Traduction et Langues Volume 24 Numéro 01/2025
Journal of Translation and Languages مجلة الترجمة واللغات
ISSN (Print): 1112-3974 EISSN (Online): 2600-6235
DOI: https://doi.org/10.52919/translang.v24i01.1034

AI-assisted Interpreting: Valuable Tool for Professional Interpreters or Job Displacement?

Cristina Cela Gutiérrez
University of Las Palmas de Gran Canaria- Spain
cristina.cela@ulpgc.es

To cite this paper:
Gutiérrez, C, C. (2025). AI-assisted Interpreting: Valuable Tool for Professional Interpreters or Job Displacement? *Traduction et Langues, 24 (1)*, 263-281.

Received: 26/11/2024; **Accepted**:21/03/2025, **Published:**30/06/2025

Correspondingauthor : Cristina Cela Gutiérrez

Key words

Artificial Intelligence Machine Interpreting; Computer-Assisted Interpreting and Translation; Socio-cultural context; Communication process

Abstract

Today, Artificial Intelligence (AI) has permeated across diverse disciplines, professional sectors, and recreational activities. Translation and interpreting are two sectors in which AI is becoming increasingly important. With more and more companies incorporating AI into their means of production or services, it is common for many language professionals to wonder whether their job will one day be replaced by a machine. This question has been a relevant issue since the 18th Century with the contributions of philosophers and scientists, who anticipated notions of computer science. However, in recent years, the concern about the future of professional interpreters has come up again due to the advances in AI. In light of the growing controversy and concern surrounding computer-assisted interpreting (CAI) and translation (CAT), this study aims to verify the reliability of AI applications in interpreting, focusing particularly on the positive and negative aspects of AI use in communicative language exchanges. Our specific purpose is to demonstrate that human interpreters will continue to deliver high-quality work that is tailored to the socio-cultural context of those involved in the communication process. To this end, the study explores recent developments in AI-driven interpreting technologies, such as neural machine translation (NMT) engines and real-time speech recognition systems, assessing their effectiveness in comparison with human interpreters. Employing both qualitative and quantitative methodology —such as case studies and user Through qualitative and quantitative analysis, including case studies and user feedback— the research identifies significant limitations of AI systems, particularly in managing complex discourse, cultural references, nuances, and emotional intelligence. Furthermore, it considers ethical challenges regarding data privacy, user trust, and accountability. The results show that although AI can provide useful assistance in specific contexts—particularly for routine or low-risk interactions—it falls short in cultural sensitivity and register adaptability; scenarios charged with high-risk consequences, and emotionally attached. Ultimately, the study concludes that AI is unlikely to replace professional interpreters, but rather will serve as a complementary instrument that supports and enhances human expertise in the field.

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

Mots clés

Ingelligence Artificielle; Interprétation et Traduction assistées par Ordinateur; Contexte Socioculturel; Processus de Communication

Résume

Aujourd'hui, l'intelligence artificielle (IA) s'est infiltrée dans diverses disciplines, secteurs professionnels et activités de loisirs .La traduction et l'interprétation sont deux des secteurs dans lesquels l'IA gagne en importance. Alors que de plus en plus d'entreprises intègrent l'IA dans leurs moyens de production ou leurs services, il est courant pour de nombreux professionnels des langues de se demander si leur travail sera un jour remplacé par une machine. Cette question est d'actualité depuis le XVIIIe siècle, avec les contributions de philosophes et de scientifiques qui ont anticipé les notions d'informatique. Toutefois, ces dernières années, l'avenir des interprètes professionnels est redevenu préoccupant en raison des progrès de l'intelligence artificielle. À la lumière de la controverse et des préoccupations croissantes entourant l'interprétation et la traduction assistées par ordinateur (IAO), cette étude vise à évaluer la fiabilité des applications de l'intelligence artificielle (IA) dans le domaine de l'interprétation, en se concentrant particulièrement sur les aspects positifs et négatifs de son utilisation dans les échanges linguistiques. Notre objectif particulier est de démontrer que les interprètes humains continueront à fournir un travail de haute qualité adapté au contexte socioculturel des personness impliqués dans le processus de communication. À cette fin, l'étude explore les avancées récentes des technologies d'interprétation pilotées par l'intelligence artificielle, telles que les moteurs de traduction automatique neuronale (NMT) et les systèmes de reconnaissance vocale en temps réel, et évalue leur efficacité par rapport à celle des interprètes humains. Grâce à une méthodologie à la fois qualitative et quantitative (telle que des études de cas et des commentaires d'utilisateurs), la recherche met en lumière les limites significatives des systèmes d'IA, en particulier dans la gestion des discours complexes, des références culturelles, des nuances et de l'intelligence émotionnelle. Elle examine également les défis éthiques liés à la confidentialité des données, à la confiance des utilisateurs et à la responsabilité. Les résultats montrent que, bien que l'IA puisse fournir une assistance utile dans des contextes spécifiques, tels que les interactions de routine ou à faible risque, elle n'est pas à la hauteur en matière de sensibilité culturelle, d'adaptabilité des registres, de scénarios à haut risque ou d'attachement émotionnel. L'étude conclut finalement que l'IA ne remplacera probablement pas les interprètes professionnels, mais qu'elle servira plutôt d'instrument complémentaire pour soutenir et améliorer l'expertise humaine dans ce domaine.

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

Palabras Clave

Inteligencia Artificial; Interpretación Automática; Interpretación asistida por ordenador; Contexto sociocultural; Acto comunicativo

Resumen

Hoy en día, la Inteligencia Artificial (IA) ha irrumpido en diversas áreas de estudio, secotores profesionales y actividades de ocio. La traducción y la interpretación son dos de los sectores en los que la IA está ganando importancia. Cada vez son más empresas que incorporan la IA a sus medios de producción o servicios, es habitual que muchos profesionales de la lengua se pregunten, si su trabajo será sustituido algún día por una máquina. Esta cuestión viene siendo relevante desde el siglo XVIII con las aportaciones de filósofos y científicos, que anticiparon nociones de informática. Sin embargo, en los últimos años la preocupación por el futuro de los intérpretes profesionales ha vuelto a surgir debido a los avances de la IA. Dada la controversia y la creciente preocupación por la Interpretación Asistida por Ordenador (IAC) y la Traducción Asistida por Oordenador (TAO). Por eso, este trabajo tiene como objetivo principal analizar, si la aplicación de la IA es fiable, con especial atención a la interpretación, estudiando los aspectos positivos y negativos del uso de la IA en el intercambio lingüístico en contextos comunicativos especializados. Nuestro propósito particular es demostrar que los intérpretes humanos seguirán proporcionando un trabajo de calidad y orientado al contexto sociocultural de los participantes implicados en el acto comunicativo. Para ello, el estudio explora los últimos avances en tecnologías de interpretación basadas en IA, como los motores neuronales de traducción automática (NMT) y los sistemas de reconocimiento del habla en tiempo real, se evalúa su eficacia en comparación con la de los intérpretes humanos. La investigación, que emplea metodología cualitativa y cuantitativa —como estudios de caso y reseñas de intérpretes profesionales—, identifica limitaciones significativas de los sistemas de IA, en particular en la gestión de discursos más complejos, referencias culturales, matices y la inteligencia emocional. Además, examina los desafíos éticos relacionados con la privacidad de los datos, la confianza de los usuarios y la responsabilidad. Los resultados muestran que, aunque la IA puede ser una ayuda útil en contextos específicos —especialmente en interacciones rutinarias o de bajo riesgo—, no es lo suficientemente sensible a los referentes culturales, ni se adapta con precisión a los registros; este es el caso de contextos de alto riesgo y con una gran carga emocional. Por último, el estudio concluye que es poco probable que la IA sustituya a los intérpretes profesionales, pero servirá como instrumento complementario para mejorar la pericia humana en este sector.

1. Introduction

In recent years, the rapid advancement of Artificial Intelligence (AI) has begun to transform various fields, and interpreting is no exception. The integration of AI into interpreting processes has demonstrated not only to enhance the efficiency of communication across languages, but also to open new possibilities for access and understanding in our increasingly globalised world.

When in the early 1950s, the theorist Alan Turing predicted that the computer was like a black box, in which the inside content was not the key issue, but rather the responses

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

coming out of it. At that time, nobody could imagine that artificial intelligence would evolve from theory to reality and become a direct rival to human capacities. In case of a human-computer interaction, a pertinent question to make is whether the responses generated by the machine can be distinguished from those derived from a human interaction, as the computer is deduced to be the functional correspondent of a human. The 'imitation game', as Turing (2009, 23-65) named this paradigm, is still on the rise many years later. Despite the present application of AI is confined to certain domains, it is evident that AI systems have demonstrated considerable operational capacities and potential for a rapid advancement.

This article begins with a broad overview of the general concept, placing particular emphasis on the use of AI in interpreting activities. After having analysed the present situation of AI in interpreting, the main studies carried out in this field and the latest developments, our main purpose with this study is to highlight the real benefits that AI would bring to professional interpreters, to what extent its impact is useful and advantageous in their tasks and, finally, to determine the negative aspects and shortcomings of AI in this field. This work leads to the conclusion that the figure of the professional interpreter is still an indispensable requirement in terms of quality, accuracy and privacy.

2. Artificial Intelligence

2.1. Defining the concept of AI

In the last few decades technological advances have enabled the development of different algorithms that attempt to emulate human behavior. These advances have contributed to the current emergence of AI, whose primary purpose is to replicate human capacities. This concept is defined by Sheikh et al. (2023) as: “Artificial Intelligence is a technology that enables machines to imitate various complex human skills.” However, to delve more into this definition and be more precise, we refer to the one established by the ISO/IEC 22989 (2022)[1]: “Artificial intelligence is a technical and scientific field devoted to the engineered system that generates outputs such as content, forecasts, recommendations or decisions for a given set of human-defined objectives.”

This detailed description allows a better understanding of the paradigm under research. The skills of AI extend to a range of tasks, including translation, proofreading and voice translation. Though real-time voice translation systems are still at a very early stage, it is logical to think that the computer industry is eager to further develop this technology. Consequently, the implementation of interpreting services delivered by the AI will become a reality in the professional market.

[1] https://www.iso.org/obp/ui/en/#iso:std:iso-iec:22989:ed-1:v1:en

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

2.2 Artificial Intelligence in Interpreting

In this new era of communication and technological evolution, the search for digital tools at the service of interpreters has witnessed substantial progress. The latest computer-assisted interpreting (CAI) systems are already capable of providing advanced options based on the current advances in artificial intelligence. Some of these developments, as Li (2022) explains, are Automatic Speech Recognition (ASR), the technology that converts spoken language into text, Speech-to-Text Transcription, the transcription of spoken language into written text, and the most recent advancement End-to-End Automatic Speech Recognition (E2E), a system that converts a sequence of sounds into a sequence of words.

Fantinuoli (2018, p. 51) asserts that "computer-assisted interpreting (CAI) tools fall into the category of process-oriented technologies". Interpretation is a challenging cognitive process that demands deep concentration, active use of short-term memory, synthesis, and rigorous and agile control of terminology and phrases. In this line, AI-assisted interpreting has shown to enhance productivity and quality, while reducing interpreters' workload to focus more effectively on their preparation for interpreting tasks. Interpreters' preparation is key to a successful performance and encompasses the study of the subject matter, familiarisation of terminology, creation of glossaries, compilation of personal information about the speakers and their work, etc.

3. Interpreting assisted by Artificial Intelligence

Interpreting, the process of conveying spoken messages from one language to another in real-time, has traditionally relied on human interpreters (Pöchhacker, 2022). However, with the advent of AI technologies, particularly natural language processing (NLP) and machine learning, we are witnessing a shift towards automated interpreting systems. These systems have demonstrated to be able to analyze and translate spoken language with remarkable speed and accuracy. However, the performance of the interpreting task is contingent to an essential condition (ISO, 2019)[2]: "conveying both the language register and meaning of the source language content". This norm underlines that interpreting, as opposed to translation, is intrinsically more tied to meaning, context and sociocultural patterns. At this point it is undeniable that interpreting constitutes an instance of an intercultural communication, and that the communicative situations requiring professional interpreters are contexts of intercultural communication characterised by the diversity of sociocultural backgrounds. In this instance, it is pertinent to highlight the observations made by Cho (2021, p. 12):

[2] https://www.iso.org/obp/ui#iso:std:iso:24019:dis:ed-1:v1:en

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

> It is perhaps not too much of a stretch to say that no single profession is more experienced than interpreters in terms of intercultural communication, for they are centrally engaged in day-to-day interactions where issues of culture, language and power constantly intersect.

Computers can be programmed with protocols and codes of behavior; however, they lack the capacity to feel empathy or respond to social and cultural considerations with sensitivity. In this regard, it is reasonable to agree with the assertion of Kohn (2020 that an artificial intelligence with today's computing power could learn how to operate in a consistent register of cross-linguistic acceptability. However, in today´s international conferences and meetings, speakers frequently emply a flexible language shifting from formal to colloquial registers; this linguistic flexibility involves a blend of politeness forms, address structures, and formal expressions and in which politeness and address forms and highly formal expressions interwoven with casual and conversational language, as evidenced in Kohn[3] (2020):

> But nowadays people go all over the place. Politicians, officials and diplomats range flexibly between formality and colloquialism. The more diverse public speech becomes, the more it widens cultural differences, and the more challenges it poses for interpreters.

According to Kohn, the ability for linguistic flexibility can have adverse consequences on the communicative interaction between speakers of different languages and cultural backgrounds. Consequently, it is conceivable to assume that the future of interpreting will demand human interpreters and rather than artificial ones to cope with the challenges posed by more complex linguistic frameworks. The greater the complexity, the greater the need for qualified individuals.

3.1 Advancements and Key Studies

Several studies have highlighted the effectiveness of AI in interpreting. In this section we will discuss some of the latest key studies and investigations exploring the application of artificial intelligence in interpreting. Researchers from the Stanford Human-Centered Artificial Intelligence (HAI) examined the impact of AI on the interpreting profession. The study reveals that AI chatbots are still too English-language centric and examines the impact of AI on linguistic communication: "Human preferences and experiences are not universal, and AI chatbots need to reflect" (McKendrick[4], 2024). They conclude that human preferences are not universal, and LLMs must reflect "the social context of the people it represents – leading to variations in grammar, topics and even

[3] https://aiic.org/site/uk-ie/AI-interpreting/AI-human-insight-importanceofunderstanding
[4] https://www.zdnet.com/article/lost-in-translation-ai-chatbots-still-too-english-language-centric-stanford-study-finds/

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

moral and ethical values systems." (Michael, Held and Yang, 2024). Overall, the fundamental point of this study is that "a huge variety of languages and communities across the globe are currently being underserved by AI and chatbots." (McKendrick, 2024). However, commands and instructions limited to English language may lead to misinterpretation of phrases, idioms or cultural references.

Another significant study published by PoliLingua, a global language services provider company founded in 2022 by a team of experienced linguistics and project managers, examined the performance of AI systems in interpreting complex dialogues. The findings indicated that while AI systems excelled in translating straightforward conversations, they struggled with idiomatic expressions, tone, sarcasm, humor and cultural nuances, which are often critical in interpreting (Munteanu, 2024). This highlights the ongoing need for human oversight in certain contexts to ensure the accuracy of the interpretation.

The Interpreting SAFE-AI Task Force was founded in 2023 by a group of recognized professionals in the interpreting sector. This collective advocates for the responsible and ethical use of AI in communication exchange, ensuring the quality of professional interpreting services. They started a study led by CSA Research on the current perceptions about the spoken and signed AI-assisted interpreting systems. This large-scale study of users, clients and providers of interpreting services in US resulted in an extensive report called "Perceptions on Automated Interpreting," and the key findings reveal a complex picture of acceptance and scepticism towards AI in interpreting. "While some respondents see AI as a promising solution for routine and repetitive conversations, others express concerns about its suitability for more complex, nuanced, and personal interactions" (Dumont-Perez[5] 2024). The conclusion exposed by the Interpreting SAFE-AI Task Force appeals for a balanced approach, enabling the potential of AI to contribute positively to the field of interpreting, while prioritising technology´s reliability, human dignity and ethical principles.

The World Economic Forum published the White Paper Report 2023 entitled Jobs of Tomorrow: Large Language Models and Jobs. The report begins with the following assertion:Language capabilities overlap substantially with tasks performed on the job, with estimates suggesting that up to 62% of work time involves language-based tasks. The report maps the exposure potential of tasks and jobs that can significantly reshape the future employment picture. Tasks are classified into four levels according to the impact that artificial intelligence can have on the performance of the tasks of an occupation:

- High potential for automation: The task will be performed by Large Language Models (LLM). This is the case of credit authorizers, checkers or clerks, management analysts,

[5]https://www.languageline.com/blog/groundbreaking-study-reveals-combination-of-acceptance-skepticism-about-ai-and-interpretation

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

telemarketers or statistical assistants. Interpreters and translators hava an automation potential of 16%.

- Higher potential for augmentation: Humans will continue to execute the tasks and LLMs will support and increase human productivity. The most exposed occupation, with a 100% exposure rate, is that of insurance agents, followed by bioengineers, biomedical engineers, mathematicians and editors. At this level, the profession of interpreters and translators is at the bottom of the list with a 60% exposure rate.
- Low potential for automation or augmentation: Humans will continue to perform their tasks without significant impact. Educational, guidance, and career counsellors and advisors rank first on the list with an 84% automation potential, while the lowest positions are occupied by substitute and short-term teachers, mental health and social workers, and pediatricians.
- Non-language tasks: Human tasks are unaffected. This includes occupations that require the manpower and the expertise of professionals such as electricians, welders, plumbers, slaughters and butchers, automotive technicians and mechanics, janitors, cleaners, hairstylists and cosmetologists, and all types of drivers and automotive operators (bus, taxi, train, truck, tractor).

This detailed report concludes that LLMs will transform business and the foundations of work; while some existing jobs will suffer a displacement, others will be enhanced and eventually many new roles and tasks will be created. This approach helps to take proactive steps in preparing the working society for the unstoppable transformation ensuring that all workers benefit from the potential of AI, as the final note of the report[6] (2023) states:

> Large language models present an opportunity to extend human potential, grow industries and strengthen global economies. Yet their rapid adoption contains both risks and opportunities for the workforce. The approach presented in this white paper helps plan for the direct impact on tasks and jobs and informs government, business and workers on the actions they can take now to prepare for the future.

In 2021 the European Commission launched a comprehensive review on Artificial Intelligence, analyzing various AI language tools and their applications in multilingual settings. The report emphasized the potential of AI to facilitate communication in international organizations, thereby promoting inclusivity and collaboration among diverse linguistic groups. The main goal of this review is to provide a coordinated plan to ensure that AI works for people and has a positive impact on society. The MIT Media Lab,

[6] https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/superagency-in-the-workplace-empowering-people-to-unlock-ais-full-potential-at-work

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

a Laboratory for Social Machines (LSM) established in 2014, launched in 2021 in the MIT Center for Constructive Communication, a community of researchers in AI, social science,

learning technologies and digital interactive design. Deb Roy[7] (2021), leading Professor of this project, states that this center was founded to:

> Design and evaluate new tools, methods, and human-AI systems for fostering dialogue, listening, deliberation, bridging, mediation and other forms of constructive communication. […] These collaborations will be critical for launching pilot programs to evaluate which tools offer the greatest potential to create more trusted communication within and across communities nationwide.

Researchers at MIT explored the application of AI in real-time translation and interpreting. The study focused on the development of neural machine translation systems and their application in live settings. It demonstrated significant improvements in translation accuracy and speed, paving the way for more effective AI interpreting tools. However, they agree that there is still a lot of work to be done to achieve the reliability and quality standards to rely on the delivery of the machine without the revision of a professional.

3. Positive versus Negative Aspects of AI-assisted Interpreting

In this section, we outline the positive and negative aspects of AI applied to interpreting, as discussed above. We observe that both positive and negative aspects are balanced in terms of the number of benefits and limitations. However, the negatives and limitations outweigh the benefits in terms of professional performance. The lack of accuracy, quality and contextual understanding are unacceptable factors as they fail to comply with the basic principles of professional ethics for interpreters such as fidelity (message must be interpreted faithfully and accurately), avoidance of mistakes (any error in interpreting must be immediately rectified), integrity and loyalty (interpreters' responsibility is to preserve the impartiality and the confidentiality of the information).

[7] https://news.mit.edu/2023/mits-center-constructive-communication-takes-aim-destructive-nature-social-media-0510

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

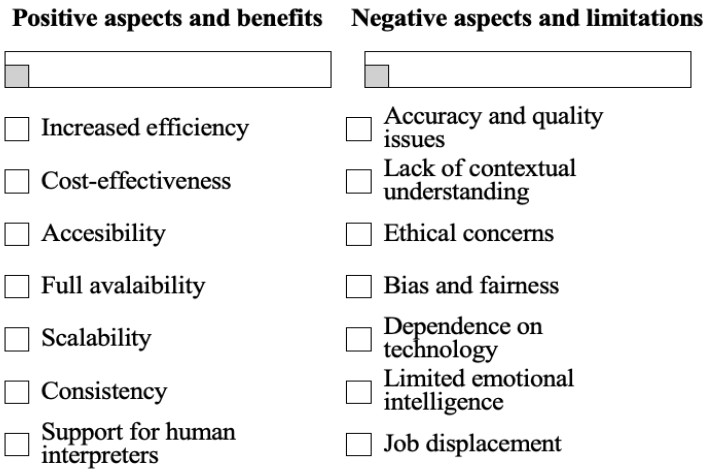

Figure 1. List of Benefits vs. Limitations of AI in Interpreting

3.2 Benefits of AI in Interpreting

The integration of artificial intelligence in language interpreting offers several significant benefits that enhance communication across linguistic barriers. Ahmed (2022) affirms that the pros of using technology in SI include "cutting costs, speed of finding relevant information before the event, and the ease and availability of the service." Fantonuoli (2019, pp. 3-5) emphasizes three drives: "the anthropological drive (through relieving professionals from some of their work burdens); the conomic drive (related to productivity, optimization and reduction of costs); and the socio-psychological factor (where a technology-obsessed society pushes interpreters to accept change)." Ziegler and Gigliobianco (2018) remark that technology contributes to "reduce interpreters travel and accomodation expenses and increases availiability. This passage briefly describes how integrating AI and tecnology into interpreting can be benefitial:

3.2.1 Increased Efficiency

AI systems can process and translate languages at a speed that far exceeds human capabilities (Pöchhacker&Liu, 2024). This is particularly beneficial in scenarios such as international conferences or emergency situations where timely communication is crucial. The main advantage of AI is its capacity to provide instant translations, enabling uncomplicated and faster interactions.

3.2.2 Cost-Effectiveness

The use of AI for interpreting can reduce costs associated with hiring professional interpreters, making language services more accessible to organizations with limited budgets. AI tools can provide language services at a fraction of the cost, making them

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

accessible to a wider range of users, including small businesses and non-profits. However, those who opt for this alternative must be aware that this service lacks the value and professional quality that only humans can add to the interpreting process.

3.2.3 Accessibility

AI-driven interpreting tools can provide services to individuals who may not have access to human interpreters, such as in remote areas, during online events or emergencies that require immediate action. The *Global Risks Report* of the World Economic Forum (2021) entitled a section *Hindsight: Reflections on Responses to COVID-19*, in which it was highlighted how AI interpreting tools have been instrumental in breaking down language barriers during the COVID-19 pandemic. This shows how AI interpretation may enhance inclusivity and overcome language barriers that would otherwise hinder communication and participation in discussions or services.

3.2.4 Full availability

AI has a 24/7 availability. AI-assisted interpreting tools can operate around the clock without the need for breaks, rest or downtime. This ensures that language services are available whenever needed, accommodating users in different time zones or those requiring immediate assistance.

3.2.5 Scalability

Scalability refers to the ability of a computing process to be used or produced in a range of capabilities as defined by the Oxford English Dictionary (2024). AI systems can handle a growing amount of information and functions as the volume and size change. In our case, AI systems can easily scale to handle multiple languages and large volumes of content simultaneously making them especially helpful for global organizations or companies that need to communicate with different audiences across the world.

3.2.6 Consistency

Given that AI-driven interpreting systems are essentially a machine translation software that utilizes multilingual translation memories, corpus resources and online dictionaries, they can deliver consistent translations across different contexts and sessions. The use of these linguistic resources achieves a more homogeneous language. This is particularly ideal for specialised settings such as law or medicine, where the uniformity of terminology and register is highly requested.

3.2.7 Support for human interpreters

AI can serve as a valuable tool for human interpreters, providing them with real-time assistance and suggestions. AI can improve the quality of interpreting and allow human interpreters to focus on more complex aspects of communication, such as emotional nuances and cultural context, as well as to reduce the workload of preparation for the interpreting event.

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

3.3 Shortcomings and Negative Aspects of AI applied in Interpreting

While the application of AI in interpreting offers numerous benefits, there are also several negative sides and challenges that need to be considered. Here are some of the key concerns:

3.3.1 Accuracy and Quality Issues

AI systems, particularly those based on machine learning, can struggle with the nuances of human language. They may misinterpret idiomatic expressions, cultural references, or emotional tones, leading to inaccuracies in translation. A study by Munteanu (2024) noted that while AI excels in straightforward conversations, it often falters in more complex dialogues, resulting in misunderstandings. The main pillar of an interpreter's work is to faithfully convey the original message, delivering an accurate interpretation of the information in the source text without making any mistakes. At this point, AI-assisted interpreting falls short.

3.3.2 Lack of Contextual Understanding

AI cannot fully understand context in the same way a human interpreter does. On the one hand, human interpreters can draw on their knowledge of the subject matter, the speakers' intentions and the cultural context to provide more accurate results. On the other hand, AI systems may not grasp these subtleties and nuances, leading to translations that are technically correct but contextually inappropriate. Failing to provide adequate language services breaches one of the basic requirements of the ethical code: fidelity to the language register and communicative context.

3.3.3 Ethical Concerns

"The use of AI and big data in interpreting raises several ethical questions in terms of data protection and confidentiality" (Horváth, 2022, p. 1). Many ethical questions arise, particularly regarding data privacy and security. AI systems often require large amounts of data to be effective, and these may include sensitive information. There is a risk that this data could be misused or inadequately protected, resulting in a violation of the confidentiality and the principles of loyalty and integrity associated with the practice of the profession.

3.3.4 Bias and Fairness

AI systems can inadvertently perpetuate biases present in the data they are trained on. If the training data are deficient in terms of diversity or contains biased language, the AI may produce skewed interpretations that reinforce stereotypes or exclude certain groups. A report by the European Commission (2020) reported the importance of addressing bias in AI systems to garantee impartial and fair interaction.

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

3.3.5 Dependence on Technology

As organizations increasingly rely on AI for interpreting, there is a risk of becoming overly dependent on technology. This could lead to a decline in the demand for human interpreters, potentially diminishing the profession and reducing the availability of skilled interpreters for situations where human insight is crucial.

3.3.6 Limited Emotional Intelligence

AI lacks emotional intelligence, which is often essential in interpreting, especially in sensitive situations such as medical or legal contexts. Human interpreters can pick up on emotional cues and adjust their interpretations accordingly, while AI systems may fail to recognize or respond to these nuances.

3.3.7 Job Displacement

Among professional interpreters, the question of whether their job will be replaced by a machine is becoming more and more frequent. This question has been a relevant issue since the early 18th Century with the contributions of the philosopher, mathematician and scientist, Gottfried Leibniz, who anticipated notions that much later developed into the probability theory, linguistics and computer science; for that reason, he was called 'the last genius' (Jorati 2014).

The continuous evolution of AI-assisted interpreting raises concerns about job displacement for human interpreters. Though this point is mentioned last, the truth is that it is the most headache-causing and worrying for professional interpreters. This involuntary loss of employment or workload is due to various factors; in the case that concerns us in the context of the present study, the reasons are essentially beyond human control. These include, in the first position, technological advancements that result in job eliminations, task reductions, workforce reductions, and layoffs. However, after having analysed both the benefits and limitations of AI-assisted interpreting, our consideration in this regard is that many uses of AI still need to be explored, and machine interpreting can be included as a support tool to augment, improve and facilitate the efficiency and quality of the work of professional interpreters.

4. Methodology and analysis of results

A 10-question survey was conducted to analyse the positive and negative aspects mentioned above. The questions ranged from general aspects such as training, work experience and position; to more specific questions about the dangers of AI in the profession, the future of interpreting in the digital era and the ethical code. A total of 25 participants aged between 25 and 60 with a Degree in Translation and Interpreting completed the survey, and thirteen (13) of them are or have been professional interpreters in the public and private sectors. Subsequently, the results of the survey were subjected to a phase of discussion and contrasted with a group of 6 professional interpreters. These individuals have accumulated a minimum of 15 years of professional experience in

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Spanish, English and French-speaking countries, mainly working as conference interpreters at international events and liason interpreters at multilingual meetings.

There was a concurrence and unanimity among all the participants regarding the value of the contributions made by our research, and they recognized to have indeed tested and incorporated AI into their professional tasks, particularly during the preparation phase prior to a conference interpreting. All agreed that the application of AI serves the primary function of of reducing working time and enhancing quality on both the lexical and technical levels. However, special emphasis was made on the need for a professional to proofread the management of information and terminology to ensure the quality and fidelity of the interpretation. The data collected is illustrated in the graphics below:

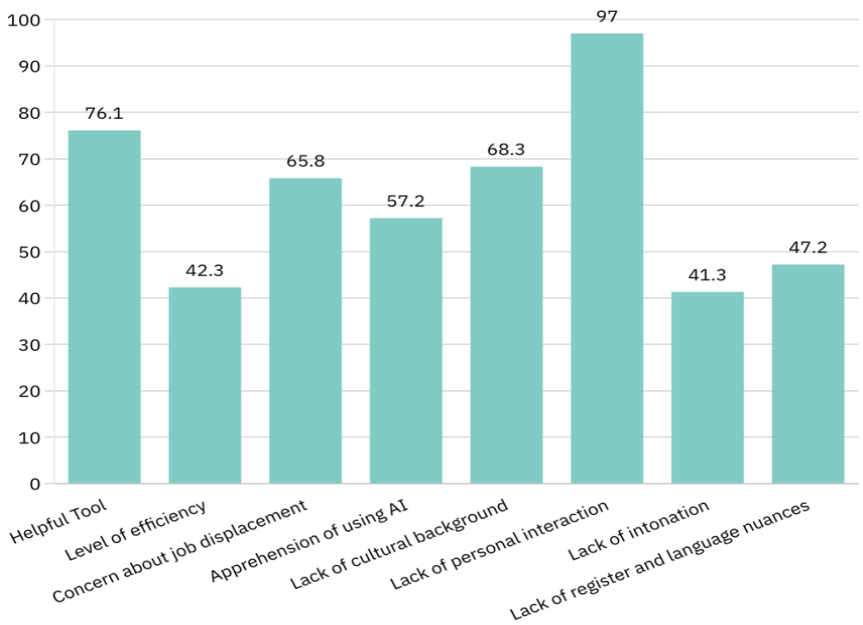

Figure 2. Illustration of the results obtained by the conducted survey

Most participants (76,1%) consider AI to be a benefitial instrument, with 42,3% expressing their conviction in the efficiency of AI to enhace and develop their professional activities. However, 65,8% of respondents express their concern regarding the future of the profession, as it is currently understood, and the significant impact of AI on job displacement and career adaptation. Additionally, it is noteworthy to emphasise the apprehension shown by many professionals specialising in languages and communication (57,2%) in terms of the reliability of AI tools.

This staggering concern is intrincately associated with limitations of AI-assisted interpreting. A relevant priority (68,3%) is placed on the cultural elements involved in

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

the communication contexts and the interaction of speakers who do not share identical beliefs cultural backgrounds. The consequences are multifaceted, resulting in a lack of

personal interaction (97%), register and language nuances (47,2%), and intonation (41,3%).

In summary, while Machine Interpreting (MI) is a support tool for professional interpreters that eases and improves the effectiveness in reducing their workload mainly devoted to compilation of information and terminology and the creation of glossaries in the preparation phase before interpreting, human interpreters generate superior results than those delivered by AI. As concluded in the mixed-methods study conducted by Yin (2024, 1-18), "while AI assistance reshapes interpreters' workflow—reducing cognitive load and altering working modes—it does not fundamentally change their core role."

5. Conclusion

Despite the promising advancements of technology in the field of AI, there are challenges that need to be addressed, and it is still necessary to unfold the potential of the application of these technologies in the field of interpreting. One major concern is the accuracy of AI translations, especially in complex or nuanced conversations. As noted by Dumont-Perez (2024) in the study of the SAFE AI-Task Force, AI systems may misinterpret cultural references or emotional tones, leading to potential misunderstandings. However, AI systems can analyze large databases to identify language trends, common phrases, and areas where misunderstandings frequently occur. This information can be used to improve training programs for human interpreters and enhance the overall quality of interpreting services. Another major concern is the lack of visibility of interpreters' role in communication, as stated in Yin's study (2024) where the participants "commonly hold the belief that the employment of AI-translated live captions diminishes their visibility, primarily because a portion of the target language output is derived directly from AI-translated live captions, rather than their own contributions" (p. 1).

A relevant fact is the use of AI in language learning and training: AI-powered tools can positively assist in language learning and training either for future professional interpreters or language learners. These tools provide instant feedback, solutions and exercises that help learners to develop their language skills more effectively. Besides, it is a valuable support for human interpreters by providing instant assistance, which leads to higher-quality interpretations. The latter enhances the preparation skills and expertise of the interpreter. Moreover, one of the prominent questions prompted by AI is related to information privacy. Ethical considerations regarding data privacy and the potential for bias must be regulated strategically and thoughtfully, focusing on information management, including privacy, data protection and information security, and ethics. The regulatory and legislative landscape must change to incorporate new technological applications.

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

While AI continues to make strides across various domains, human capacity cannot replicate human capacity, as it lacks the ability to emulate empathy, intuition, common sense reasoning, creativity and originality and contextual understanding. These capacities highlight the intrinsic and inherent value of human intelligence.

References

[1] Ahmed, S. A. A. (2022). Technology and artificial intelligence in simultaneous interpreting: A multidisciplinary approach. *CDELT Occasional Papers in the Development of English Education, 78*(1), 325–353. https://doi.org/ 10.21608/ opde.2022.249945

[2] Cho, J. (2021). *Intercultural communication in interpreting: Power and choices*. Routledge. https://doi.org/10.4324/9781003179993

[3] Dumont-Perez, S. (2024, February 29). Groundbreaking study reveals combination of acceptance, skepticism about AI and interpretation. *Language Line Solutions* (blog). https://www.languageline.com/blog

[4] European Commission. (2021). *Coordinated plan on artificial intelligence 2021 review*. https://digital-strategy.ec.europa.eu/en/library/coordinated-plan-artificial-intelligence-2021-review

[5] Fantinuoli, C. (2019). *Interpreting and technology*. Language Science Press. https://doi.org/10.5281/zenodo.1493289

[6] Fantinuoli, C. (2023). Towards AI-enhanced computer-assisted interpreting. In G. Corpas Pastor & B. Defrancq (Eds.), *Interpreting technologies – Current and future trends* (pp. 46–71). John Benjamins. https://doi.org/10.1075/ivitra.37.03fan

[7] *Hindsight: Reflections on responses to COVID-19 (Global Risks Report 2021, 16th ed.)*. https://www3. weforum.org/docs/WEF_The_Global_ Risks_ Report_2021.pdf

[8] Horváth, I. (2022). AI in interpreting: Ethical considerations. *Across Languages and Cultures, 23*(1), 1–13.

[9] International Organization for Standardization. (2022). *Information technology – Artificial intelligence – Artificial intelligence concepts and terminology* (ISO/IEC Standard No. 22989). https://www.iso.org/standard/74296.html

[10] International Organization for Standardization. (2023). *Translation, interpreting and related technology – Vocabulary* (ISO Standard No. 20539). https:// www.iso.org/standard/81379.html

[11] Jorati, J. (2014). Gottfried Leibniz: Philosophy of mind. *Internet Encyclopedia of Philosophy*. https://iep.utm.edu/leib-ove/

[12] Kohn, M. (2020). *Four words for friend: The rewards of using more than one language in a divided world*. Yale University Press. https://doi.org/ 10.1080/01434632.2022.2098918

[13] Li, J. (2022). Recent advances in end-to-end automatic speech recognition. *APSIPA Transactions on Signal and Information Processing, 11*(1). https://doi.org/ 10.1561/116.00000050

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

[14] McKendrick, J. (2024). Lost in translation: AI chatbots still too English-language centric, Stanford study finds. *ZDNET*. https://www.zdnet.com/article/business-leaders-are-losing-faith-in-it-according-to-this-ibm-study-heres-why/

[15] Michael, J. R., Held, W. B., & Yang, D. (2024, August). Unintended impacts of LLM alignment on global representation. Paper presented at the *62nd Annual Meeting of the Association for Computational Linguistics*, Bangkok, Thailand. https://doi.org/10.48550/arXiv.2402.15018

[16] Munteanu, O. (2024). Innovating multilingual interaction: AI's influence on the translation and interpreting industry. *PoliLingua*. https://www.polilingua.com/blog/post/artificial-intelligence-translation.htm

[17] Oxford English Dictionary. (n.d.). Scalability. *Oxford English Dictionary Online*. https://www.oed.com/search/dictionary/?scope=Entries&q=scalability

[18] Pöchhacker, F. (2022). *Introducing interpreting studies* (2nd ed.). Routledge. https://doi.org/10.4324/9781003186472

[19] Pöchhacker, F., & Liu, M. (2024). Interpreting technologized: Distance and assistance. *Interpreting*, *26*(2), 157–177. https://doi.org/10.1075/intp.00112.poc

[20] Roy, D. (2021). MIT launches Center for Constructive Communication. *MIT Media Lab*, via *MIT News*. https://www.media.mit.edu/articles/mit-launches-center-for-constructive-communication/

[21] Sheikh, H., Prins, C., & Schrijvers, E. (2023). Artificial intelligence: Definition and background. In *Mission AI. Research for Policy*. Springer. https://doi.org/10.1007/978-3-031-21448-6_2

[22] Turing, A. M. (2009). Computing machinery and intelligence. In R. Epstein, G. Roberts, & G. Beber (Eds.), *Parsing the Turing test* (pp. 23–65). Springer.World Economic Forum.

[23] World Economic Forum. (2023). *Jobs of tomorrow: Large language models and jobs*. https://www3.weforum.org/docs/ WEF_Jobs_of_Tomorrow_ Generative _AI_ 2023.pdf

[24] Yin, T. (2024). Has the use of AI-translated live captions in simultaneous interpreting changed the role of the interpreter? A study based on professional interpreters' perceptions. *The Translator*, 1–18. https://doi.org/ 10.1080/ 13556509.2024.2412923

[25] Ziegler, K., & Gigliobianco, S. (2018). Present? Remote? Remotely present! New technological approaches to remote simultaneous conference interpreting. In C. Fantinuoli (Ed.), *Interpreting and technology* (pp. 119–139). Language Science Press. https://doi.org/10.5281/zenodo.1493299

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155

Acknowledgements
I would like to express my sincere gratitude to everyone who contributed to the creation and publication of this article. Your interesting insights, support, and collaboration were essential for the compilation of data. A special thank you goes to the survey respondents for their time and thoughtful input, and to my fellow interpreter colleagues for their openness and the engaging discussions we shared. Your contributions were invaluable to the conclusions of this work.

Author Biodata
Cristina Cela Gutiérrez is an Associate Professor of Translation and Interpreting at the University of Las Palmas de Gran Canaria, Spain. In 2008, she became the official translator and interpreter of the Spanish Home Affairs Ministry in the language combination English, German and Spanish. She has been working as a Community Interpreter in collaboration with the Spanish police authorities for 15 years. Her recent publications include two teacher manuals for German-Spanish Translation and Consecutive Interpreting for the University of La Rioja, Spain. Her current research interests focus on non-verbal language; AI applied to Translation and Interpreting and Community Interpreting.

Declaration of conflicting interest
The author declared no conflicts of interest with respect to the research, authorship, and/or publication of the article.

This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Available online online at https://www.asjp.cerist.dz/en/Articles/155