lexical connotations and cultural implications pose another challenge.

In contrast to AI translation, human translators can handle cultural nuances and culturally specific content. Besides, they can overcome gaps that may exist between the two languages by doing "intrinsic managing" (Farghal 2008) and making use of several translation strategies, such as modulation, foreignization and domestication, which are beyond the potentials of AI translation tools. Human translators are not without cons. For example, they charge more than AI and take more time for delivery.

The complex issues facing Artificial Intelligence Machine Translation (AIMT) are undeniable, especially when it comes to translation from Arabic to English or any other language and vice versa. The scarcity of Arabic corpus data, cutting-edge electronic dictionaries, lists of colloquialisms and other related linguistic and cultural tools would continue to stand in the way of computers producing workable translations. This is more so in poetry and other culturally sensitive genres than in other types of discourse (Schairer 1996, Mandaric 2022, Al-Sabbagh 2024).

The present study aims at investigating the perspectives of translation specialists and instructors on the future of the human translation industry in the midst of the fast advancements made by AI-powered translation technologies.

2. Related studies: Artificial intelligence translation in lieu of human expertise

In a contrastive study between machine translation and human translation in legal discourse, Moneus and Sahari (2024) examined whether the need for human translators is declining and whether people will be able to rely on machine translation in the legal field. Interest in this study was triggered by the latest developments in technology, the sweeping spread of artificial intelligence in the various fields of knowledge including translation and the wide accessibility and use of AI translation programs, such as Chat-GPT, Chat Sonic, GPT3 playground, and GPT4. This is in addition to Google Translate, Amazon Translate, Bing, Microsoft Translate, Deep L and computer-aided translation tools, such as Smart cat, Smart ling, Text-United, Crow din, You Chat and many other platforms. The researchers chose legal texts to be translated by humans and some of these translation platforms. The study demonstrated that human translations provided a better understanding of the cultural context, high level of accuracy and cultural sensitivity compared with AIMT. On the other hand, AIMT provided faster and more cost-effective translation but low level of quality. The study concluded that demand for human translators in the legal field will continue.

Mandarić (2022) examined the impact of artificial intelligence-driven translation on human translators' career prospects. He demonstrated that translation using AI technology possesses considerable potential, especially when applied to technical texts, given that the produced translation can be edited by professional translators. Hence, post-editing was crucial to determining how accurate a machine translation can be in comparison to that of a human. Therefore, translators should thoroughly determine whether they require a multitude of different technological resources in order to maintain an uninterrupted workflow. As the study pointed out, machine translation was viewed as less acceptable among native speakers as compared to human translation. Furthermore, participants in the study believed machine translation tools were convenient and easy to use as a result of their free and comprehensive functionality. However, these tools have some limitations, and they should be handled meticulously. It can sometimes be beneficial to use them for informational purposes, but it is detrimental to rely on them without guidance from a human in a professional setting. Furthermore, the researcher demonstrated that participants could distinguish between translations generated by humans and machines, regardless of their proficiency in the language. Specifically, the study found that machine translations of technical texts were both valuable and useful. However, literary translations were filled with errors that left readers unsatisfied, and participants appreciated the clarity and appeal of human translations of literary texts. On the other hand, the researcher asserted that technology, like machine translation, should be embraced rather than feared. The quality of AI-powered machine translation cannot be achieved and is not satisfactory without human intervention. Generally, the researcher contended that human translators use translation technologies primarily due to social and economic factors and not

because they lack expertise or confidence. The use of machine translation allows translators to meet market requirements and deadlines more swiftly and effectively.

Kanglang and Afzaal (2022) focused on recent advances in the application of artificial intelligence and machine translation to the teaching of translation to translators. They pointed out that machine translation is an exciting field that is rapidly advancing. They also observed that although AI translations are constantly evolving and can be fine-tuned to improve their clinical accuracy, they are not yet capable of achieving an accurate synchronized translation. In the study, it was found that AI constitutes an effective teaching methodology that provides a reduction in the number of errors associated with translation. The study also recommended proper training and education for learner translators, including master's degree courses to enhance their translation skills. Moreover, they acknowledged that AI may become a formidable force in the near future, despite not being in a position to pose a significant threat at this point. In order for AI to become a truly effective replacement for human translators, it must first learn natural language expressions and habits. It will be necessary to develop future translation software and interfaces that meet these requirements and offer better services.

Li and Chen (2019) conducted an assessment for four machine translation platforms; *Baidu Translate, Google Translate, Microsoft Translate and Yadao Translate* based on their efficiency, operating mode and condition. Translated texts by machines and human translators were compared using new "6-4" table and comprehensive errors' rate. They adopted manual scoring giving 6 out of 10 points for information and 4 points for expression. Errors were in the areas of semantics, mistranslation, grammar, ambiguous expressions, missing sentences and incorrect technical terms. The findings of the study revealed that the quality of machine translation showed a good level of improvement, but still did not match human translation. In fact, the study demonstrated that there is a wide gap between the quality of machine translation and human translation. Based on these findings the study concluded that MT cannot possibly replace human translation and both will coexist in the foreseeable future.

Tomasello (2019) addressed the potential implications of artificial intelligence in the field of translation. In response to recent advancements in artificial intelligence, many translators have expressed grave concerns regarding how their profession and societal standing might be threatened by AI machines. Moreover, statistics showed that these worries were unfounded, as the increase in employment opportunities compensated for any potential reductions in employment caused by automation. The study aimed to compare the performance of different machine translation tools such as Systran, SDL Trados, DeepL, Google Translate, and Amazon Translate to estimate the level of development in machine translation technology. The research indicated that humans continue to play an important role in translation, even though translation via neural machines is considered highly advanced. Tomasello (2019) promoted technology as a valuable tool that increases

the performance of translators as well as their productivity. Moreover, neural translation offers translators the opportunity to be involved in less stressful and more stimulating tasks, thereby providing them with an advantage in areas where their cognitive abilities are strong. Instead of seeing technology as a threat, it should be viewed as an invaluable resource that will help humanity flourish. The researcher concluded by stating that translators must possess the capacity to combine operational, managerial, technical, and digital proficiency along with human traits such as empathy, emotional intelligence, and creativity as a means of distinguishing themselves from AI machines during the age of artificial intelligence.

Zong (2018) examined the relationship between artificial intelligence and human translation. As of today, each of the two translation methods possesses its own unique features and benefits. He pointed out that machine translation is capable of both producing millions of translations each day and accommodating evolving linguistic customizations in ways that human translators are unable to do. It has proven particularly effective in domains where formulaic or formal language is being used. In contrast, machine translation lacks the ability to encompass ambiguous sentences as well as the ability to comprehend interpersonal relations, as humans do. Besides, the researcher pointed out that despite the significant progress made in machine translation, the process of getting high-quality, completely automatic translation remains a challenging undertaking. Accordingly, literature, including poetry, novels, and other forms, can be challenging to translate accurately using Artificial Intelligence. The researcher maintained that artificial intelligence software gradually enhances the translation process, rendering it more accurate and nuanced through collaboration with human translators.

Chen (2018) investigated the evolution of machine translation (MT) and artificial intelligence (AI) in the context of the translation industry by highlighting the role of human translators and identifying AI's future implications. In addition, it commended the advances made in MT, particularly those related to scientific translation. However, it also underlined the vital role of human translators in providing high-quality and accurate translations. Chen (2018) stated that MT is relatively low-cost when used as a preparatory method, but it requires human interaction to prevent errors, inhibiting the development of creativity and competence. The field of scientific translation may become more competitive due to machine translation. Furthermore, the researcher emphasized that MT tools such as Trados can increase the efficiency and effectiveness of translations by automating repetitive tasks and integrating machine learning, while stressing the critical editing role that translators are now expected to play. The study urged human translators to embrace AI technology and explore innovative ways to make the most of it. In summary, artificial intelligence offers immense potential for solving translation challenges, but it requires advancements and collaboration with human translators in order to be effective.

Schairer (1996) examined whether artificial intelligence (AI) has the potential to eliminate human translation. According to a study, both native Spanish speakers and near-native Spanish speakers judged the accuracy of machine translations to be inadequate. Spanish-speaking bilinguals found machine translations to be more difficult to follow, proving them to be marginally more understandable rather than accurate. Several lexical, grammatical, and syntactic errors were identified in computer translations. The researcher acknowledged that, notwithstanding the efforts made to promote pre-editing and post-editing, achieving acceptable outcomes was difficult. In the absence of proficiency in Spanish, English speakers were unable to conduct effective pre-editing prior to computer translation. The researcher concluded that Spanish speakers found machine translation confusing and unreliable, revealing computer translation's limitations with regard to human translation.

3. Data collection

The present study is an attempt to investigate the impact of AI on the field of translation and the role of human translators in Arabic-English translation and vice-versa. It seeks to answer questions concerning the fast development of AIMT. It raises questions of whether translators feel threatened by the possibility of being replaced by MT, and if not would their role change and in what way.

To answer the aforementioned questions, the researchers have distributed a questionnaire to (20) professional translators working mostly in departments of translation at different universities in Jordan and Palestine, after it was refereed by three professors in linguistics and translation. So, the sample is convenient. The range of experience in translation was between 3 and 45 years. There were nine questions that were informative for the most part. The questions and samples of the participants' answers are provided in a table in the forthcoming section. The study is qualitative in nature.

4. Discussion

In this section the researchers try to elicit a synthesis of the responses provided by the participants for each of the nine questions in the survey. More examples are provided in the table.

Question 1. How long have you been engaged in the translation field?
Participants have varied experience background in translation ranging from 53 years as the highest to 3 years being the lowest (see the table for more details).

Question 2. Will Artificial Intelligence Machine Translation (AIMT) impact the future of Human Translation (HT)?
All participants unanimously agree that AIMT will have an impact on the future of human translation in response to the first Yes-No question in the survey (only two out of the nine (9) questions were Yes-No questions).

Question 3. If yes, how?

Only one of the participants strongly believes that AIMT will replace HT in 10 years' time. Four people believe that the need for human translators will decrease and will be mainly limited to post-editing. The rest of the participants think that the role of translators will change, but the need for HT will continue as is with more proficiency in computer related skills.

Question 4. What are the potential benefits of AIMT to the field of HT?

Many participants indicated that AIMT would make translation faster, and would save time and money. It would also make available an array of texts from different cultures that will advance the knowledge of readers and translators and increase global awareness of these cultures.

Question 5. What are the implications of AIMT for the job market and employment of HTs?

This question inquiries about the job market for human translators in light of AIMT. It is believed that manual translation will gradually diminish. Job opportunities in translation might only be available for those who are equipped with sufficient knowledge in technology such as Computer Aided Translations (CAT) tools.

Question 6. How can AIMT be integrated into existing HT to improve efficiency and accuracy?

In this question participants are asked about the possibility of integrating AIMT into human translation for the improvement of efficiency and accuracy. Participants think that human translators can help improve technology produced translations by integrating their knowledge of culturally related aspects. Some believe that AIMT needs to be reviewed and checked by human translators for socio-cultural specific contexts which cannot be accurately handled by MT. However, some believe that the rapid development of AI nowadays might be astonishing in terms of its unpredictable capability of surprisingly providing the unexpected, spreading fear among those in the profession.

Question 7. As a translation expert, do you have any concern about the future of HT due to the rapid advancements made in the AIMT era?

Some participants think that AIMT would be a good choice due to its being cost effective, regardless of the low-quality translations produced compared to human translation. To avoid this some suggested that human translators should acquire sufficient knowledge in the latest technology used in translation. Human translators need to work harder on their linguistic and cultural competencies in the target language to be able to stand ahead of AIMT. Others believe that the changing rule of human translators is automatic and very likely to be confined to post-editing.

Question 8. In your opinion what are the skills and abilities that a HT should master to stay abreast of the advancements made by AIMT?

The abilities and skills human translators need to acquire to stay abreast of the advancements made in AIMT are in the areas of linguistics and cultural knowledge, in addition to computer literacy, updated translation programs and CAT tools that

need to be utilized in the field of translation. Knowledge and skill in the latest advancements in technology are needed in all fields of knowledge and translation is not an exception.

Question 9. Will AIMT completely replace human translators in the future? If yes, what then the factors and strengths of AIMT that might lead to an efficiently perfect replacement? If no, what then the factors and limitations that might preclude the replacement given the inevitability of human translation in relevant tasks?

This very last question is the second Yes-No question in the survey and directly inquiries about the possibility of replacing human translators by AIMT, a question so many people try to avoid. Only one of the respondents sees this as inevitable and positively stated that AIMT will replace human translators in less than 10 years' time. Not many posited that the human translator job would be in the area of post editing and proof reading (even though some bluntly said that there will be no need for proof reading as accuracy will be taken care of by other computer programs). However, most of the participants rejected the very idea of translators being replaced by AIMT. They believe that human translators will be in need and will continue to do their job and clearly said NO, Never Ever in response to this question.

Investigation into the impact of artificial intelligence machine translation on human translation

NO.	Question	Answer
1	How long have you been engaged in the translation field?	45 years, (3) 7 years, (5)5 years,11 years, 12 years, 20 years, 40+ years, 33 years, 8 years, 30 years, 3 years, 53 years, 30 years, 10 years.
2	Will Artificial Machine Translation (AIMT) impact the future of Human Translation (HT)?	Yes, Big yes, may be. Examples: (a) Big yes! In view of the recent successes of Artificial Intelligence/Machine Learning, AIMT is most likely to fundamentally impact HT in the near feature: many domains in HT will end up being AUTOMATED, meaning that AIMT may not only impact HT, but also replace it in at least many domains of HT. (b) It has already left an impact on Human Translation. And things are getting worse 😊 for translators, or better for companies or those who are looking for high quality translations and low costs. (c) No. (d) Yes.

		(e) Yes. It will be hugely impacted. (f) Yes, of course.
3	If yes, how?	(a) Positively, (b)Recent techniques of AIMT are not only capable of presenting verbatim translations, but also it proves capability of handling texts with sentimental readings, lexical/ structural ambiguities, technical or idiomatic language to a high degree of precision and accuracy. The more AIMT develops in Natural Language Processing/ Computational linguistics, the more the role of HT becomes dispensable. In fact, the role of HT already becomes minimal and it confines to translation cases involving a high level of subtlety and vagueness: the very few cases in which AIMT may not handle, which require the intervention of cognitive human intelligence and in such cases, HT may be employed. (c) Will be available for everybody online. (d) Yes. It will be hugely impacted. (e) The nature of the translator role will be different. His / Her work will be concerned with post editing and proofreading rather than translating. (f) It will reduce the need for human translators. It will also improve the quality of translation. It will save time, effort, and money. (g) It will improve the efficiency of human translators, but will not replace them. (h) I strongly believe that it will replace human translators, perhaps in the next 10 years or so. (i) It will largely replace the HT in the translation of non-creative texts. (j) AIMT has affected and will, for sure impact the future of translation and human translators in all related aspects. It will leave no chance for HT to translate documents written in

		standard languages. AIMT will be perfectly fine to do the job. There is no need for HT even to check the AIMT translation for the accuracy of the content and the language.
4	What are the potential benefits of AIMT to the field of HT?	(a) Perhaps HTs can sometimes double check their translations. (b) Save time, save effort, productive, efficient. (c) AIMT could make more texts available to readers in any language and thus facilitate better global awareness of texts from cultures and nations without a shared language with global cultural powers (i.e., Anglo-phone readers could have more access to different literatures and cultures). (d) It will facilitate and accelerate the process of translation. Therefore, it saves time, effort and even costs. (e) It will definitely increase the volume of translation work. (f) Saves time, effort, and money Improve the quality of translation. Increases the quantity of translation. (g) It will facilitate and accelerate the process of translation. Therefore, it saves time, effort and even costs. (h) As mentioned in the previous answer, it is expected to increase the efficiency of translation. Large volumes of texts will be translated quickly and easily. It will also reduce the cost of translation as less effort is made by humans. Like CAT tools, it also contributes to consistency in specialized translation. (i) It will definitely increase the volume of translation work

5	What are the implications of AIMT for the job market and employment of HTs?	(a) Artificial intelligence/Machine Translation is sparking a revolution that will affect every aspect of human life (e.g., industrial, agricultural etc..). Translation is no exception. Many HT manual jobs will be cancelled leading to imminent JOB LOSS among manual translators in the near future. It is expected that only translators who operate using tools of dedicated Artificial intelligence/Machine Translation will survive the purge of job market by AIMT. (b) The implications of the AIMT will definitely be very drastic as they affect the availability of jobs for human translators. Only very limited sectors will be available for the HT; these include areas related to the translation of culture-specific terms and texts where the AIMT is not expected, at least until now, to accomplish the mission of translating such texts and terms. (c) It will drastically reduce the need for human translators. It will also reduce the need for simultaneous and consecutive interpreters. (d) AIMT is expected to create new job and opportunities. As I earlier said, the nature of the work is going to be changes, Thus, new skills are starting to be required in the job market. Skills like knowledge in computers and software are now emerging in translation industry, and are highly preferred for localization and AVT. (e) Facilitating the translator role. Making his/ Her performance more efficient

6	How can AIMT be integrated into existing HT to improve efficiency and accuracy?	(a) Translation of culture-specific texts by AIMT needs checking by HTs. (b) Yes. (c) AIMT can be included into HT workflows to improve productivity and accuracy by having human translators improve and polish the translations produced by AI tools. Higher-quality translations are produced by combining the rapidity of AI with the sophisticated comprehension and cultural context supplied by human translators in a collaborative manner. (d) AIMT provides the translator with precise renditions where s/hr might struggle to find the precise equivalent. (e) The translator should be aware of the ability of AIMT in providing accurate translation, so he/she should be careful when providing translation as AIMT may provide a word- for-word translation, it does not provide the social or the cultural meaning adequately. (f) Automating repetitive tasks Reducing human intervention Processing large data Using data for research. (g) I don't know exactly, but maybe by dividing the task of translation into actual translation, performed by AIMT, and reviewing the resulting product by human translators. (h) It can be used for translating texts that have to be edited by the human translator. (i) As for literal translations involving clear unambiguous precise texts, AIMT can be safely integrated in translation. For ambiguous, imprecise texts, AIMT may be integrated but with the supervision from HT procedures. Still, there are contexts in which HT is inevitable. But Artificial Intelligence/ Machine Learning always surprises us with new innovations and solutions, making HT under on-going replacement.

		(j) I would say that all translators and practitioners are afraid of the (unknown) future of the HT due to the rapid and huge advancements in the AIMT era. Their concerns are justifiable in that no one can predict the limits that AI, in general, and the AIMT, in particular, can reach. For example, if the AI technologies of translation keep achieving new and rapid advancements, they might be able to deal with culture-specific terms and texts. If this happens, then what would be left for human translators to do? A big question that has no definite answer!
7	As a translation expert, do you have any concern about the future of HT due to the rapid advancements made in the AIMT era?	(a) I have many concerns about AI in any field, given that it has recently been used as a cost-cutting alternative to paying human labor. My main concern is that AIMT would exacerbate labor issues in translation and produce inferior quality work compared to what a human can produce independently. (b) A suggested temporary solution for the current situation could be the urgent need for human translators to acquire the skills of utilizing the new technologies used in translation. If humans cannot compete with machines, they can focus on areas where humans stand as the best option to perform actions. (b) He/she should not only master the source and target languages but be competent in the field of the translated text. In the translation of creative texts much higher level of competence is required. (c) No, as AIMT will change the roles and duties of human translators.

		(d) Yes, I do definitely. (e) A human translator needs to be proficient with translation software, knowledgeable about AI, and tech-savvy in order to stay up with AIMT. Furthermore, it is still crucial to have good language and cultural abilities in order to handle the more complex aspects that AI might overlook. (f) To keep learning and improving, and most important thing to not depend on Google translation. (g) To stay up to date (language skills, computer skills, communication skills/ professional skills) / adapt to the new technology/ get more training. (h) NO since AIMT still needs checking and proofreading by HTs.
8	In your opinion what are the skills and abilities that a HT should master to stay abreast of the advancements made by AIMT?	(a) HTs need to upgrade their kills and vary their readings to meet the challenges faced when engaging in advanced texts. (b) Not completely**.** (c) The ability of HTs to become/remain stakeholders in AIMT development is vital. Starting from there, HTs may need to become more technically literate to use and work alongside AIMT products and intervene when AIMT cannot produce an accurate or nuanced translation, such as understanding and communicating context. (d) Translators should make themselves updated for the developments in the field of AI or machine translation in general by mastering CAT Tools in general. (e) As any other field, translation is impacted by technology. This results in constant need for updating learning and

		acquiring new skills. For translators, in addition to the language and culture knowledge, the following skills need to be mastered: The use of computers: this includes not only basic computer skills, but also basic coding and programming. Digital literacy is going to be a must. The use of the different tools, that the advancement of technology is bringing, requires skills on how to deal with new tools. Project management skills are also required since translation is no longer a one-person show. A translator needs to be able to keep up with technology changes.
9	Will AIMT completely replace human translators in the future?	(a) No. (b) No, I don't think, or hope, so. (c) No, it will change his/her role only, as human translators feed the machine with terms, expressions, structures…etc. (d) I don't think so. Some of the translations produced by the AIMT are decontextualized. (e) While it can handle routine tasks, human translators bring cultural understanding, context, and creativity that AI may struggle with. (f) No. (g) It shouldn't, nor do I think it will. Even if AIMT replaces most human labor and labor costs, there will still be demand for high-quality translation somewhere, especially if translations of inferior quality produced by AIMT become the norm. The value of a good human translator would remain unchanged. (h) Not Completely. (i) Never ever.

		(j) Not completely, but it will sharply decrease job opportunities for human translators. (k) No.

Some participants with extreme views perceive AI as a threat to the translation profession, suggesting it may replace human translators. However, consistent with the perspectives of many researchers (Herbig et al. 2019; Mandarić 2022; Al-Sabbagh 2024, among others), most participants consider AI as a tool that can augment the work of professional translators. AI can handle repetitive tasks, allowing professional translators to focus on creative translation tasks that require human expertise and cannot be automated. Achieving cultural appropriateness and sensitivity in texts remains a domain where professional translators excel, as machine translation cannot ensure such accuracy. Complex legal, medical, and literary texts also require the expertise of human translators. Furthermore, the role of professional translators is evolving toward post-editing machine-translated texts. Although machine-translated content offers convenience and cost-effectiveness for businesses, it presents new challenges for professional translators. This situation requires that translators stay current with advances in AI tools and technology and expand their competencies in computational linguistics and AI training. The relationship between AI and human translators is becoming increasingly interconnected, as ongoing AI developments will continue to challenge translators to respond with innovative solutions.

5. Conclusion

In line with previous studies (Chen 2018; Tomsello 2019; Mandaric 2022; Al-Sabbagh 2024, among others), this study concludes that the future of translation lies in a collaborative model. In this model, human translators and AI-powered tools work together to leverage their respective strengths and produce high-quality, culturally sensitive translations that address the diverse needs of clients and end-users. To maintain relevance and value in the era of AI and machine translation (AIMT), human translators must continually adapt, acquire new skills, and remain informed about technological advancements, integrating these tools into their practice to improve productivity, accuracy, and competitiveness. Rather than viewing AIMT as a threat, translators are encouraged to embrace technological progress and seek innovative integration methods, thereby enhancing translation

quality and efficiency and contributing to the ongoing evolution of the translation industry.

In summary, AI will not render human translators obsolete. However, AI is transforming the translation profession by reshaping roles and requiring new computational skills. Human translators should regard AI as a complement to their expertise to achieve optimal outcomes.

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