



ABSTRACTS: VOLUME 6, SPECIAL ISSUE

ABSTRACT

Challenges of Machine Translation of English-Arabic Cultural Language Expressions: ChatGPT as a Case

Layan Abu Hatab, Mahmoud Ahmad Abdel-Fattah-Ismail

Birzeit University, Faculty of Arts, Department of Languages and Translation.

Background: Translation is a complex and essential process that goes beyond word-for-word conversion. It involves transferring meaning between cultures, encompassing social, religious, and linguistic nuances. Observations about misunderstandings arising from a failure to understand the intention of a speaker is particularly relevant to the context of translation. This highlights the need to examine the efficiency of machine translation in achieving functional equivalence when translating cultural language expressions, as this poses critical challenges.

In recent years, the widespread adoption of machine translation has been on the rise, as it offers a cost-effective and speed-productive means of conveying the core of a message. Despite its growing popularity, attaining optimal accuracy remains a persistent challenge, prompting the need for human intervention. Notably, tools such as Google Translate have proven invaluable; nevertheless, tackling the translation of idiomatic expressions, particularly in the context of English-Arabic pairs, poses substantial challenges. Sutrisno (2020) examines the challenges of Google Translate, stressing the importance of bilingual corpora for training and considering translation purpose and audience. So what about the translation of ChatGPT in this regard?

The significance of this topic lies in the growing demand for accurate and culturally sensitive translations in our interconnected world. Effective translation that captures the intended meaning, tone, and cultural nuances is crucial for successful cross-cultural



communication. By comparing the translation outputs of ChatGPT, an artificial intelligence system, with human translations of a set of proverbs and idioms, we can gain insights into the strengths and limitations of current machine translation systems in achieving functional equivalence.

In the domain of machine translation, numerous pioneering studies have delved into assessing the efficiency of various translation programs. Recent studies have shed light on ChatGPT as a new software. However, a dedicated examination of the effectiveness of ChatGPT in translating idiomatic expressions from English into Arabic and vice versa remains conspicuously absent. Given the groundbreaking nature of ChatGPT as the first of its kind, which has garnered significant attention globally, this research aims to address this gap by scrutinizing its efficiency in handling the intricacies of idiomatic expressions. In doing so, it contributes valuable insights to the evolving landscape of machine translation and offers a focused evaluation of the unique capabilities of ChatGPT, distinguishing it from other programs that have followed in its footsteps. This research delves into the existing challenges of machine translation with a specific focus on the case of ChatGPT, shedding light on its strengths and limitations, with strategies for enhancing its outputs.

Through a comprehensive analysis of the translation outputs, this study aims to illuminate the complexities of translating cultural language expressions and deepen our understanding of the role played by human translators and AI technology in overcoming these challenges. By exploring the deficiencies and challenges faced by machine translation, we can pave the way for more accurate and culturally nuanced translations. The integration of human expertise and machine translation holds the potential to revolutionize the field and shape the future of cross-cultural communication. This research contributes to the ongoing discourse on the capabilities and limitations of machine translation systems while examining the evolving role of human translators in a technology-driven landscape.

Objectives: To address the gaps identified in previous studies on English-Arabic machine translation (MT) and contribute to the understanding of the challenges facing



MT when translating cultural language expressions from English into Arabic and vice versa, this research focuses on exploring the following research questions:

1. To what extent machine translation (ChatGPT) could translate cultural language expressions effectively?
2. Can ChatGPT compete with human translators in terms of functional equivalence?
3. What are the solutions and strategies that can be applied to overcome the challenges facing machine translation (ChatGPT) when translating cultural language expressions?
4. How crucial is the understanding of cultural context in achieving functional equivalence in machine translation?

Methods: Initially, a diverse set of English and Arabic language expressions was carefully selected to align with the objective of this research, which is to determine the extent to which ChatGPT can translate these expressions from English into Arabic and vice versa in terms of functional equivalence (in percentage form). The first 37 expressions were selected from the Dictionary of Common English Proverbs by Mohammed Attia (2004), while the last three ones were chosen from daily life language. Then, some of these expressions were selected to compare their translations by ChatGPT with the human translations, along with a detailed analysis.

Results: After reviewing the results, which includes 40 expressions alongside their translations (human translation and ChatGPT automatic translation), it was found that approximately 88% of these expressions were translated literally by ChatGPT. However, it managed to translate only about 12% of them using functional equivalence. Thus, it is evident that the translation by ChatGPT is more literal, while the human translation captures the idiomatic meaning more effectively, expressing it creatively. In other words, the translations by ChatGPT of the aforementioned expressions is less efficient compared to human translations (mentioned in the dictionary) in terms of functional equivalence due to several deficiencies.



Conclusions: This research examined machine translation (MT) and its challenges in achieving functional equivalence when translating cultural language expressions. The importance of using functional equivalence in effective communication, cultural understanding, and preserving the essence of the source text was highlighted. The history of MT was explored, showcasing the development of rule-based, statistical, and neural approaches. Despite advancements, MT still faces limitations in handling idiomatic expressions, proverbs, figurative speech, and cultural differences. Proverbs and idioms pose a significant obstacle for MT due to their unique meanings and cultural context. The analysis of the translations by ChatGPT revealed its strengths in literal translation; however, it shows its shortcomings in achieving functional equivalence, contextual understanding, and capturing cultural nuances. In other words, deficiencies in capturing connotative meaning, writing style, grammatical structure, realizing cultural-historical differences, and achieving creativity were identified in the outcomes of ChatGPT. Thus, it is evident that human translators outperform MT software by achieving functional equivalence and capturing the intended meaning, tone, and style of the mentioned expressions. While MT continues to advance, human translators remain crucial for accurate and culturally sensitive translations, particularly in handling idiomatic expressions and cultural nuances. Nonetheless, the integration of AI technology and human expertise has the potential to revolutionize the translation industry and facilitate effective cross-cultural communication.

The researcher recommendations: that future research should be conducted to investigate the reasons behind the inconsistency of ChatGPT in its outputs and lack of stability on the same output when requesting to (regenerate response), as well as the impact of this on its accuracy in translation and its relationship with the “training data”. Furthermore, focusing on the efficiency of ChatGPT when translating colloquial dialects, especially from Arabic into English, is also recommended for study.

Keywords: MT, ChatGPT, functional equivalence, idioms, proverbs, cultural context, language barriers, creativity.