INTEGRATING AI-HUMAN DRIVEN METAPHOR TRANSLATION AS A METHODOLOGY IN THE CONTEXT OF CULTURAL RELEVANCE

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Abstract

*The emergence of Artificial Intelligence in modern the world has sparked debate on the role of humans, particularly in the field of translation. This study investigates the potential of AI versus humans, while translating metaphors. As metaphors are culture-- rich, they give better insight into the roles of both AI and humans in the race of technology. The Google Form database, contains 14 culturally rich metaphors selected from the Oxford Dictionary. Subsequently a rating scale was developed to set a standard for checking both AI and human creativity with the help of experts. Undergraduate students of English as a Foreign Language (EFL) were selected for this experiment. **ANOVA** was used to compare the quality of translation by setting standards, such as **Semantic analysis, Cultural sensitivity and Creativity**. Findings from the experiment on undergraduate students represent their excel in the cultural sensitivity domain as compared to AI. This paper investigates the strengths and weaknesses of both Humans and AI .After this attempt, both aspects can **Hybrid** act for the optimal path forward for a better future. Future research may explore innovative technology in AI that could more effectively collaborate with human creativity to solve upcoming real-life issues. Moreover, the emerging trend of intermingling AI in educational institution can have a significant impact on the performance of human beings.*

Keywords: Translation of metaphors, Semantic Analysis, Cultural sensitivity, Creativity, Hybridity of AI,

Introduction

In the domain of creativity, the symbolic relationship between artificial intelligence (AI) and human cognition represents a frontier of boundless potential. In the 1950's **Alan Turing** raises a question-**Can machines think?** Currently, this question is broadly answered regarding how machines think in the form of AI. In the current scenario, with the outburst of technology, machines not only think but also generate art, music, and literature, or even translate intricate literary texts. The emergence of Generative Artificial Intelligence (Gen. AI) constitutes a seminal development in this ongoing journey. Moreover the intertwining of different disciplines (such as natural language processing, corpus, linguistics, and machine translation) has led to the redefinition of technological tools and resources that have shaken the translation field.

Nevertheless, this technological adoption has not reached or affected all translation genres and text-types in the same way- because cultural codes play a mandatory role in delivering the real essence of translation. Despite the skepticism towards technological advances, in recent years, the interaction between machine translation (MT) and literary text has begun to attract the attention of numerous scholars, to name a few. The Battle of Bytes and Brains now a day is more concerning because of our dependence on artificial intelligence .However in the current study, we will have to look at both the human and AI.

AI-powered translation tools can process millions of tokens in seconds. However, human efficiency cannot be diminished. Human translation can reflect cultural sensitivity, semantic accuracy and creativity into their craft. As AI tools become more reliable and easily adaptable, they help overcome linguistic barriers especially for EFL (English as a Foreign Language) students.

According to **Mickens and Company**, they can generate $4.4 trillion annually. This statics also suggests that AI is not only beneficial in academics but also in revolutionary changes in the economy. Translation at its core, is merely more than just transferring words from one language into others.**Magaret A.Boden** (2010) suggested that computers and human creativity are not two different aspects. Rather AI can create more vacant spaces for emerging human ideas relate to creativity and help out in meaningful way. But it shows the cultural nuance, people interpretation how they look at things with different diamensions.But with the advancement of technology, it became a debate whether AI can match or even surpass the human's creativity capacities of human beings. This research paper aims to provide insights into both ways that have mandatory roles especially in academia.

By analyzing the translation through the lenses of semantic accuracy, creativity, and cultural appropriateness, this study highlights the strengths and weaknesses of both methods. An experimental design containing metaphors of diverse linguistic backgrounds, using ANOVA test with a robust framework for evaluating these dimensions, the findings of this research could inform the development of AI and human creativity that might be affected by the emergence of the latest technologies.

This study bridge the gap between the potential of AI and human capabilities in the context of translation as this is a culturally rich domain that provide insights into multiple dimensions of discussion. By checking these translations from various aspects such as semantic accuracy, cultural sensitivity, and creativity, this study highlights deep insights into the potential of both AI and human capabilities.

Literature Review

The Rapid advancement in the contemporary era has entirely revoloutionalized the global world especially in the area of translation .The human greater dependency on AI made the researcher think about why these things are necessary for efficient working, no matter which department it is, with the availability of AI tools, these advancements can change the global landscape of translation. As Pakistan is enriched with multiple languages, learners often faced difficulty translating one language into another. Thus, AI has undergone the greatest revolutionary change and, accommodates this problem with its multifaceted tools. Despite the effectiveness of AI in all fields there is still an ongoing debate regarding whether AI can surpass human abilities.

The trending shift of rule based system to Neural Machine translation (NMT) has changed the real essence of translation or human own interpretation that reflects their cultural relevenace.In the ongoing research metaphor used as test case. This is because they are culturally rich, have an etymological background and need a person's own interpretation to get the real gist of the idea behind them. Where there are a lot of researcher in the innovative abilities of AI and human potential. There is still a gap between comparative analyses that give insights into both the factors in the same context. In this paper, a Comprehensive analysis of metaphors from both AI and Humans is done that fills the gap between experimental evaluation and statistical analysis.

Eugine Nida's (1964) claims on the priority of dynamic equivalence from the perspective of communication as a bridging tool between two languages. She emphasizes the reader's response theory, which challenges fixed meanings and structures. Either translation serves as a bridge between two or more languages, or metaphors that vary from culture to culture in their interpretation serve as the best tool for this purpose. **Minh-Thang Luong (2015)** suggested the trends used in translation. During translation, the neural machine translator (NMT) uses two moods, a source of words and local words, by combining them so that a proper meaning is stablished.**Moneus and Sahari (2024)** examine the performance of AI and humans in legal translation. This study highlights the importance of humans despite

huge advancements in technology and the field of AI. **D. Kuznetsova(2024)** suggest the shocking aspect of AI creativity to find out "secret code of creativity "by converting operations of math into art.By using mixed-method approach to analyze the real essence of creativity retain in this piece of arts. It also raises a question on the dependence of AI on human pieces of work like (literature, art, and music).

Despite all these discussion, human beings and artificial intelligence (AI) work in a loop. In the absence of one element, it is difficult to work effectively in the creative domain. Culturally nuanced is a domain where human translation excels due to their life experience and a better understanding of the context in which a particular text is translated. **Jiménez-Crespo** states that human creativity touch is necessary for the exact meaning of something that is either a word or phrase. He also discussed the role of AI augmentation rather than replacing humans.

So, the paper explore the ways in which Large Language Models (LLM's) and Human "generate" piece to check their algorithms for translation. The phrase "Will humanity Get Lost in digital era"? This Raises many questions about the thinking and creative abilities of humans in the emerging digital era. **Fernando Cole Vaughn (2023)** states that although AI nowadays can be totally incorporated in our lives. The importance of human interpretation and creativity plays a key role in proper understanding. Translation studies have become an emerging discipline in the current world .Thus, by just getting a response from AI. We can never get the real essence of text, or somehow there is bias in AI--generated text. **Ying He (2021)** suggested that incorporation of AI into teaching methodologies can be helpful into enhancing creativity levels. In the beginning stages, AI models of translation studies can be teach so that students can compete with the rest of world. Moreover, **Keza MacDonald** explains the advancement in AI models by translating literary books to check the cultural nuance and exploring the element that, without some of the cultural aspect, proper interpretation can't be done. He further highlighted the role of humans in the accompanying meaningful results. **Liebling, D. J., Lahav, M., Evans, A., Donsbach, A., Holbrook, J., Smus, B., & Boran, L. (2020, April)** claim that the use of an AI translator is needed for migrants. A person with low proficiency in that particular language must rely on AI translators, but these translators do not properly translate and also cause language barriers. For this purpose, collaboration between Humans with AI can serve as a bridge to convey proper information, especially to immigrants. **Pym, A. (2011)** argues that technology first affect the core of the memory capacity of humans and then over takes manual translation. This discussion leads to the enhancement of human's cognitive abilities to compete with the modern world. **ZAID and Hanne Bennoudi (2023)** explain that although advancement in technology is unignorable, it also omits cultural sensitivity. Undoubtedly it is dangerous for human translators, but they cannot completely replace humans. **Rothwell, A. (2024)** says in his first volume of book that is Computer Assisted Literary Text (CALT) with the help of experts all over the world to combine the literary text with a computerized format .It also includes machine translation and fan translation, which are emerging forms of translation studies. This study is an attempt to enhance translation studies and make students aware of technologies to help them in their academics.

Moreover many other researches who want to explore the real collaboration between Humans with AI can work on producing creative literary texts .The case discussed by **Hadley, J. (2022).** He explains the core concept of translating one text into another language and including creativity in this worked joined the Human Translation Books volumes with AI--generated volumes. Their combination can make a better version of the book because it is rich in cultural sensitivity and semantic analysis from both the cognitive perspective of AI and Humans. **Way, you dale (2024)** suggest in his paper that this is the case of tourists in

respected country. They are non-native and face difficulty in communicating with other people. With the intervention of AI generated tools, they came to learn about the culture of that country. However it also helped broaden of their understanding of   culture when they translated some of the text into their native language. **Brusasco, P. (2022)** says that neural machine translation (NMT) can create huge differences in manual work of translation and AI--generated works. An American novel is translated into Italian to check pragmatics. The results showing tenses, pronunciation, and information flow are encouraging .However it lacks the cultural aspects of American language. This study demonstrates the cognitive inability of AI--generated tools that cannot replace human cognitive knowledge.

 Ruffo, P. (2022) purpose a qualitative study of approximately150 human translators and their dependency on AI. Their attitude towards translation tools, the tools they used, and the need for post-editing after collecting AI-- generated text, highlights that AI is not a hindrance in human cognitive abilities but is an asset in a meaningful way. Likewise, **Shin, M., & Gürses, S. (2019, August)** argues that induction MT (Machine Translation) can cause disability in students, especially in their creative work, relying too much on AI generated text that results in a lack of information about the author, the culture in which text is written. The case study used in this research is Robinson Cruise's work translated into Turkish-English .The results highlights that, after collecting evidence from four different AI source, human expertise is still needed to obtain the real essence. **Total, A., & Way, A. (2014)** suggest that machine translation in ancient times is not readily acceptable. However, with the passage of time in corpus as well as AI generated tools, it has become a significant part of academics; the researcher compare literary text with technical documents and then translates them from the AI tools. Technical texts are translated more comprehensively and provides an almost proper understanding. However, literary text needs to be re-evaluated by human's translators to check its validity and durability.

Finally, the discussion leads to the intervention of AI in human life and can create a massive change with its advantages and disadvantages. **Pym, A., & Torres-Simon, E. (2021)** suggested that automation can no longer be dangerous for human job opportunities, especially in translation studies, as it gives high wages to freelancers and content creators to use AI in their work and make creative work easier. However the overall effect of automation and induction of AI is uncertain from many other angles. In a nutshell, in the era of AI, if we want to completely ignore it, it is difficult for us to combat the rest of world. There is a need to create a bridge between AI and Human translators or make such a friendly environment where they work together for the betterment of human beings.

Research Objectives

- To assess the overall ability of AI translation in cultural context
- To explore the ability of humans creativity in translating metaphors

Research Question

1-To what extent AI interpretation is culturally relevant ?

2- Is AI translation sense closer to that of humans in same cultural context ?

3-Can AI generate creative adaptation from the perspective of cultural context?

Theoretical Framework

Cognitive Translation Theory emerged in 20th century drawing on cognitive science. Scholars such as **Daniel Gile** and **Christiane Nord** explore how translators process mentally. It focuses on how human creativity and flexibility play significant roles in translation.

Methodology

The Ongoing research has demonstrated the role of AI and Humans in the domain of translation of metaphors that provides culturally rich landscapes for creativity. Seventy

Undergraduate participants were involved in this research. Using quantitative method to collect data through a questionnaire, an ANOVA test was performed to highlight the difference between the human translation and AI translation.

Results

There are 3 elements Semantic Analysis, Creativity and Cultural sensitivity were used to explore the role of AI and humans in the translation of the metaphors. The following graphs are generated from the human responses that show deviations. Semantic Analysis (accuracy of translated metaphors in terms of meaning retention) of the metaphor used in the questionnaire. Creativity (how humans interpret metaphors and create meaning to their own understanding),and Cultural sensitivity (the real context in which certain things are translated according to the cultural perspective of that area) .The parameters used in these graphs are the **mean**(sum of all the values or the general level of performance) ,**median** (representing value in dataset),**mode**(most frequent value or the common performance level of candidates),**standard deviation**(reflects the deviation from standard value or performance of candidates that deviate from standard),**standard variance**(average square difference or higher values shows the inconsistency in performance of candidates) and **kurtosis** (shows how line deviate from the normal point).All the parameters used for both human translation and AI translation provides insights into the impact of digital revolution on human minds.

Semantic Analysis

Creativity
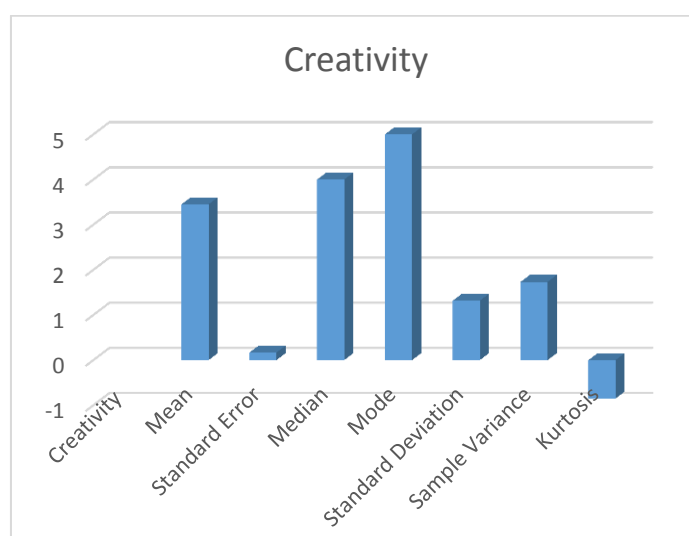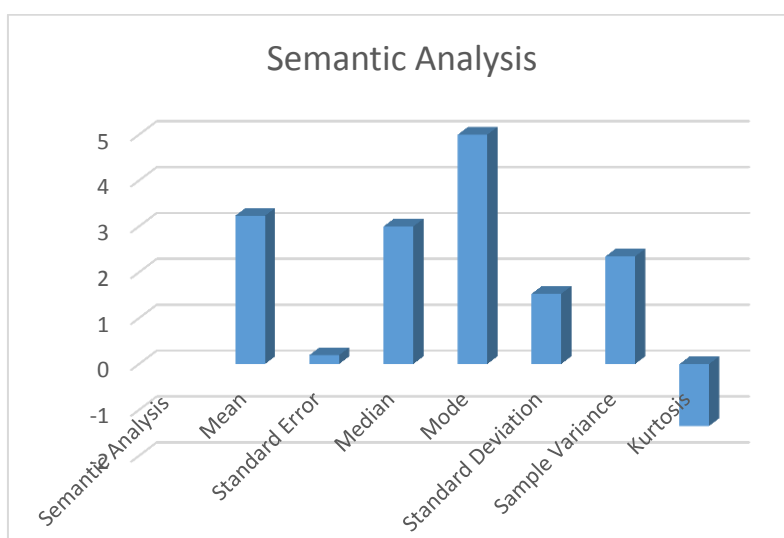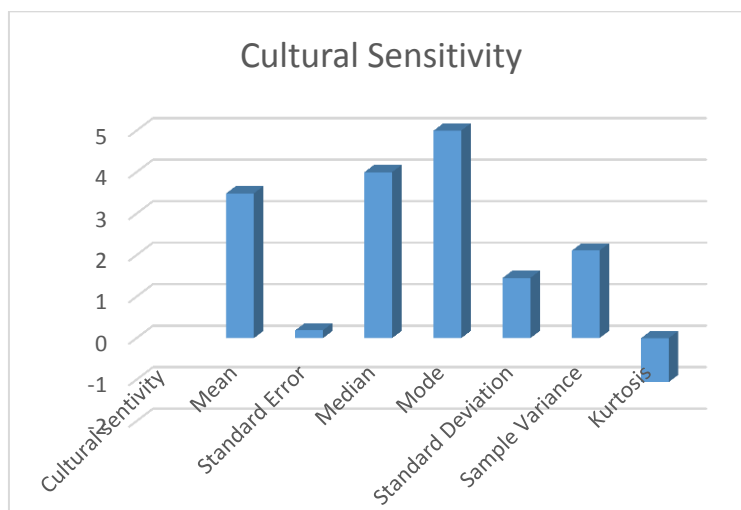
These graphs shows the different aspects of how translation done by human beings. Mean, Median and Mode of **Cultural sensitivity** shows the significance of culture in interpreting correct translation of the metaphors used in questionnaire. While the rest of elements shows Artificial Intelligence effect on human life.

Semantic **analysis** reflects lack of candidates performance or not enough able to grasp the real essence of metaphors. Is mean, median and mode somehow shows some creativity or the use of real context for translation but the rest of element are more deviating from the normal line.

The same is the case with the element of **creativity, which** shows acceptable results and has less deviation from the normal line. All three elements used for human responses provides information about the strengths and weaknesses of human beings in the field of translating or interpreting chosen metaphors. On the other hand, the results collected from AI translation (semantic analysis 4, creativity 5 and cultural sensitivity 3). After performing the ANOVA test, all these responses presents the main difference between humans and the AI-generated response. The matter of discussion is that cultural sensitivity plays a mandatory role especially in translation and it comes from experience while living in the society. In a nutshell, this study attempts to bridge the gap between humans and AI while considering their weaknesses and strength.

Discussion

In the modern world where artificial intelligence serves as a corner stone in the development of society, its impact on the overall performance of human beings is also observable. Individual uniqueness can never be undermined by the emergence of technology. However, it creates a shift from manual labor to machine work in all aspects of life. Undergoing research shows the undeniable characteristics of AI, which works even faster than humans. However, in the context of cultural sensitivity, this needs more improvement, as humans have experience in abundance. Things cannot be interpreted or translated in isolation without knowing their context.

Conclusion

The ongoing research paper is an attempt to create a comparative analysis between Artificial intelligence and human creativity. Overall, the results showed almost equal ratios but the element of cultural sensitivity was more dominant in the responses collected from humans .It also provides insight into how AI and humans go hand-in-hand, and how, they create tremendous results in the race of modern world. In addition, humans needs more improvement and modification in exposure to the world to meet emerging modern challenges.

Limitations

This study attempts in the current paper to highlight the role of both AI and humans in creativity or in the domain of translation. For this purpose, 14 metaphors were selected from the standardized book for translation, after which ANOVA test was performed to obtain the results. However, the main hurdle in this case was the handling of massive data .The conversion of qualitative data (human response) into quantitative data (e.g. mean-median-mode) is quite challenging.

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