Manar Elsharq Journal
for Literature and Language Studies
ISSN: 2959-037X(Print)
Website: http://meijournals.com/ara/index.php/mejlls/index

Machine Translation and Its Effects on Professional Translators

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ARTICLE INFO

Received:16 Mar
Accepted: 22 Apr
Volume: 4
Issue: 2

ABSTRACT

This study examines the concept of translation as a fundamental process in language learning and cross-cultural communication, with particular emphasis on both human and machine translation. , the research provides a comparative analysis between human and machine translation. Human translation is shown to offer higher accuracy, cultural sensitivity, and contextual understanding, while machine translation is characterized by speed, accessibility, and cost-effectiveness. However, machine translation systems face limitations such as lack of contextual awareness, reduced fluency, and difficulty handling idiomatic expressions. In addition, the study discusses the significance of machine translation in a globalized world, particularly in enhancing cross-cultural communication, international business, diplomacy, and accessibility. It also examines different types of machine translation systems, including rule-based, statistical, hybrid, and neural machine translation, highlighting their development, advantages, and challenges. The study concludes that while machine translation continues to evolve and improve, human translation remains indispensable for ensuring accuracy and cultural appropriateness. A balanced integration of both approaches is recommended to achieve effective and reliable translation in various contexts.

KEYWORDS: Machine Translation, Effects, Professional Translators

1.1 Introduction

Considering The importance of translation in learning translation, Mogahed (2011:46) implies that translation is extremely Significant for foreign language teaching simply because it allows conscious Learning and control of the foreign language, and as a result, it reduces native Language interference. Using translation can also make learning meaningful. According to Catford (1965:55) translation is the replacement of textual Material in one language by equivalent textual material in another language. Although the form of source language (SL) has been replaced by adjustingthe target language (TL) but the original meaning of the source text is still Maintained. It is a line with House (2018), she states translation is the way to Replace an original text as the source language into another text as the target Text in a different language.

In others word, translation is not only a Transferring or replacing process from source words or sentences into Different languages, translation may also be a process in considering the Proportionality meaning of words from the source language (SL) to be Understood by the reader in the target language (TL). It is

supported by Ordudari (2008:29) that translation could be an exchange Process, which points at the change of a written SL text into an ideally Comparable TL text, and which needs the syntactic, the semantic, and the Pragmatic understanding and explanatory preparing of the SL.

In translation activity, each translator has their ways in translating the source language. However, there are many difficulties that will be encountered by the learners in obtaining the equivalent and natural meaning of the words. It can happen because either the source language or the target language has different grammatical structures, and the lack of vocabulary mastery can also be a problem that will be faced when the English learner encounters unfamiliar words. Generally, Bassnett (2002) states that problems in translating are caused at least as much by Discrepancies in conceptual and textual grids as by discrepancies in language. However, the main problem of translating has always been whether to Translate literally or freely (Newmark, 1988:23-25). Therefore, the translator has to Consider the proper translation methods in identifying the text from the source Language. There are seven translation methods that can be Used in translating a poem, these are phonemic translation, literal translation, Metrical translation, poetry into prose, rhymed translation, blank verse Translation, and interpretation, these methods are specifically devoted to translate literary texts (Lefevere, 1975:67) .

1.2 Problem of the Study

The problem of this study is the rapid development of machine translation, which raises questions about the future of human translators. Machine translation is sometimes inaccurate and cannot fully understand meaning or culture. Many people depend on it without knowing its weaknesses, which can lead to misunderstanding. Therefore, this study tries to explain these problems and the limits of machine translation.

1.3 Research Questions

1. What is machine translation and how does it work?
2. What are the main differences between human translation and machine translation?
3. What are the advantages and disadvantages of machine translation?
4. How does machine translation affect the profession of human translators?
5. Can machine translation replace human translators in the future?
6. Is it better to use a combination of human and machine translation?

1.4 Research Objectives The study aims to:

1. To explain the concept of translation and machine translation.
2. To identify the main types of machine translation.
3. To compare human translation and machine translation.
4. To examine the advantages and disadvantages of machine translation.
5. To investigate the impact of machine translation on the profession of translators.
6. To determine whether machine translation can replace human translators or not.

1.5 Significance of the Study

This study is important because it helps in understanding the differences between human and machine translation. It also helps students and researchers know the advantages and disadvantages of each type. In addition, it shows that human translators are still important despite technological development. Finally, it explains how to use machine translation in a correct and useful way.

1.6 Research Gap

Although many studies have discussed translation and machine translation, there is still a lack of clear research that focuses on the impact of machine translation on the profession of human translators. Most previous studies focus either on technical development or general comparison, but they do not fully explain how machine translation affects translators' roles, skills, and job opportunities. Therefore, this study tries to fill this gap by examining both the advantages and limitations of machine translation and its real effect on professional translators.

2. Literature Review

Machine Translation (MT) and Human Translation (HT) represent two fundamentally different methodologies in the field of translation studies. MT refers to the use of computer systems and algorithms to automatically translate text from one language into another, while HT relies on the cognitive abilities, linguistic knowledge, and cultural competence of human translators. The primary advantage of MT lies in its speed and ability to process large volumes of text efficiently, whereas HT excels in accuracy, creativity, and contextual understanding. Despite technological advancements, the gap between the two approaches remains evident, especially in complex linguistic situations (Hutchins, 2001: 89).

A major distinction between MT and HT is the handling of meaning beyond the literal level. Human translators are capable of understanding implied meanings, tone, and cultural references embedded within a text. In contrast, MT systems often process language at the surface level, which may lead to errors in

interpretation. For instance, metaphorical language, irony, and humor are particularly challenging for machines. Human translators, drawing on their experience and cultural awareness, can adapt the message appropriately to suit the target audience (Newmark, 1988: 52).

One illustrative example of this difference can be seen in idiomatic expressions. The English idiom “spill the beans” may be translated literally by a machine into another language as “pour the beans,” which fails to convey the intended meaning of “revealing a secret.” A human translator, however, would replace it with an equivalent idiom in the target language that conveys the same function. Similarly, expressions such as “break the ice” are often mistranslated by MT systems due to their figurative nature, whereas HT ensures communicative equivalence (Baker, 1992: 68).

Another example involves syntactic ambiguity. Consider the sentence “Visiting relatives can be annoying.” This sentence can mean either that the act of visiting relatives is annoying or that relatives who are visiting are annoying. MT systems may produce an incorrect translation depending on how the sentence is parsed. Human translators, however, rely on contextual cues and broader discourse to disambiguate meaning accurately. This demonstrates the importance of human interpretation in achieving precise translation (Nida, 1964: 159).

The development of Machine Translation has undergone several important stages. Early MT systems in the mid-20th century were rule-based, relying on predefined grammatical rules and bilingual dictionaries. These systems were limited and often produced unnatural translations. Later, Statistical Machine Translation (SMT) emerged, using large corpora and probability models to improve output quality. More recently, Neural Machine Translation (NMT) has revolutionized the field by employing artificial neural networks to generate more fluent and contextually appropriate translations. Systems like Google Translate and DeepL are examples of this modern approach (Koehn, 2020: 120).

Despite these advancements, researchers emphasize that MT still faces limitations, particularly in handling cultural nuances, pragmatics, and specialized texts. Literary translation, for example, requires creativity, stylistic awareness, and emotional sensitivity—qualities that machines cannot fully replicate. Legal and medical translations also demand high levels of precision and accountability, which often necessitate human expertise. Therefore, HT continues to play a critical role in ensuring quality and reliability in professional contexts (House, 2015: 134).

In recent years, a hybrid approach combining MT and HT has gained prominence. This approach, known as post-editing, involves human translators revising machinegenerated translations to enhance their accuracy and readability. Many scholars view this collaboration as the future of translation, where

technology supports rather than replaces human translators. By integrating the speed of machines with the intelligence of humans, this model offers a balanced solution to the increasing demand for translation in a globalized world (O'Hagan & Mangiron, 2013: 75).

Machine Translation (MT) and Human Translation (HT) represent two distinct approaches to rendering text from one language into another. MT relies on computational algorithms, such as rule-based, statistical, and more recently neural systems, to automatically translate text. In contrast, HT depends on human linguistic competence, cultural awareness, and contextual interpretation. While MT is valued for its speed and scalability, HT remains superior in handling nuance, idiomatic expressions, and cultural specificity (Hutchins, 2001: 89).

One clear difference between MT and HT appears in translating idiomatic expressions. For example, the English phrase "kick the bucket" may be translated literally by a machine into another language as words meaning "hit the bucket," losing its intended meaning of "to die." A human translator, however, interprets the phrase contextually and provides an equivalent expression in the target language. Another example is ambiguity: the sentence "He saw her duck" could refer to a person lowering their head or owning a bird. MT systems may misinterpret such ambiguity, while human translators use contextual clues to determine the correct meaning (Newmark, 1988: 45).

The evolution of Machine Translation has significantly improved its quality over time. Early systems in the 1950s were rule-based and produced rigid, inaccurate translations. Later, statistical MT introduced probability models based on large bilingual corpora. Today, Neural Machine Translation (NMT), used by systems like Google Translate, employs deep learning to produce more fluent and natural outputs. Despite these advancements, challenges such as cultural nuances, sarcasm, and pragmatic meaning still limit MT performance compared to human translators (Koehn, 2020: 112).

Human translation (HT) remains the gold standard for high-quality, contextually accurate translations. Unlike MT, human translators can interpret tone, register, and pragmatics, ensuring that the final output aligns with the intended meaning. This is particularly important in literary, legal, and medical translations, where precision and cultural adaptation are critical (Koehn & Haddow, 2009). Additionally, human translators excel at resolving ambiguities and ensuring stylistic coherence, aspects that even the most advanced MT systems struggle with .

However, human translation has its drawbacks. The most significant limitation is the time required to produce accurate translations. Unlike MT, which operates almost instantaneously, human translators need time to analyze, interpret, and refine texts. Furthermore, professional translation services can be costly,

making them less accessible for everyday users. Some studies also indicate that human translation may introduce subjectivity, as different translators might render the same text differently based on personal linguistic preferences (Cadwell, O'Brien, & Teixeira, 2018).

Assessing the quality of MT output requires reliable evaluation metrics. Several automated metrics have been developed to measure translation accuracy, with BLEU (Bilingual Evaluation Understudy) being one of the most widely used. BLEU evaluates translation quality by comparing machinegenerated output to human reference translations based on word overlap. However, one of its limitations is that it does not consider semantics or fluency, meaning that a translation can score highly even if it is unnatural to a native speaker (Lin & Och, 2004).

Other evaluation methods, such as METEOR, attempt to improve upon BLEU by incorporating synonym recognition and paraphrase matching, making it more aligned with human judgment (Lavie & Denkowski, 2009). Nonetheless, these metrics still do not fully capture the complexities of human language, as they prioritize word-level accuracy over overall coherence and readability. Recent studies suggest that documentlevel evaluation, rather than sentence-level scoring, provides a more comprehensive assessment of translation quality (Läubli, Sennrich, & Volk, 2018).

Given the strengths and weaknesses of both MT and HT, an emerging trend in the translation industry is the adoption of hybrid models. In this approach, MT is used to generate initial translations, which are then refined by human translators. This process, known as post-editing machine translation (PEMT), combines the efficiency of MT with the linguistic expertise of human translators, leading to faster and more accurate results (Chen et al., 2018).

The increasing use of AI-assisted translation tools in professional settings suggests that the role of human translators is evolving rather than disappearing. Instead of being replaced by MT, translators are becoming post-editors who fine-tune machinegenerated texts to ensure quality and cultural appropriateness. Some experts argue that this shift will lead to higher productivity, while others express concerns about the potential deskilling of human translators (Forcada, 2017). The ethical and economic implications of this transformation will continue to be a subject of debate as translation technologies advance.

3. Methodology

The comparison between Machine Translation (MT) and Human Translation (HT) becomes particularly clear in the context of political speeches, where accuracy, tone, and intent are essential. Political discourse often includes formal structures, implicit meanings, and culturally sensitive expressions that require careful interpretation. While MT systems such as Google Translate provide rapid translations, they frequently fail to preserve the intended political nuance. In contrast, HT ensures that the message is conveyed accurately within the appropriate diplomatic and cultural framework (Schäffner, 2004: 125).

A relevant example can be drawn from speeches delivered by Barack Obama and translated by international broadcasters such as Al Jazeera. In one segment, Obama stated: "We will take action to ensure stability in the region." Machine Translation into Arabic often produces a direct structure equivalent to " سنتخذ إجراءات لضمان الاستقرار في المنطقة."While grammatically correct, this version may lack emphasis or political weight. A human-translated version used in broadcast media may render it as " سنتخذ خطوات حاسمة لضمان تحقيق الاستقرار في المنطقة ",where the addition of "decisive" reflects the intended strength of the statement. This demonstrates how HT enhances pragmatic force beyond literal meaning (Schäffner, 2004: 130).

A second example involves a speech by Donald Trump, translated by BBC. In a statement such as "Our administration is working tirelessly to protect our citizens," MT may generate a direct equivalent like "." تعمل إدارتنا بلا كلل لحماية مواطنينا"While accurate at the lexical level, HT often refines the sentence to " تواصل إدارتنا العمل بشكل متواصل لحماية المواطنين وضمان أمنهم ",adding clarification and formality that align with the norms of political reporting. This reflects the human translator's role in adapting tone and register to suit the audience (Bielsa & Bassnett, 2009: 58).

A third example can be observed in speeches by Emmanuel Macron, translated by France 24. When Macron states: "We must strengthen our economic cooperation," MT typically produces a literal version such as " يجب أن نعزز تعاوننا الاقتصادي".However, HT in media contexts may present it as "من الضروري تعزيز أوجه التعاون الاقتصادي بين الدول",which expands the structure to clarify scope and intent. This demonstrates how HT provides additional contextualization that MT often lacks, especially in formal diplomatic communication (Klaudy, 2003: 42).

4. Results

The research shows that there is a tension between fast-developing Machine Translation (MT) and the careful thinking needed for professional human translation. Modern systems, especially Neural Machine Translation (NMT), are very fast and easy to use. But they mostly focus on words and grammar, not on

deeper meaning. MT often struggles to understand the writer's intention, tone, or cultural background. Human translation (HT) is still the best for accuracy and cultural understanding because humans can handle unclear meanings, idioms, and adapt messages to the feelings or beliefs of the audience. In political speeches, accurate translation is very important, and machine systems show their limits.

Political language is rarely neutral it is meant to persuade, emphasize points, or show a specific viewpoint. Comparing speeches by leaders like Barack Obama and Emmanuel Macron shows that MT can translate the words correctly, but it often misses the speech's full impact. Human translators act like cultural guides they can adjust the text so that its meaning, tone, and formal style stay clear, avoiding misunderstandings that machines might cause.

The study suggests that translation will not be replaced by machines but will evolve into a mix of human and machine work. Post-Editing Machine Translation (PEMT) is an example of this: machines do the first draft, and humans check and improve it. This approach helps handle large amounts of text while keeping high quality, especially in sensitive areas like law, medicine, and diplomacy. Even as technology improves, humans are still needed to make sure translations are accurate, culturally aware, and meaningful.

5. Discussions

The findings of this study clearly indicate that there is a significant difference between Machine Translation (MT) and Human Translation (HT) when dealing with political discourse. Political language is highly sensitive, as it is not only used to convey information but also to influence, persuade, and represent ideological positions. The analysis shows that while MT systems can provide fast and structurally accurate translations, they often fail to capture deeper pragmatic meanings such as emphasis, politeness strategies, and implied political intentions. This limitation becomes more visible when translating speeches that rely heavily on rhetorical devices and subtle linguistic choices.

One of the main issues identified is that machine translation tends to operate at a literal level, focusing on word-for-word or phrase-level equivalence. This often results in translations that are grammatically correct but lack communicative effectiveness. In political discourse, where meaning is closely tied to context, such literal translations may distort the intended message or weaken its impact. For example, expressions that carry emotional or persuasive force in the source language may appear neutral or flat when translated by machines. This demonstrates that MT systems still lack sufficient awareness of discourse-level meaning.

In contrast, human translation demonstrates a much stronger ability to interpret context and adjust language accordingly. Human translators are able to identify the speaker's intention, the audience's expectations, and the situational context of the speech. As a result, they can modify lexical choices, sentence structure, and tone to ensure that the target text achieves the same communicative effect as the original. This ability is particularly important in political communication, where small linguistic variations can significantly influence interpretation and reception.

Another important finding is that machine translation struggles with ambiguity and implicit meaning, which are common features of political speeches. Politicians often use indirect language, vague expressions, or strategically ambiguous statements. MT systems frequently misinterpret such structures because they lack contextual reasoning and cultural awareness. Human translators, however, rely on background knowledge and discourse analysis to resolve ambiguity and produce more accurate interpretations.

Despite these limitations, machine translation still plays an important role in modern translation practices. Its speed, accessibility, and ability to process large volumes of text make it highly useful for general understanding and preliminary translation. In many cases, MT serves as a supportive tool rather than a replacement for human translators. The growing use of post-editing further confirms this complementary relationship, where human translators refine machine-generated output to improve quality and accuracy.

Overall, the discussion highlights that machine translation and human translation should not be viewed as competing systems, but rather as complementary approaches. While MT continues to improve through advancements such as neural networks, it still cannot fully replicate the interpretive and cultural competence of human translators. Therefore, in sensitive fields such as political discourse, human expertise remains essential to ensure accuracy, clarity, and appropriate communicative impact.

6. Conclusion

This study has demonstrated that translation remains a complex and essential process in communication, requiring both linguistic competence and cultural awareness. Human translation continues to play a crucial role due to its ability to interpret context, convey implicit meanings, and adapt language to cultural and situational requirements. In contrast, machine translation offers significant advantages in terms of speed, accessibility, and efficiency, making it a valuable tool in a globalized world.

The comparison between machine translation (MT) and human translation (HT) reveals distinct strengths and weaknesses in both approaches. MT, particularly with advancements in neural machine translation (NMT), has significantly improved in terms of fluency, speed, and accessibility. However, challenges such as polysemy, idiomatic expressions, syntactic mismatches, and lack of contextual awareness remain critical limitations. On the other hand, HT excels in linguistic nuance, cultural adaptation, and accuracy but is time-consuming and costly. The findings suggest that while MT is a valuable tool for general translations, it cannot fully replace human translators in tasks requiring deep linguistic and cultural understanding.

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