# Post-Editing of Neural Machine Translation of the Novel "Murder of The Bookseller" from Arabic into English

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## ABSTRACT

*This paper aims to investigate the challenges that translators face while post-editing Machine Translation (MT) of idioms and expressions in literary works using Neural Machine Translation (NMT). Translating literary texts can be challenging for translators due to the cultural differences between the source text and the target text. However, the task becomes even more complex when translation technology, such as computer-assisted translation (CAT) tools, is utilised, which requires the translator to review and refine NMT-generated translations through post-editing (PE). The hypothesis of this study is that NMT technology lacks translation memory (TM) and a glossary of idioms and expressions, making it necessary for human translators to be involved to ensure precise meaning conveyance to the target reader. The data for this descriptive study were collected from the Iraqi novel "Murder of the Bookseller." The post-edited target text was evaluated using the Larson model, a comprehensive evaluation method that considers several aspects of translation quality. The findings of this study reveal that idioms and expressions present significant challenges during the post-editing process. Furthermore, the lack of appropriate TM and glossary in NMT technology makes it challenging for translators to ensure the accuracy and fluency of the translated text. Therefore, it is essential for human intervention to improve the quality of MT output, especially in the context of literary translations. Overall, this study sheds light on the importance of human intervention in post-editing MT for literary translations, highlighting the need for effective collaboration between human translators and NMT technology to produce high-quality translations.*

*Keywords: Computer-Assisted Translation, Literary Text, Machine Translation, Neural Machine Translation, Post Editing*

# INTRODUCTION

Fengling (2017) reports that, according to Nida, translation requires the reproduction of the closest natural equivalent of the source-language message in the receptor language, first and foremost regarding meaning, followed by an emphasis on style. On the other hand, Fengling adds that Newmark posits that translation entails attempting to render a written message or statement from the source language (SL) into an analogous message or statement in the target language (TL). Nida emphasises equivalence, information, meaning, and styles, while Newmark concentrates on meaning and text (p.33). This study considers equivalence and meaning to facilitate the production of a translated text that is more readable and natural for the target language (TL) receptor. Additionally, translation serves the purpose of bridging cultural gaps and surmounting any cultural divides that may exist by employing various translation strategies. Therefore, the translation is of utmost importance to language and culture as it propels the wheel forward for enhanced communication between the source language (SL) and the TL. The present study investigates the post-editing of the translation of specific gaps, such as idioms and expressions, that emerged in our case study of the Iraqi novel "Murder of the Bookseller," using translation technology.

Machine translation purports to perform all necessary tasks automatically, thereby obviating the need for human involvement. On the other hand, computer-assisted translation (CAT) facilitates the swift execution of translation projects by drawing on the memory and vocabulary previously utilised and retained from prior undertakings. The interference of a human translator is warranted, particularly in addressing such difficulties.

Neural machine translation (NMT) may assist in expediting the translation process, contingent upon the text's genre. However, the output will be literal and may compromise some of its intrinsic features, necessitating the employment of the Larson model to assess such results. In addition, this model allows the translator to post-edit (PE) the NMT-generated translation to harmonise it with the original text and tailor it appropriately for the target reader.

The main objective of this study is to emphasise the need for human translator involvement, specifically through post-editing (PE), in certain situations when translating any literary text using NMT, given that such texts frequently comprise a vast quantity of idioms and expressions. Despite the evolution of translation technology and the rapidity with which translation work may be accomplished through these applications, human translation is indispensable for successfully rendering such vocabularies. Furthermore, this study investigates the reality that NMT cannot invariably produce identical equivalents and meanings for these expressions and idioms, even if they are already present in the machine translation (MT) memory, since each idiom possesses its own meaning that varies based on the literary text context. In addition, this study concentrates on the quality of the outcomes and how well the translated work is comprehensible to the target reader, as assessed through the Larson model, which emphasises the naturalness and readability of the target text (TT).

## REVIEW OF THE LITERATURE

### MACHINE TRANSLATION

Zakraoui et al. (2021) define MT as "a computer application that translates texts or speech from one natural language (i.e., the source) to another (i.e., the target)". In other words, Machine Translation systems are programs that automatically render and translate electronic texts and speeches into other languages. Shakir and Al-Ali (2021) state that machine translation should be defined to have an overview of the potential causes for the emergence of post-editing and its impact on the translation process in general to have a better knowledge of post-editing. Pym

(cited in Shakir and Al-Ali, 2021) states, "technology is no longer just another add-on component. The active and intelligent use of TM/ MT should eventually bring significant changes to the nature and balance of all other components and thus to the professional profile of the person we are still calling a translator".

Abdelaal and Alazzawie (2020) report that Machine translation (MT) is one of the most promising translation technologies, enabling translators to translate the required massive numbers of words automatically. MT platforms can help to speed up and simplify the translation process. By translating a source sentence, MT creates a sentence with meaning in the target language. The translation process is difficult and complex because it deals with semantic, syntactic, morphological, and other grammatical complexities or even lexical in both languages. In fact, the problem is exacerbated in languages where the source and target languages have a wide range of linguistic differences. The Arabic language, for example, differs from the target language, such as English, on phonological, orthographic, morphological, syntactical, and lexical levels.

## NEURAL MACHINE TRANSLATION

According to Lihua (2022), Machine Translation is divided into two stages based on the time the artificial intelligence algorithm appears: traditional machine translation and neural machine translation NMT, also known as artificial intelligence machine translation. The striving for hegemony by the United States and the Soviet Union is the origin of machine translation. During the cold war, the United States had a high demand for translation in order to learn more about the Soviet Union. So, this type is the most advanced one of MT. It is still improving on a daily basis and is widely used by translators, Language for Special Purposes, LSPs, and ordinary people in their daily lives.

Cho et al. (2014a, cited in Stahlberg, 2020) suggested that the fixed-length source sentence encoding is to be blamed for this weakness. Sentences of various lengths convey various amounts of information. As a result, while adequate for short sentences, a fixed-length vector does not have sufficient capacity to encode a long sentence with complicated structure and meaning.

## POST-EDITING OF MT

Pym (cited in Shakir and Al-Ali, 2021) defines post-editing as "*the process of making corrections or amendments to automatically generated text, notably machine-translation output*". So, the purpose behind the post-editing process is to correct and improve errors and mistakes in the machine translation output quality depending on the context of the translated text. However, Stasimioti and Sosoni (2020) state that in terms of cognitive processes as well as practical goals and processes, post-editing (PE) has been found to differ from both human translation and revision of human translation. Furthermore, translators remain sceptical of PE and question its true benefits. Although the post-editing process of NMT has received little attention, it is reasonable to expect it to be a more promising approach than the post-editing of SMT. Furthermore, despite increasing demand in the translation market for post-editing services and post-editors, professional translators are hesitant to take post-editing jobs due to their negative perceptions of MT quality and post-editing work, whereas student translators appear to have a greater potential to fill this gap (Jia et al., 2019:60). In this perspective, Farrell (2019:50) states that to meet the growing demand for translation, post-editing of machine translation output (PEMT) is becoming a more common alternative working method. The convincing reason for this trend is the widely reported increase in productivity compared to human translation and comparable and sometimes higher quality levels.

According to Dede (2022), there are two types of post-editing: light post-editing and heavy/full post-editing. Light post-editing requires only minor changes to the target text, and its primary goal is usually "gisting", which means that the text will not be disseminated beyond a specific audience, so putting forth maximum effort is unnecessary. Light post-editing can be used on internal corporate documents that will only be read by a few people or when quality is not the primary concern of the translation project. On the other hand, heavy or full post-editing generally requires the highest level of effort to make the text more accurate and readable or similar to or equal to a human-quality translation. Full post-editing entails a more thorough examination of the raw output to identify all errors, whether semantic, linguistic, or grammatical. The editor then goes on to correct all identified flaws, resulting in a text that sounds like it was translated by a human.

## LARSON MODEL

Larson (1984, p.3) posits that translation is a process founded on the principle that the meaning of any source text may be extracted from its original form and reconstituted in a new form in the target language, which requires an examination of the source language text's lexicon, grammatical structure, communication setting, and cultural context, thereby facilitating the analysis of its meaning, and ultimately, the reconstruction of the same meaning through the lexicon and grammatical structure appropriate to the target language and cultural context.

**Figure 1**.

*Translation process according to Larson (Larson,1984)*
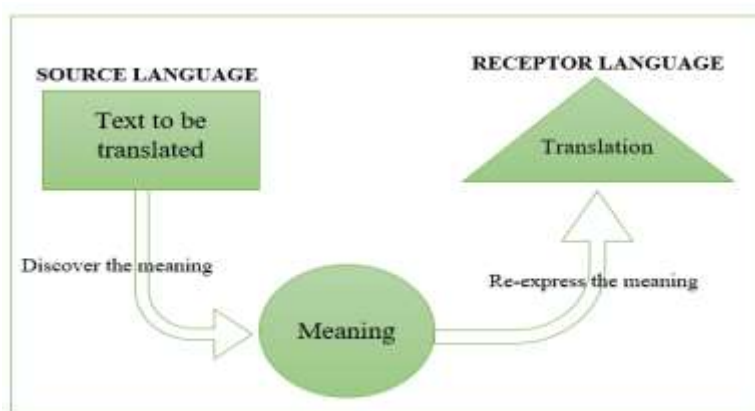


Furthermore, Larson (1984, p.530) states that when a translator undertakes an evaluation of their work, they must consider four aspects of testing: (a) the rationale for testing the translation, (b) who conducts the testing, (c) the manner in which the testing is carried out, and (d) how the outcomes are employed to refine the final manuscript.

Larson delineated three significant motives for appraising a translation. The first pertains to evaluating a translation's accuracy, followed by an assessment of its clarity, and lastly, an appraisal of its naturalness. These factors are essential to TQA and serve to ensure the attainment of a high-quality translation (Oktaviani, 2018, p. 40).

The present study focuses on the correlation between Larson's model regarding the outputs and how translated texts comprising idioms and expressions are understood by the target-language (TL) receptor, such that the text is perceived as if it were the original. In order to evaluate the output of NMT, Larson (1984) asserts that the primary objective of translators,

consultants, testers, and reviewers is to strive for one key objective: to ensure that the translated text is as clear, accurate, and natural as possible. To this end, Larson suggests several methods for testing the translation, which include the following:

a) A comparison with the source text (ST) to verify the equivalence of information content, ensuring that all information is incorporated in the translated text and nothing is omitted,

b) Back-translation into the source language (SL) performed by an individual who is bilingual in the SL and the target language, without access to the ST, in order to verify what is being conveyed to that person,

c) A comprehension check, which is the most important test to verify whether the translation is understood by an individual who has not previously seen the translation,

d) A naturalness test should be undertaken by a viewer to ascertain if the form of the translation is natural and the style is appropriate, and a readability test should be conducted by asking someone to read the translated text aloud as a complete unit in order to determine where the reader hesitates, stops, or re-reads a sentence, and

e) A consistency check necessitates proofreading the entire translated text to ensure the accuracy of the names of persons and places, which require a high degree of attention and consistency throughout the translation process.

# DISCUSSION

Two types of errors can occur in MT: ambiguity issues and problems arising from structural and lexical disparities between languages (source and target) and multiword units such as idioms, expressions, and collocations. Lexical ambiguity arises when a single word has multiple meanings, making it challenging for the machine translator to determine the correct choice based on the context. Structural ambiguity occurs when a phrase or sentence can have more than one possible structure. However, these issues no longer pose significant challenges to Google Translate (GT) due to its adoption of the neural system or NMT, which eliminates or reduces many of these issues. Ambiguity can arise when a single word can be used as a noun or a verb in different contexts (Abdelaal & Alazzawie, 2020).

Banikalef and Naser (2019) point out that while the majority of culturally bound expressions, idioms, and expressions should be functionally translated, some translators resort to semantic (literal) translation. This could be due to the translator's lack of knowledge in both languages and the importance of functional equivalence in particular. As a result, the translator may distort the message rather than convey the intended meaning of the message accurately. Cultural differences between the two languages can make it extremely difficult, if not impossible, to achieve a successful transfer.

## SYNTACTIC PROBLEMS

Syntactic issues can arise in the translation process due to differences in the syntax or structure of the two languages, Arabic and English, which belong to two different and distant language families (Akan et al., 2019). Therefore, translators must be particularly attentive to the syntactic differences between Arabic and English during the translation process, with post-editing being the most important step since it pertains to the translation product of NMT. The translator must be aware of sentence-level mismatches that involve variations in word order. Shunnaq (1989, cited in Al Shehab, 2013) reports that translators may face difficulties when translating from Arabic to English because the two languages have different sentence structures. So, the translator may change the structure in the translation process, e.g., Arabic sentence structure is a verbal one with the order of *verb+subject+object+adverbal (V+S+O+A),* whereas the

English sentence structure starts with *subject+verb+Object (S+V+O).* For example The English sentence "The student wrote the assignment" *attalib (The student) keteba (wrote) alwajiba(the assignment)* الطالب كتب الواجب in this sentence, the Arabic word order is incorrect, the correct translation must be (كتب الطالب الواجب) according to the sentence structure. Gender-related issues can also create difficulties in translation. In some languages, including Arabic, gender plays a significant role in grammar, which can affect the translation process.

This study encountered several syntactic problems during the post-editing of translations for certain Arabic idioms and expressions. Some of these problems were related to the addition of a complete sentence or phrase that was not present in the original text, as well as the omission of certain words necessary to convey the intended meaning accurately in the target language. These issues highlight the importance of the human translator's role in post-editing, as they are better equipped to understand the nuances of the source text and can make informed decisions about how to convey these nuances in the target language best.

In example 2 in this study: The Arabic expression أهلا بأخ العرب "Ahlan bi Akh Alarab", translated into "welcome my brother". The word أخ العرب has been deleted, and a Phrase *my brother* has been added to create more comprehension in the sentence of the TT. In example 1, the entire sentence was deleted كأن على رؤوسهم الطير in the MT product, and a completely new sentence was added in the PE process "listening motionless with awe" to keep the sense of the ST in the TT.

## LEXICAL PROBLEMS

Dweik and Othman (2017) state that lexical problems in translation can arise primarily due to the literal translation of lexical items or vocabulary. Furthermore, Scholars in this area of study have focused on how translators deal with words and the choices they make in translating them. Dweik and Othman add that many translators make incorrect choices in selecting the appropriate equivalent in the target language, often because they do not consider that a word may have multiple meanings or nuances. Instead, they rely on their limited previous knowledge of the target language or choose one of the first meanings listed in the dictionary.

In example 3: The Arabic expression على كف عفريت "Kaf Afreet" contains two lexical items that may cause confusion in translation. Both the translator could find their meaning in the Arabic-English dictionaries (https://www.almaany.com/ar/dict/ar-en/remarks/) as Plam stands for *Kaf* and Satan, Devil, Demon, and Afreet as well stand for *Afreet* which means the Grand Satan. If the translator adopts the literal translation, he/she may choose the wrong or not suitable equivalence for these words that renders their exact meaning in the target language according to the context of the source language. So, the translator must consider the context, especially in translation any literary work, only the meaning of the word. In this example, and based on the context على كف عفريت means *risking*. So, PE is necessary to present to the target reader the explanation to be relevant and familiar with the context, meaning: *I'm risking.*

## PROCEDURE AND DATA ANALYSIS

In this section, the adopted model is described in detail. The data collection process is also explained, including the methods used to gather the data. The steps taken to analyse the data are also discussed to evaluate the reliability and validity of the results.

## MODEL ADOPTED

Larson's model is widely used for testing the quality of translated idioms and expressions in a second language, ensuring they suit the target audience. The focus is on refining the translated

text for better naturalness and readability. The main goal of any translator, including those using Neural Machine Translation (NMT), is to create a coherent text that effectively conveys the intended message to readers. This requires careful consideration and handling of linguistic elements such as idioms, culturally specific items (CSIs), and vocabulary from the source text (ST) during translation. This paper employs Larson's model as a foundational framework to evaluate the NMT output of the novel "Murder of The Bookseller" from Arabic to English, as well as the subsequent human post-editing. The evaluation centres around three core principles: accuracy, clarity, and naturalness. Accuracy is assessed by comparing the translation to the original Arabic text examining semantic and grammatical consistency. Clarity is evaluated by checking for potential ambiguity and ensuring cultural references and idioms are comprehensible to English-speaking readers. Naturalness focuses on maintaining the source text's style, tone, and literary devices in the translated version, making it engaging and smooth for English readers.

## DATA COLLECTION

The Data for this paper have been collected from the Iraqi novel "Murder of the Bookseller". The original text of this novel was written in Arabic. It is a novel written by Saad Muhammad Rahim, an Iraqi writer that revolves around an experienced journalist named Majid Baghdadi. Fueled by his curiosity, Majid embarks on an investigative mission to the city of Baaquba, located 60 km north of Baghdad. His assignment comes from an individual with immense power and wealth, whose identity remains unknown to Majid. This mission spans a period of two months. Majid's task is to document the life of Mahmoud Al-Marzouq, a painter and bookseller who has encountered a life-altering accident. The journalist's agreement entails writing a book that unveils the secrets of Mahmoud's life. Throughout the novel, the author incorporates authentic Iraqi words, vocabulary, expressions, and idioms, many of which are commonly used in the colloquial dialect of Iraqis in their daily interactions.

The study primarily focused on identifying the most significant difficulties and problems encountered during the machine translation process, particularly those related to expressions and idioms, terminology, and colloquial vocabulary, including slang. In this regard, careful selection of texts, sentences, and words was conducted throughout the translation process to ensure that the translation effectively conveyed the intended message while maintaining the original nuances and tone of the literary work.

## DATA ANALYSIS

The following section presents the results of my data analysis.

### EXPRESSIONS

Upon reviewing and re-translating the novel, it was discovered that author frequently incorporated well-known quotes and idioms to reinforce key concepts and captivate the reader's interest. However, this practice may pose challenges when translating the text, whether from Arabic to English or any other language and vice versa. Consequently, a comparative analysis between Machine Translation (MT) and Post-Edited (PE) translations was conducted to identify problems associated with expressions and to ascertain how each translation approach could effectively convey the intended meaning to the target reader. In this regard, the study focused on examining post-edited translations to assess the effectiveness of different strategies for conveying meaning in the target language.

**Table 1**.

*Example of equivalence by omitting and adding (Syntactic problem)*

| Source Text |
|---|
| وأخيراً اختار باريس كمدينة أثمة، فتحدث عن اللوفر، والمعارض والمسارح والسينمات والكوليج دي فرانس والشانزليزيه والبانتيون والمقاهي والمباغي.. كان يلعلع والقوم كأن على رؤوسهم الطير كما يقول المثل.. نسيت معظم ما قال. لكني أحفظ جملاً من كلامه عن المبغى. |

| Machine Translation Product |
|---|
| Finally, he chose Paris as a sinful city, so he talked about the Louvre, galleries, theatres, cinemas, the College de France, the Champs-Elysées, the Pantheon, the cafes, and the Almabaghi. I forgot most of what he said. But I remember sentences from his words about the brothel. |

| Post Editing of MT |
|---|
| Finally, he chose Paris as a sinful city, so he talked about the Louvre, galleries, theaters, cinemas, the Collège de France, the Champs-Elysées, the Pantheon, cafés, and brothels. He was speaking loudly and the people were listening motionlessly. |

The NMT didn't translate this idiom يلعلع and والقوم كأن على رؤوسهم الطير so the Post Edit PE is compulsory here to add listening motionlessly to give an equivalence to the omitted one in the ST to render the exact meaning and the sense of the ST to the TT reader. As for المباغيthe NMT seems that has not equivalent word and tries to render it literally due to that the NMT depends on the Translation Memory TM that the translator creates during the translation and the NMT will call it back when necessary along with the translated text.

**Table 2**.

*Example of modulation to the expression (Syntactic problem)*

| Source Text |
|---|
| لم أضطر لطرق الباب.. كان نصف موارب.. صحت «أستاذ محمود»، صاح من الداخل؛ "قره داغي.. هيمون، أهلا بأخ العرب." هكذا تعود أن يخاطبني مازحاً كلما رأني، أنا الذي من أرومة كردية.. |

| Machine Translation Product |
|---|
| I didn't have to knock on the door.. He was half ajar.. I shouted, "Mr. Mahmoud," he shouted from inside; "Qara Daghi... Heymoon, welcome to the Arab brother." This is how he used to address me jokingly whenever he saw me, who was of Kurdish origin. |

| Post Editing of MT |
|---|
| I didn't have to knock on the door, it was half open. I shouted: "Professor Mahmoud," he shouted back from the inside; "Qara Daghi, welcome my brother" This is how he used to call me jokingly whenever he saw me since I'm of a Kurdish descent. |

In this example, if أخ العرب was translated to *The brother of Arab*, as the MT produced it in the translation, it will give an incomprehensible meaning to the recipient. So, the modulation was necessary here in the PE. Also, for كان نصف موارب it was noticed that the MT didn't render the exact pronoun referring to the door and replaced it with the pronoun "He" which refers to the sane person. Here in such cases the MT used in translation text from (Ar<->En) will case a serious problem in the translated text and eventually to the target reader. So, Post-Edit and the interfere of the human translator is highly recommended to render the exact meaning.

**Table 3**.

*Example of explanation to be more familiar to the context (lexical Problem)*

| Source Text |
|---|
| انا أضع مستقبلي المهني وربما حياتي على كف عفريت بحديثي عن القضية معك.. أرجو أن نكون حذرين.. |

| Machine Translation Product |
| --- |
| I put my professional future and maybe my life on the palm of a demon by talking about the case with you.. I hope we are careful.. |
| Post Editing of MT |
| I'm risking my career and maybe my life by talking to you about this case. So, please, let's be all be careful. |

In this text, the problem is in translating على كف عفريت. In spite of that عفريت is a lexical item and there is meaning for this word in dictionaries as "afreet, evil and demon"  and all stand for the dangerous. But on the sentence level, it was translated as *on the palm of demon* yet, and in this context, particularly means *risking*. So, PE is necessary to present to the target reader the explanation to be relevant and familiar with context meaning: *I'm risking.* As for the Arabic names also the human translator interfere is required to make them united along the project.

<div align="center">IDIOMS</div>

An idiom refers to an expression or phrase whose figurative meaning is distinct from the literal meaning of its individual words. According to Newmark (1988, cited in Akbari, 2013) who reports that "in translating idiomatic into idiomatic language, it is particularly difficult to match equivalence of meaning with the equivalence of frequency." He believes that the main problems, a translator faces, are not grammatical but lexical, i.e. words, collocations, and fixed phrases or idioms. Whereas Baker (1992, cited in Akbari, 2013) believes that "the main problems that idiomatic and fixed expressions pose in translation relate to two main areas: the ability to recognise and translate an idiom correctly and the difficulties in rendering various aspects of meaning that an idiom or a fixed expression conveys into the target language".

**Table 4**.

*Example of addition to be more readable (Syntactic problem)*

| Source Text |
| --- |
| أحتاج إلى النقود، أفكر بالزواج.. أنا الآن في الثانية والأربعين ولا أريد أن يفوتني القطار .. وهناك امرأة تنتظر .. |
| Machine Translation Product |
| I need money, I'm thinking of getting married.. I'm 42 now and I don't want *to miss the train*.. and there's a woman waiting. |
| Post Editing of MT |
| I need money, I'm thinking of marriage. I'm forty-two now and I don't want to miss the train of marriage (*getting old and not getting married*). There is a woman waiting for me. |

This particular idiom can be translated literally because it conveys the same meaning in the English language as in the source language (SL). In the post-edited (PE) translation, the word "marriage" was added to the idiom to enhance its readability and comprehensibility for the target reader. Furthermore, additional explanations were included in parentheses to support the intended meaning of the idiom further.

**Table 5**.

*Example of similar meaning stored in TM (Syntactic problem)*

| Source Text |
| --- |
| عملية القتل كانت احترافية.. ولابد من أن يكون القاتل ذا باع طويل وخبرة في عمليات الاغتيال ليقتل في ذروة الزحام. |
| Machine Translation Product |
| The killing was professional. The killer must have a long history and experience in assassination operations to kill in the midst of crowds. |
| Post Editing of MT |
| The killer must have a long history and experience in assassination operations to commit the killing crime in the midst of crowds. |

The idiom باع طويل was translated into long history which exactly render the cultural meaning. Meaning that this idiom has been already listed in the Translation Memory TM for the NMT and it been recalled during the process of translation of this product and once the segment that contains this idiom uploaded to the NMT. This is one of the most important merits of NMT to have TM and that in return will speed up translation process and save the time.

**Table 6**.

*Example of similar meaning but dissimilar form (Syntactic problem)*

| Source Text |
| --- |
| هز رأسه وقال: كاكه محمود تفاءلوا بالخير تجدوه.. لا نريد سوى أن نعيش بضع سنوات مثل البشر. |
| **Machine Translation Product** |
| He shook his head and said, "Kah Mahmoud, be optimistic that you will find him." We only want to live a few years like humans. |
| **Post Editing of MT** |
| He shook his head and said: Kaka Mahmoud, optimistic goodness shall find. We only want to live a few years like humans. |

The idiom تفاءلوا بالخير تجدوه has been translated literally word-by-word in the NMT translation process. In English language has a list of idioms that have equivalent in the Arabic language, so in the PE, the idiom has been translated in the TL by using an idiom of similar meaning but in Dissimilar form.


CONCLUSION


This case study has identified numerous challenges associated with translating literary works from Arabic into English and vice versa, particularly in the context of Neural Machine Translation (NMT). Each literary work is characterised by unique cultural aspects that distinguish it from other works. Expressions and idioms are among the most crucial elements of a literary work, as they possess distinct cultural connotations contingent on the text's context. Accurately translating these elements is essential to effectively convey the intended meaning in the target language while ensuring readability and naturalness for the target reader.

It is widely recognised that Machine Translation (MT) is not capable of accurately rendering expressions and idioms due to its word-by-word translation approach. While this method may be suitable for technical and scientific translations that require transferring factual information from one language to another, it is not appropriate for literary works that often rely on idiomatic expressions and cultural nuances to convey meaning. Thus, the intervention of a human translator is necessary to conduct post-editing (PE) on the translated text. Furthermore, the translator must possess a comprehensive understanding of the source and target cultures and strong language skills to effectively convey the intended meaning and ensure readability and naturalness for the target reader. Post-editing and testing the translated text using Machine Translation (MT) is strongly recommended for any genre since it involves conveying the intended message and meaning from one language to another. Omitting or altering any vocabulary could affect the quality of the translated work. The findings of this study further underscore the importance of careful post-editing and thorough testing to ensure that the translated text accurately conveys the intended meaning and maintains the tone and style of the original work. The study also revealed that the length of the sentence could significantly impact the quality of the translation product, particularly in the context of the Arabic sentence structure. This is because Arabic sentences may occasionally lack periods, resulting in lengthy paragraphs that can prove challenging to translate accurately. Thus, it is crucial to consider

sentence structure and length when conducting the post-editing and testing process to ensure the translated text is clear and concise for the target reader.

In conclusion, this study highlights that human translators remain indispensable despite advancements in Machine Translation (MT). The intervention of human translators is particularly critical in resolving some of the challenges associated with translation, particularly in literary works that contain idiomatic expressions. While MT has undoubtedly facilitated the translation process and increased efficiency, it cannot fully replace human translators. Therefore, the human translator remains an essential factor in ensuring the accuracy and effectiveness of the translation process, particularly in literary translation.

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