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Research article

AI vs. Human: Translating Cultural Nuances in Naguib Mahfouz's *The Cairo Trilogy*

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Abstract

This study investigates the performance of the AI translation system ChatGPT in comparison with human translators in rendering culturally embedded expressions from Naguib Mahfouz's *The Cairo Trilogy* into English. Cultural expressions – particularly idioms, metaphors, and religious references – present major challenges to translators, who must interpret meaning not only at the linguistic level but also at the pragmatic, emotional, and socio-cultural levels. Adopting a qualitative content analysis approach, the study conducts a comparison of AI-generated and professionally published human translations. The evaluation employs Baker's equivalence-based framework, assessing semantic accuracy, pragmatic equivalence, cultural adequacy, naturalness, and functional alignment. Through this analytical lens, the study explores how effectively each translator – human or AI – handles the interpretive demands of culturally and pragmatically rich expressions. The findings reveal that while ChatGPT performs well in producing fluent, structurally coherent translations, it frequently struggles with figurative language and culturally specific nuances. These limitations stem from the absence of embodied cultural knowledge and self-evaluative judgement, which are essential for interpreting implicit meanings and cultural resonance. Human translators demonstrate stronger interpretive and cultural sensitivity, particularly in challenging areas such as metaphorical imagery and religious references. The study concludes that although AI systems increasingly contribute to efficient and accessible translation workflows, culturally intricate texts like the *Cairo Trilogy* still require human expertise. A hybrid human – AI translation model, therefore, emerges as the most effective approach for balancing efficiency with cultural and pragmatic depth.

Keywords: Translation strategies; AI; ChatGPT; Literary translation; Cultural nuances; Pragmatics

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Научная статья

Искусственный интеллект против человека: Перевод культурных нюансов в “Каирской трилогии” Нагиба Махфуза

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Аннотация

В данном исследовании изучается эффективность системы перевода на основе искусственного интеллекта ChatGPT в сравнении с переводчиками-людьми при переводе на английский язык выражений, имеющих культурную подоплёку, из “Каирской трилогии” Нагиба Махфуза. Культурные выражения – в частности, идиомы, метафоры и религиозные отсылки – представляют собой серьёзную проблему для переводчиков, которым необходимо интерпретировать смысл не только на лингвистическом уровне, но и на прагматическом, эмоциональном и социокультурном уровнях. С помощью качественного контент-анализа в исследовании проводится сравнение переводов, выполненных искусственным интеллектом, и профессионально опубликованных переводов, выполненных людьми. В оценке используется основанная на эквивалентности модель Бейкера, оценивающая семантическую точность, прагматическую эквивалентность, культурную адекватность, естественность и функциональное соответствие. Через эту аналитическую призму исследование изучает, насколько эффективно каждый переводчик – человек или ИИ – справляется с интерпретационными требованиями культурно и прагматически богатых выражений. Результаты показывают, что, хотя ChatGPT хорошо справляется с созданием беглых, структурно связанных переводов, но часто испытывает трудности с образным языком и культурно специфическими нюансами. Эти ограничения обусловлены отсутствием воплощенных культурных знаний и способности к самооценке, которые необходимы для интерпретации скрытых смыслов и культурного резонанса. Переводчики-люди демонстрируют более высокую интерпретационную и культурную чувствительность, особенно в сложных областях, таких как метафорические образы и религиозные отсылки. Исследование приходит к выводу, что, хотя системы ИИ все больше способствуют эффективным и доступным процессам перевода, культурно сложные тексты, такие как “Каирская трилогия”, по-прежнему требуют экспертных знаний человека. Таким образом, гибридная модель перевода, сочетающая человека и ИИ, представляется наиболее эффективным подходом для достижения баланса между эффективностью и культурной и прагматической глубиной.

Ключевые слова: Стратегии перевода; Искусственный интеллект; ChatGPT; Художественный перевод; Культурные нюансы; Прагматика

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INTRODUCTION

Language is a tool for communicating, understanding, building relationships, and creating a sense of belonging. It is accepted that all languages have culturally distinctive expressions, and they serve an important function. These expressions are actually difficult to translate since the translator needs to be sufficiently knowledgeable of both languages and cultures, as well as be able to recognize and handle unforeseen problems while translating and matching interlingual cultural pairs. Both English and Arabic have cultural and ideological components that influence how meaning is communicated. It's challenging to accurately convey the meaning of preset statements without considering translation concerns. The difficulty is that these manifestations were formed by religious or cultural ideas. These words are exclusive to a language and culture, making them incomprehensible to others. Language and culture are intrinsically intertwined. A high-quality translation from a linguistic and cultural standpoint involves incorporating figurative meanings to recreate the original beauty of cultural pieces (Al-Jabri et al., 2021).

Translating cultural elements between English and Arabic is complex. The task becomes even harder with literature because these works often use language strongly linked to their culture, which makes translation quite challenging. Books and poems frequently use expressions and references unique to their cultural and social contexts. Translators must skilfully manage these cultural aspects to preserve the original meaning and tone of the text. This requires a deep understanding of both the language and the cultural background, making the task both demanding and fascinating. For example, texts such as Naguib Mahfouz' Cairo Trilogy are rich in cultural references, idiomatic expressions and social contexts which are intricate within the Egyptian society and the Arabic culture. These cultural dimensions normally convey denotative or emotive meanings which lack corresponding equivalents in the target language. Translating such elements, therefore, exceeds the task of finding linguistic equivalents to understanding the deeper cultural meanings that influence language.

According to Mona Baker (2006), translation is not merely converting texts into other languages, it is also understanding the socio-cultural structure behind them. With respect to *The Cairo Trilogy*, the translator has to go beyond looking at the surface meaning of the word to its historical, political, and social aspects within which the characters interact. The task of preserving linguistic integrity and cultural contextualisation thus becomes a great challenge for the translator, especially when these cultural nuances are unfamiliar to the target readers. Although recent translation technologies such as AI systems are trained to deal with a wide variety of texts, they may demonstrate more satisfying results tackling a more straightforward translation project, than dealing with the complexities of cross-cultural nuances embedded in such literary texts (McCorduck, 2004). The process of translating cultural expressions in Mahfouz's trilogy underscores the complexities which require human understanding and cross cultural comprehension in the process of translation.

The purpose of this research paper is to examine the efficiency with which ChatGPT translates Arabic cultural expressions from Mahfouz's *Cairo Trilogy*. It aims to compare the translations produced by AI with those completed by human translators in order to



assess how both human and AI translators approach the task of translating these expressions into English. The study's outcomes will shed light on ChatGPT's advantages and disadvantages in capturing the linguistic features as well as the subtle cultural and emotional connotations conveyed in the selected expressions. Through this comparison, the study aims to assess how well AI translation systems can match the benchmarks set by qualified human translators and pinpoint the enhancements required to improve their cultural competency in translation. The findings of this research will contribute to the broader debate on machine translation's potential to assist, or possibly replace, human translators in certain situations. Additionally, it will provide important viewpoints on the role of AI in translating not just words, but the rich, culturally important expressions.

Objectives of the Study

This study attempts to evaluate how well AI systems such as ChatGPT translate Arabic cultural expressions from *The Cairo Trilogy* into English by examining how well these translations fit the pragmatic and cultural context of the original text. It assesses how well AI satisfies the standards set by human translators by contrasting its translations with those of human translators paying particular attention to how each handles idioms, social references, and culturally embedded language. Additionally, the study aims to indicate areas where AI could be further developed to improve its cultural competence in translation as well as the strengths and limitations of AI translation systems in maintaining the emotional and cultural nuances of Arabic expressions.

The study aims to answer the following question:

1. How accurately do AI systems like ChatGPT translate Arabic cultural expressions from *The Cairo Trilogy* compared to human translators?
2. How well do AI translation systems capture the cultural and emotional nuances of Arabic expressions from *The Cairo Trilogy*?
3. What are the strengths and limitations of AI in translating culturally rich Arabic expressions, and how can it be improved?

LITERATURE REVIEW

Culture and Translation: The Role of Skopos Theory

The concept of culture is crucial to translation studies because it has a basic impact on how language is used and understood in various communities. Culture is that complex whole that includes all of the skills, information, and beliefs that individuals develop while belonging to a society. As a result, culture includes a wide range of traits that together form the unique fabric of every civilization, including social heritage, beliefs, customs, values, traditions, and language.

As Peter Newmark (1988) observes, culture is profoundly ingrained in a group's lifestyle, which is articulated through the language they employ. According to Newmark (1988), foreign cultural expressions are classified into three types: ecological, material, and social. These categories include social organizations, politics, religion, art, gestures, and habits. Proverbs, collocations, phrasal verbs, and figures of speech (such as metaphors) are all examples of cultural expressions. Translating literature with cultural



characteristics is difficult since translators must comprehend both the original and target cultures.

Baker (1992) broadens the definition of culture, describing it as a multidimensional combination of elements – including history, religious beliefs, and social institutions – that impact individual relationships within a society. These cultural components provide significant obstacles in translating, especially when it comes to rendering expressions that are strongly embedded in a source culture. In her book, *In Other Words*, Baker (2011) suggests that SL expressions can convey concepts that are unfamiliar in TL society, whether abstract or tangible. It could be a religious belief, a social norm, or simply a sort of food. Baker identified common non-equivalents in translating from SL to TL, as both languages have unique cultural expressions. She arranged them in the following sequence. a) Culture-specific expressions, b) Unlexicalized SL expressions, c) Semantically complex SL expressions, d) Different meaning distinctions, e) Lack of top ranking, f) Lack of a specific expression, g) Physical differences, h) Dissimilarities in expressive meaning, i) Dissimilarities in form, j) Dissimilarities in frequency and tendency of using specific forms, k) The use of loan words in the SL.

Olive Classe (2000) makes the assumption that cultural differences between SL and TL could result in translation loss because certain contextual elements have characteristics unique to SL culture that are absent from TL culture. These characteristics are peculiar habits or lifestyles of specific individuals that are not mentioned in the target language. Skopos Theory, developed by Katharina Reiss and Hans Vermeer in 1984, offers significant insight into translation practices; this approach posits that a translation must extend beyond merely aligning words and phrases across languages; it should consider the role the translated text will play in the target culture. Translators need to make sure that the translated material is easy to understand for those who will read it. The term "Skopos," which comes from a Greek word for "purpose," highlights that translation decisions should align with the audience's goals and cultural background. This involves thinking about who the readers are and what the translation aims to achieve, so it is clear and culturally appropriate for them. Translating books such as Naguib Mahfouz's *Cairo Trilogy* involves more than just switching words between languages. A translator needs to convey the cultural essence of the work. According to Skopos Theory, translations should capture not only the words but also the work's purpose and tone. This task is challenging because it is hard to grasp all the subtle details.

The Skopos Theory offers further valuable context for conceptualising the evaluation of AI translations, like that of any contents produced by ChatGPT, because it looks at how cultural expressions are evaluated. However, although AI systems can provide speedy translation of individual words and phrases into another language, they do not always reflect the cultural and emotional nuances to culture-bound phrases. As an example, AI might output the literal version of an idiom or culturally relevant phrase, without preserving the emotional value of the original resonance that a human translator might be familiar with. Cultural sensitivity is an integral component not only in an overall translation but particularly in translating a culture-bound expression (Baker, 2006); hence, AI systems still need to be refined when it comes to resolve the nuances of a language that come to a human translator as a second nature.



Hans Vermeer (1996) expands on Skopos Theory by emphasizing that translation should be guided by the needs and cultural context of the target audience. This perspective is key to making sure that AI translations of *The Cairo Trilogy* are not just accurate linguistically, but also culturally meaningful and emotionally engaging for English-speaking readers. Based on this, the current research draws on Skopos Theory as its foundation.

Categories of Cultural Expressions in Translation

Cultural expressions, as explained earlier, are an essential component of translation studies. However, transferring them into another culture cannot be done by just mastering the language; it is required that a translator is equipped by a deep understanding of the culture, history, and social context that shape these words (Valencia & Asmarani, 2016). Scholars have proposed different ways to categorize these expressions, focusing on their unique aspect of culture which poses a challenge to translators. These categories can be helpful to translators, guiding them to choose the right strategies for dealing with cultural differences. In the following sections, some of these categories will be explored using insights from important translation models.

Cultural Referents

Cultural referents are words or ideas that are specific to a culture, such as traditions, historical events, or landmarks. Translators often find these challenging because the culture they are translating into might not have a direct equivalent. For instance, the Arabic word "iftar" describes the meal Muslims eat at sunset to break their fast during Ramadan, and it doesn't have a direct match in many Western cultures. Newmark (1988) explores methods for translating cultural concepts. One approach is substitution (which involves replacing a term with a similar one that aligns with the target culture). Another approach is paraphrasing, because it means explaining the idea in different words. Baker (2006) emphasizes the significance of understanding cultural references during translation; she points out that grasping these references is crucial for preserving the meaning and impact of the original text. However, this can be a challenging task. Although this is the case, translators must navigate these complexities.

Idiomatic Expressions

Idioms and cultural expressions are a collection of words that cannot be predicted based on their individual meanings. For example, the English idiom "kick the bucket" means "to die". Arabic speakers would not be able to understand the meaning of this idiom if translated literally into يركل الدلو. Given these explanations, it is clear that theorists and translators are extremely concerned with the transmission of cultural words and ideologies.

Because the methods translators employ to convey the text might result in differences in translation and can represent various ideological viewpoints, they perceive



the process of translation as a delicate endeavor. This implies that a translator must be bicultural rather than bilingual and use caution when translating such a work (Dweik & Suleiman, 2013). Furthermore, Yameng Zhang (2020) explains that translators must be equipped with pragmatic skills to be able to understand the literal and figurative meaning of idiomatic expressions and how they function in their cultural context.

Cultural and Religious Expressions

Religion and language are closely connected, often serving to bring people together. In other words, those who speak the same language tend to share a stronger bond than those who do not understand each other's language (Young, 2001). Understanding and translating religious expressions can be particularly challenging, especially when the translator is not deeply familiar with the cultural or religious context. In some cases, a translator may misinterpret the meaning of a text, especially if it is not in their native language. Religious expressions pose unique challenges because, as Myron Lustig and Jolene Koester (2003, p. 16) point out, "religion is an important institutional network that binds people to one another."

Moreover, religious expressions are deeply rooted in the Arabic culture. Religious expressions are used "in a variety of forms, and in private and public settings, as wishes, offers of congratulations, greetings, farewell and gratitude expressions, curses and other forms" (Al-Rojaie, 2021, p. 3). Thus, translators must be sensitive to the differences between Arabic and Western cultural beliefs and concepts. Arabic and English also have distinct grammatical structures and religious terminology, with each language containing its own set of religious expressions. In fact, the religious terminology in one language may carry different meanings than the same term in another language. This lack of direct correspondence between religious expressions further complicates the translator's task. Religious writings can be interpreted in two different ways, according to Eugen Nida (1964): first, as texts that speak to a community's historical or current religious beliefs; and second, as texts that are essential to the formation and maintenance of a believing community. Nida (1964) underlines that translators should interpret a text's meaning through the eyes of the believing community, which recognizes its authenticity and strongly values its relevance to their beliefs and practices.

Cultural Humor and Irony

Irony and humor present another challenge to translators since they rely significantly on shared experiences, social norms, and cultural knowledge. In some cultural contexts, the Arabic term "مساكين هؤلاء" (the sad souls, these) can imply irony or ridicule. If the target audience is unfamiliar with the cultural context, the subtleties may be lost during translation. Humor usually employs subtle cultural cues; therefore, appreciating it requires knowledge of both the cultural context and the linguistic forms used. According to Hurtado Albir (2001), in order to preserve sarcasm or comedy, translators may need to replace culturally particular references with ones appropriate in the target culture; if this is not possible, an explanation may be required.



Metaphors and Symbolic Expressions

Metaphors and symbolic expressions can sometimes present serious challenges for translators. James Dickins (2005, p. 228) indicates that metaphor is “a figure of speech in which a word or phrase is used in a non-basic sense, this non-basic sense suggesting a likeness or analogy (whether real or not [...]) with another more basic sense of the same word or phrase.” These expressions usually have several interpretations that are influenced by cultural concepts and social conventions. According to George Lakoff and Mark Johnson (1980), metaphors are often rooted in cultural experience and have an impact on our conceptual thinking. For example, according to the target culture, the Arabic metaphor "بحر من الدم" (a sea of blood) may refer to a gory battle, however its exact meaning may differ. It is essential to comprehend these cultural peculiarities in metaphors and ensure that their meaning and emotional impact are preserved in the target language during translation. Translators may need to alter or reinterpret the metaphor to ensure its emotional relevance in the target culture.

Everyday Objects and Practices

Everyday objects and practices also reflect cultural identity and provide insight into a society's lifestyle. These include terms related to food, clothing, tools, and rituals. Lawrence Venuti (2008) emphasizes that translating these expressions requires not only linguistic knowledge but also an understanding of how such objects and practices fit within their cultural context. For instance, "مخبز" (bakery) in Arabic culture is not just a place where bread is baked but a site embedded in specific cultural traditions. Mark Shuttleworth and Moira Cowie (2014) argue that translating such expressions often requires either substitution with culturally appropriate terms or detailed explanations to preserve the practice's significance in the target culture.

Artificial Intelligence and Translation

Machine translation (MT) is the use of artificial intelligence (AI) and machine learning algorithms to translate one language to another. MT is an essential AI application that has grown in popularity in recent years due to advances in natural language processing (NLP) and deep learning techniques (Lauriola et al., 2022). AI-based machine translation has become an effective tool for organizations, governments, and individuals to connect with people all over the world (Hager et al., 2017). In the late 1940s and early 1950s, researchers from the United States and Europe made the first documented attempts at machine translation.

Among the most innovative language uses of AI are translation and interpretation. Translating between two languages, such as Arabic and English, has historically been quite challenging because of differences in syntax, grammar, and cultural idioms (Ali et al., 2012; Al-Jarf, 2022; Banikalef & Naser, 2019). Machine translation (MT) has evolved greatly with AI, and tools are now available to help bridge these linguistic and cultural differences more effectively than ever before (AlAfnan, 2024). AI-powered translation systems, particularly those based on NMT, have the potential to eliminate language



barriers in a wide range of contexts, including media, education, trade, and diplomacy. Even while AI provides groundbreaking solutions, there are still issues with accuracy, context, and nuance in Arabic-to-English translations.

Neural Machine Translation (NMT) marks a major advancement in the translation capabilities of artificial intelligence (Siu, 2024). In contrast to traditional rule-based or statistical translation approaches, NMT employs deep learning algorithms to interpret entire sentences as cohesive units, enabling the AI to better understand context and generate more fluent translations (Mandal et al., 2020). This method proves effective when the languages involved in translation are structurally distinct such as the case with Arabic and English. While Arabic language is characterized by a complicated morphological system in which word roots are reinforced by prefixes, suffixes, and suffixes that express meaning, English is known for its relatively basic morphology and flexible sentence construction; NMT systems, such as those used by Google Translate and DeepL, considerably improve the ability to manage these linguistic complexities.

Despite the fast advancements in AI-powered translation, the current research paper points out that some problems still persist. One difficulty is to ensure training AI systems on high-quality, diversified datasets that capture the complete cultural nuances in Arabic and English. While AI has enhanced translation accuracy and efficiency, human translators are still crucial, particularly for complex texts like literature that require cultural insight. AI is effective with routine and large-scale translations, but it is human translators who bring essential context, subtlety, and cultural awareness to ensure meaningful communication. Although AI performs well in many cases, it does not match the deep understanding that human translators have. Thus, both AI and human translators are needed.

In November 2022, OpenAI released the AI chatbot ChatGPT, initially based on the GPT-3 series of large language models. Since its launch, it has been improved using supervised and reinforcement learning methods. Originally designed for use in conversational applications such as chatbots and messaging systems, ChatGPT has evolved from the GPT-3.5 model that completed training in early 2022. Recent upgrades led to the release of GPT-4, the latest version in OpenAI's deep learning scaling initiative. GPT-4 is a large multimodal model that processes both text and image inputs, producing text outputs. Although it is still less capable than humans in many real-world tasks, GPT-4 performs at a human-like level on various academic and professional benchmarks.

Although AI increasingly produces fluent translations, scholars of embodied cognition argue that understanding culture requires lived experience (Lakoff & Johnson, 1980). Cultural expressions often rely on embodied emotions, social practices, and tacit knowledge that cannot be fully encoded in training data. Moreover, AI cannot evaluate its own translations pragmatically, nor does it possess experiential grounding. Thus, certain dimensions of cultural – pragmatic judgment remain tied to human embodiment.

METHODOLOGY

This study investigates how cultural expressions from Naguib Mahfouz's *The Cairo Trilogy* are translated from Arabic to English. It compares translations by ChatGPT with those by human translators to see how well AI handles these expressions. Literary works



often have deep cultural meanings. While AI translations can be effective, human translators catch subtle details better. Even though AI has made a great process in translation, this research aims to indicate where AI still needs improvement in some areas.

This study employs a purely qualitative research design, as its primary aim is to analyse culturally embedded expressions and their pragmatic functions within literary translation. Because the phenomena under investigation – cultural nuance, figurative meaning, and translator decision-making – are inherently interpretive, the study does not incorporate quantitative measurements or statistical analysis. Instead, it relies on close textual reading, thematic coding, and comparative interpretation to evaluate the differences between AI-generated and human translations.

The Cairo Trilogy

The Cairo Trilogy (authored by Naguib Mahfouz) is essential to modern Arabic literature; it includes three novels: "Palace Walk," "Palace of Desire," and "Sugar Street." These books narrate a story of (the) al-Jawad family living in Egypt during the early 1900s. They delve into themes such as power struggles, family relationships and societal changes. A key figure in the story – Ahmad al-Jawad – represents the clash between traditional values and modern ideas. However, this offers a view into the cultural (and political) scene of Cairo at that time, although it reflects complexities that remain relevant today. The trilogy is renowned for its rich storytelling and depth, and it played a crucial role in Naguib Mahfouz being awarded the Nobel Prize in Literature in 1988. The Arabic version of *Palace Walk* came out in 1956 with the title *Bayn-al-Qasrayn*. *Palace of Desire* followed in 1957, first published in Arabic as *Qasr al-Shawq*. The third book in the series, *Sugar Street*, was also originally published in Arabic in 1957 under the title *al-Sukkariyya*. The English-language translation of *Palace Walk* was completed by William Maynard Hutchins and Olive E. Kenny. The translation of *Palace of Desire* was undertaken by William Maynard Hutchins, Lorne M. Kenny, and Olive E. Kenny. *Sugar Street* was translated into English by William Maynard Hutchins and Angele Botros Samaan.

ChatGPT

The study will use translations produced by ChatGPT, a computer program from the company OpenAI, which came out in November 2022. ChatGPT is built on the GPT-3 series of language models that were developed in 2020 by Brown and other researchers. It was originally intended for use in chat applications, such as chatbots and messaging services. Over time, it has improved through techniques known as supervised learning and reinforcement learning, which were detailed by Radford and other researchers in 2019. The first version used a model from the GPT-3.5 series, which finished training in early 2022. Recently, ChatGPT was upgraded to GPT-4, which marks a major advancement in OpenAI's work in deep learning, according to OpenAI in 2023. GPT-4 is a large model that can process both text and images and generates text outputs. While it still doesn't quite reach human abilities in many real-world tasks, GPT-4 has shown it can perform at human levels in several academic and professional areas, as noted by OpenAI in 2023.



All AI-generated translations in this study were produced using ChatGPT (GPT-4), accessed in March 2025, ensuring consistency across all outputs. To maintain methodological transparency and reproducibility, the same standardized prompt was used for every excerpt:

“Translate the following Arabic passage into English, paying careful attention to cultural expressions, pragmatic meaning, and figurative language.”

This controlled prompt design minimizes variability in the model’s responses that could arise from changes in instructions or contextual cues.

To reduce researcher bias and ensure that the dataset reflected the system’s default, unoptimized performance, only the first output generated by the model for each excerpt was considered. No iterative prompting, regeneration, or ranking of alternative outputs was conducted. This choice follows established best practices in machine-translation evaluation, where repeated querying can introduce subjective selection effects and undermine the reliability of comparative analysis.

Data Selection

The study will draw its primary data from *The Cairo Trilogy* by Naguib Mahfouz. This series is abundant in cultural expressions and social references depicting Egyptian life. The research will concentrate on specific Arabic cultural expressions within the trilogy, particularly those that are challenging to translate into other languages. These expressions will encompass a range of cultural referents, idiomatic phrases, social practices, and religious or spiritual references that are inherently tied to Egyptian society and the Arabic language. The goal is to examine how these expressions are handled by both AI and human translators and assess the extent to which each translation preserves the original’s cultural and emotional resonance.

The human translations used for comparison, as explained earlier, are the officially published English translations of the *Cairo Trilogy* by William Maynard Hutchins, Olive E. Kenny, Lorne M. Kenny, and Angele Botros Samaan between 1956-1957. These translations were selected because they are the canonical English editions, produced by professional translators and widely recognized in scholarship.

Translation Methods and Evaluation Criteria

To compare how AI and human translators handle the cultural expressions of the text, two sets of translations will be analyzed: AI Translations using the latest version of OpenAI’s ChatGPT, and Human Translations produced by professional translators. The current research paper aims to evaluate the accuracy of AI translations of Arabic literary texts. It places a special focus on how AI handles social and cultural aspects, including idioms and religious phrases that are unique to Arabic culture. Additionally, it compares these AI translations to those done by human translators to evaluate the similarities and differences in handling these unique aspects. Understanding cultural expressions needs a grasp of their cultural background. This evaluation aims to see if AI can accurately translate references or sayings specific to a culture without changing their meaning. It



also examines human translations to evaluate how well they preserve these cultural aspects.

This study adopts a qualitative content analysis approach, which is well suited to examining nuanced linguistic and cultural features embedded in literary texts. The method emphasizes the systematic identification, coding, and interpretation of meaningful units of data – in this case, Arabic cultural expressions that pose translation challenges. The excerpts were selected through purposive sampling, a strategy commonly used in qualitative translation studies to isolate segments that are information-rich and analytically relevant. Priority was given to expressions with high pragmatic load, dense cultural or religious connotations, and figurative meaning – features that are most likely to expose differences between human and AI translation performance. This purposive selection ensures that the analysis focuses on segments where translation decisions carry significant semantic and cultural implications rather than on routine or literal passages.

Each selected excerpt was then coded deductively using a predefined category system comprising three analytical domains:

1. Religious expressions,
2. Idiomatic expressions, and
3. Metaphors and figurative language.

These categories derive from established classifications in translation studies (e.g., Baker 2011; Newmark 1988) and reflect recurrent challenges documented in Arabic – English translation scholarship. Coding the data in this structured way enables the researcher to trace patterns in how ChatGPT and human translators handle different expression types.

To evaluate whether one translation can be considered superior to another, this study adopts a set of criteria grounded in Baker's (1992, 2011) typology of equivalence and widely applied in translation studies. These include semantic accuracy (correspondence of propositional meaning), pragmatic equivalence (the preservation of intended illocutionary force and implicature), cultural adequacy (alignment with the socio-cultural context encoded in the source text), naturalness and fluency in the target language, and functional alignment with the Skopos of the translation. Within this framework, "capturing cultural valence" is not treated as the sole marker of translation quality; rather, it forms an integral component of both pragmatic equivalence and cultural adequacy as defined by Baker. A translation is therefore considered "better" when it maintains the denotative meaning of the source text while also reproducing its culturally embedded connotations, emotional resonance, and communicative intent in a manner that is linguistically natural and contextually appropriate for the target readership.

DATA ANALYSIS

This analysis explores the translations of ChatGPT and human translators when dealing with Arabic cultural expressions drawn from Naguib Mahfouz's *The Cairo Trilogy* into English. It aims to evaluate the quality of the English translations produced by ChatGPT when processing Arabic idiomatic and religious expressions in the context of literary texts. The accuracy and cultural sensitivity of the English translations will be compared to the original Arabic text as well as the English translations produced by



human translators. These expressions are deeply rooted in Arabic culture, history, and society, which makes them challenging for translators, especially when direct English equivalents are not available.

The study investigates how translations by AI measure up against those by professional human translators. This analysis reveals the strengths and weaknesses of AI, especially in maintaining cultural and emotional meanings. By comparing AI and human translations directly, the study seeks to determine how well AI can reproduce the cultural and practical elements of the original Arabic text. This section also explores how well AI systems handle idiomatic phrases, culture-specific references, and social dynamics embedded in Mahfouz's work. The findings aim to highlight areas where AI translation has succeeded in capturing the intended meaning and areas where further development is needed to enhance its cultural competence.

The examples will be categorised into three sections: religious expressions, idiomatic expressions, and metaphors.

Religious Expressions

Example 1

وبين هذا وذاك تسجع في باطنه أنغام حلوة لطيفة مما تردد في المجلس السعيد فذهب معها وجاء وهتف وراءها من أعماق قلبه: "أه الله أكبر" هذا الغناء الذي يحبه كما يحب الشراب والضحك والصحاب.

ChatGPT: Between this and that, sweet and gentle melodies resonate within him, echoing from the joyful gathering. He followed them, coming and going, and cried out from the depths of his heart: 'Ah, Allah is the Greatest.' This song he loves, just as he loves drink, laughter, and companions."

Human translator: Now and then some of the sweet, catchy tunes that were sung at their happy parties ran through his head. He abandoned himself to them and sighed, as they drifted away from him, "God is most great." He loved the singing as much as the drink, laughter, companions.

"الله أكبر," translating to "God is the Greatest," is a well-known Arabic phrase used in many contexts. It is common in religious ceremonies, at celebrations, and during times of strong emotion. The phrase serves as both a formal prayer and a spontaneous expression of amazement or deep feeling. The phrase "الله أكبر" expresses strong feelings such as happiness or excitement. For example, Ahmad Abdujawwad remembers good times with friends, enjoying drinks and music he loves. He uses this phrase to convey the joy the music brings him. The translations "Ah, Allah is the Greatest" and "God is most great" produced by AI and human translators, however, emphasize the religious aspect of the Arabic phrase failing to capture the character's joy and emotional release. A more fitting translation might be "Oh my God," because it conveys similar feelings of joy or surprise (much like the phrase "الله أكبر").

Example 2

وأخيراً تساءل دون أن يرفع رأسه عن فئجان القهوة الفارغ: استرددت صحتك؟ فقالت أمينة بصوت خفيض: الحمد لله يا سيدي.



ChatGPT: Finally, he asked without lifting his head about the empty coffee cup: 'Have you regained your health?' Amina said in a soft voice: 'Praise be to God, sir.'

Human translator: Finally, without raising his head from his empty coffee cup, he asked, "Have you recovered?" Amina replied in a subdued voice, "Yes, sir, praise God."

The Arabic phrase "الحمد لله" translates to "Praise be to God" or "Thanks to God" in English. People who speak Arabic use it in various situations to express gratitude and recognize their circumstances, beyond just religious settings. For instance, Amina said "الحمد لله" to express her thankfulness for feeling healthier. While translations like "Praise be to God" or "Praise God" convey the meaning, the human translator added "Yes, sir," which emphasizes Amina's acknowledgment of her improved health. However, the AI translation misses the deeper significance of the phrase in this particular context.

Example 3

فجرى بصره على جسمها في عجلة ونهم كما يجري الفأر على جوال أرز ليجد لنفسه منفذاً، وقال
بإعجاب: بسم الله ما شاء الله! فواصلت تقدمها بعد التوقف باسمه وهي تقول في خوف مصطنع:
عينك! ... أعوذ بالله!

ChatGPT: "His gaze hurriedly and greedily scanned her body, like a mouse running over a sack of rice to find a way out. He said with admiration: 'In the name of God, what God wills!' She continued moving forward after stopping, smiling, and saying in feigned fear: 'Your eye! ... I seek refuge in God!'"

Human translation: His eyes ran over her body as quickly and greedily as a mouse on a sack of rice looking for a place to get in. He said admiringly, "In the name of God. God's will be done." After her pause, she continued to advance, smiling. She said with pretended fear, "Your eye! God protect me from it."

The phrase "بسم الله ما شاء الله" translates to "In the name of God, what God wills" or "God has willed it." It is a widely used Arabic expression to convey wonder or admiration when witnessing something beautiful or extraordinary. It shows respect for remarkable things. The phrase "أعوذ بالله" means "I take refuge in God" or "I seek refuge in God." People use it to request protection from danger, evil, or threats like the "evil eye." When someone feels vulnerable or scared, they say it to seek God's help against negative things, including jealousy and hostility.

The English translations of the Arabic phrases أعوذ بالله and بسم الله ما شاء الله produced by ChatGPT reflect the literal meanings of the phrases missing the richer feelings and subtleties. Human translators, however, resorted to the strategy of addition for the first phrase as they included words like "with admiration" to explain that this phrase is used to express admiration. In the second translation, they resorted to paraphrase to express the original emotions and intentions embedded in the second phrase أعوذ بالله reflecting a deep understanding of the context. The translation flows naturally and smoothly, providing a deeper understanding of the message and appears emotionally connected to the context, capturing the woman's concern in a more intimate, natural way. Thus, human translations capture cultural and emotional nuances more effectively, making religious expressions sound natural in English while preserving their protective and



respectful meanings. In contrast, AI translations miss the emotional depth that human translations provide.

Example 4

كنت قبيل حضورك أتذكر منظر الفار وهو يرقص الله يقطعه.

ChatGPT: I was just about to recall the sight of the mouse dancing, may God cut it off, before you arrived.

Human translator: Just before you arrived I was remembering last night and what al-Far looked dancing. May God strike him down.

The Arabic expression "الله يقطعه" translates to "May God cut him off," but in casual discourse especially amongst friends, it conveys a desire for someone to be dealt with in a notably strong or dramatic fashion. This phrase is frequently employed humorously, sarcastically, or when an individual feels a touch of annoyance, depending on the context. In such instances, it is designed to elicit laughter. The speaker is not genuinely irate; rather, they utilize this expression in a light-hearted manner to convey mild irritation or amusement – much like when they observe "الفار" (al-Far) engaging in a dance.

When ChatGPT translates it to "May God cut it off," the fundamental meaning remains intact; however, the humor and irony dissipate. The translation may also cause confusion to the target audience who are not aware of the pragmatic function of this expression. In English, "cut it off" comes across as excessively serious, which leads to a misinterpretation of the intended context. Furthermore, by transforming a clever joke about a human into an odd reference to an animal, the term "mouse" causes confusion. "May God strike him down" more successfully expresses the intended sarcasm. Even while it is still a powerful term, it is more appropriate for the humorous goal, particularly when used to refer to a specific individual.

Example 5

فقلت خديجة، وهي تبسط راحة يُمناها في وجهه مفرجة بين أصابعها الخمس: ومن شر حاسد إذا حسد!

ChatGPT: Khadija said, as she extended the palm of her right hand towards him, spreading her five fingers: 'And from the evil of the envious when he envies!'

Human translator: To ward off the evil eye, Khadija spread her fingers apart and held up her hand with the palm facing Yasin, reciting, "And from the evil of the envious person in his envy" (Qur'an 113:5).

The phrase "ومن شر حاسد إذا حسد" translates to "And from the evil of the envious when he envies." This is a verse from the Qur'an – specifically Surah Al-Falaq, verse 113:5. It serves as a prayer asking for protection from harm; particularly, harm that arises from envy. People often recite this verse to seek safety from negative emotions or harmful intentions that others might have toward them. It underscores the importance of turning to a higher power for protection against jealousy and ill will. The phrase invokes the idea of seeking refuge from the harm caused by someone's jealousy, which in Arabic culture is often believed to have the power to cause misfortune, illness, or other negative consequences.



The phrase is translated correctly by ChatGPT; however, it does not provide much significant additional context that could aid an English-speaking audience in understanding the cultural relevance or religious context. The phrase "the envious when he envies" derives directly from Arabic; however, it lacks essential spiritual and cultural nuances, which diminishes its ritual significance – such as its role in providing protection against the evil eye. A human translator effectively incorporates cultural context by adding where this phrase comes from- Surah Al-Falaq in the Qur'an (verse 113:5), a frequently overlooked detail that is crucial for understanding these customs.

Example 6

فأدركت خديجة ما وراء كلامه من التعريض بها، وقالت له وهي تهز كتفيها متظاهرة بالاستهانة:
وَقَاعَ يَسْعَى بوقِيعَةً بين أختين
– أنا؟ حسبي الله، فهو المطلع على حسن نيتي.

ChatGPT: Khadija realized the insinuation behind his words, and said to him while shrugging her shoulders, pretending to disregard him: 'A backbiter who seeks to create discord between two sisters? – Me? God is sufficient for me, for He knows the purity of my intentions.

Human translator: she scolded him: "A troublemaker is trying to stir up dissension between two sisters.

Me?...God forbid. God knows my intentions are good.

The phrase "حسبي الله," which translates to "God is sufficient for me," holds great importance in Arabic culture. People often say it when they feel unfairly treated or misunderstood, asking for God's help and justice. This expression shows a belief in a higher power capable of fixing wrongs and dealing with false accusations. When someone says "حسبي الله," they are trusting that God will make things right, offering support and fairness during difficult times. Although the English version produced by ChatGPT "God is sufficient for me" suggests dependence on God and a declaration of innocence, it does not fully capture the intense emotions conveyed by the original Arabic expression. In Arabic, the phrase emphasizes how Khadija defends herself and her belief in God's fairness when she faces accusations. The human translation "God forbid; God knows my intentions are good." reflects the defensive essence of the Arabic phrase "حسبي الله." It communicates God's awareness and fairness; remaining true to the original, it highlights self-defense and honesty.

Idiomatic Expressions

Example 1

عثمان: ألم لا يوجدان في بيت واحد مثل بابا وماما...؟
رضوان: القسمة والنصيب، هذا ما تقوله جدتي الأخرى.

ChatGPT: Othman: "Why don't they live in the same house like Papa and Mama...?"
Radwan: "It's fate and destiny, that's what my other grandmother says."

Human translator: Uthman: "Why aren't they in one house like my papa and mama?"

Ridwan: "Fate and destiny. That's what my other grandmother says.



The Arabic saying "قسمة ونصيب" which translates to "fate and destiny" in English illustrates situations that are beyond our control; suggesting they are dictated by fate or a superior force. In Arab cultures, individuals frequently employ this phrase when discussing relationships – marriage or circumstances – where they perceive a lack of agency. However, this expression captures an existential truth, for it reflects a belief in the inevitable nature of life's outcomes. Although some may argue otherwise, the sentiment remains deeply ingrained in the social fabric of these cultures, because it encapsulates the struggle between personal choice and external influences. Such a concept provides rationale for why events may not unfold as anticipated, particularly in instances of breakups, love, or aspirations that remain unrealized. However, although "fate and destiny" serves as an accurate English rendition, it fails to encapsulate the entire cultural richness of "قسمة ونصيب". In Arabic culture, this is a saying that shows belief in God's plan. In English, these words, although used, are not tied to one particular culture or religion. When this Arabic saying is translated into English, it implies accepting whatever happens, yet it loses important cultural and spiritual meanings. Although the translation is straightforward and works in English, it does not capture the full depth and richness of the Arabic phrase "قسمة ونصيب." This phrase carries a unique perspective that's difficult to fully convey in English.

Example 2

ثم قال في عدم اكتراث: أذنًا من طين وأذنًا من عجين، هذا ما تعلّمته من التجربة.

ChatGPT: Then he said nonchalantly: 'One ear of clay and the other of dough, this is what I have learned from experience.'

Human translator: Then he responded with apparent disinterest, "I act as though one of my ears was made of clay and the other of dough. This is what I've learned from experience."

The phrase "أذن من طين وأذن من عجين" is a well-known Arabic idiom. It literally translates to "an ear of clay and an ear of dough," and it is used figuratively to express indifference or disregard for something or someone. The expression signifies that an individual is not paying attention or perhaps does not care about what is being articulated, as if their ears are composed of clay and dough, which are incapable of hearing or reacting. Although the translation is precise, the cultural richness may not be fully conveyed. In Arabic, this phrase communicates indifference and is frequently employed in a humorous or dismissive context. In English, its meaning might not be readily apparent, because "one ear of clay and the other of dough" fails to naturally express indifference in daily conversation.

The human translation (I act as if one of my ears were made of clay and the other of dough) elaborates on the idiomatic expression by clarifying the action, rather than merely translating the words. The phrase "I act as if" serves as a more accessible means to convey the cultural notion of indifference or detachment. This adjustment helps English speakers recognize indifference or a lack of concern. The translation connects languages and cultures by preserving the relaxed tone and clarifying the message. However, some people worry that the original sentiment might be lost in translation. This



concern is valid because subtle details can be difficult to maintain, even though some aspects might still stay the same.

Example 3

وهي تضحك ضحكة خافتة: يا بخت من وفق راسين في الحلال.

ChatGPT: She laughed a soft laugh and said: 'Blessed is the one who brings two heads together in lawful union.'

Human translator: She laughed gently and replied, "How lucky the man is who brings two people together in a moral way."

The expression "يا بخت من وفق راسين في الحلال" is an idiomatic expression used in Arabic-speaking cultures that can be understood as a statement of praise for someone who has successfully brought two people together in a moral, lawful, or respectable way – typically referring to marriage or a union that is legitimate according to societal and religious norms.

While ChatGPT used the phrase "lawful union" describing the relationship as morally right and religiously accepted, the phrase "two heads together" can sound awkward in English; since "heads" is not commonly used to mean people coming together. It is clearer to say "two people together" or "two hearts together" in English.

The human translation focuses on the ethical aspect of bringing two people together by using "moral way" instead of "lawful union." This approach fits naturally in English, highlighting the ethical side while honoring the original intent. Moreover, saying "two people together" rather than "two heads" makes it clearer and reflects how people typically talk about forming a moral or legitimate relationship in everyday speech.

Example 4

فدارت ابتسامة بعثها الثناء، ثم تظاهرت بالدهشة، وهي تقول: لا أفهم مما تعني شيئاً، الظاهر أنك في واد وأنا في واد.

ChatGPT: A smile formed, brought on by the praise, then she feigned surprise as she said: 'I don't understand what you mean at all, it seems that you're in one valley and I'm in another.'

Human translator: She hid the smile his praise had inspired and pretended to be astonished as she said, "I absolutely do not understand what you mean. It's clear that we're mountains apart."

The idiomatic phrase "الظاهر أنك في واد وأنا في واد" (it seems that you are in one valley and I am in another) is utilized when two individuals are engaged in a conversation, but find themselves not comprehending each other or harboring disparate thoughts and opinions. This phrase is commonly used in Arabic to express a disconnection or lack of understanding between two parties. It is often used humorously or to acknowledge that the conversation has taken an unexpected or confusing turn, suggesting that the two people involved are not understanding each other's point of view or are not even talking about the same thing. The ChatGPT translation is a literal reflection of the original; the metaphor of "valleys" might not fully connect with English speakers. The phrase "in one valley and I'm in another" suggests a sense of disconnection, but it could appear unfamiliar to those who are not accustomed to this metaphor.



However, the metaphor "mountains apart" used by the human translator is culturally relevant in English and far more familiar than "valleys." It also emphasizes the distance between two individuals, potentially suggesting a greater disconnect. The phrase "mountains apart" is more idiomatic in English and aligns well with the general cultural understanding of being far apart in thought, action, or understanding because this expression captures the essence of emotional and intellectual separation.

Metaphors

Example 1

قال بلهجة مطمئنة، ولعلّه كانَ يشيرُ إلى الرواج الذي لم تزل تشمل السوق بسكرته: الحال معدن، والحمد لله.

ChatGPT: He said with a reassuring tone, and perhaps he was referring to the prosperity that still intoxicates the market with its sweetness: 'The situation is good, and praise be to God.'

Human translator: Ahmad replied in a reassuring tone, "Business is great, praise God."

The phrase "الحال معدن" literally translates to "the situation is a mine" or "the situation is a resource"; it serves as a metaphor indicating that the current circumstances are promising and holds valuable potential. This suggests, in a manner similar to a mine filled with resources, that the situation is rich. The English phrase (the situation is good) merely conveys that things are acceptable; however, it inadequately captures the essence of the Arabic phrase "الحال معدن." In the business realm, "معدن" denotes far more than mere satisfactory conditions. It characterizes a scenario teeming with potential and a plethora of opportunities for success. This term suggests an environment that actively fosters growth and development. "معدن" in a business context signifies substantial prospects for success and advancement, because the circumstances are ideally suited for expansion. The translation offered by ChatGPT overlooks this nuanced meaning and fails to emphasize the concept of prosperity as effectively as human translators do. Human translators excel at conveying positivity and prosperity because they use more natural phrases. For example, saying "business is great" clearly communicates abundance and success, reflecting the true meaning of "الحال معدن." Automated translations tend to miss crucial nuances and, although they may seem efficient, they lack the warmth and personal touch of human translators. This absence can diminish the richness of the language, though it isn't entirely lost.

Example 2

فقلت أمينة ممتنة لتوددهُ: ياسين رجل طيب، والرجل الطيب لا يمتنع عن الزواج إلا مضطراً. الحق أن لك أن تفكر في استكمال دينك.

ChatGPT: Amina said gratefully for his kindness: 'Yasin is a good man, and a good man only refrains from marriage when he is compelled. The truth is, it's time for you to think about completing your faith.'

Human translator: To show her affection for him, Amina commented, "Yasin's a fine man who stays away from marriage only if he's forced to. The fact is that it's time



for you to think about getting married again, if only to comply with the teachings of religion.”

The metaphorical phrase "استكمال دينك" – "completing your faith" – or "completing your religion," particularly indicates getting married in Islam. In this regard, marriage is viewed as an integral component of fulfilling religious duties and attaining spiritual wholeness. It serves as a means to lead a balanced and healthy existence in accordance with Islamic principles. The translation supplied by ChatGPT – "It is time for you to consider completing your faith" – was excessively literal; however, it overlooked deep religious implications of the metaphor. It depicted marriage as an abstract notion associated with spiritual fulfilment, which could seem overly formal. This strategy fails to reflect the cultural depth, making it difficult for readers to appreciate the full weight of the concept.

The human translation, to comply with the teachings of religion, succeeds in providing a more natural and culturally rich rendering. It portrays marriage as a religious obligation, which is more aligned with the way the original Arabic phrase would be understood by a native Arabic speaker.

Example 3

لَجْتُ به الحيرة، فازدرد ريقه، وقال بصوت منخفض: لعلي لا أعرفها، (ثم يبتسم متوددا) لو كنت أعرفها ما كان بي حاجة إلى طلب تعلمها.
فسأله مستكبرا: إذا كنت لا تعرفها فبأي حق اخترتها؟ هه؟ هل تهيم بالضعة لوجه الله؟

ChatGPT: He was overwhelmed with confusion, swallowed his saliva, and said in a low voice: 'Perhaps I don't know her,' (then he smiles warmly) 'If I had known her, I wouldn't have needed to ask to learn about her.' He then asked him in disbelief: 'If you don't know her, then by what right did you choose her? Huh? Are you infatuated with her for the sake of God?'

Human translator: Kamal was overwhelmed by confusion. He swallowed and said in a low voice, "Perhaps I don't really know." Then, smiling ingratiatingly, he continued: "If I knew, I wouldn't need to study it."

His father asked incredulously, "If you don't know what it is, what grounds do you have for choosing it?...Huh? Are you simply infatuated with a life of humiliation, for no reason at all?"

The phrase "لوجه الله" literally translates to "for the sake of God". In this context, it is used to refer to something being done purely for divine or spiritual reasons, without any personal benefit or ulterior motive. In the cultural context of Arabic, this expression carries a sense of sacrifice and selflessness, as it is commonly used to describe actions that are intended to please God, without seeking reward or recognition.

The translation of ChatGPT lacks the cultural context and the sharp critique that the Arabic phrase carries, especially with using the pronoun *her* instead of *it* which can be misleading. The questioning tone of the phrase in the translation is preserved, but the underlying sarcastic or critical tone in the Arabic is muted in English. The Arabic "هل تهيم بالضعة" can be interpreted as mocking or scornful, especially in the context of questioning someone's motivations. This sarcasm might not come across clearly in the English phrase "Are you infatuated with her for the sake of God?"



The human translation, "Are you simply infatuated with a life of humiliation, for no reason at all?" adds a more specific critique of the person's actions. The phrase "life of humiliation" directly translates the concept of "الضعة" (humiliation or degradation), which is a key part of the original Arabic. This makes the translation more culturally and contextually accurate, as it highlights that the speaker is criticizing the potential foolishness of devoting oneself to something that leads to humiliation or degradation.

The human translation retains the sarcasm and mockery of the original phrase by using "a life of humiliation" instead of a more neutral term like "infatuation." This translation effectively captures the critical tone of the Arabic, which questions the value or wisdom of the person's choices. The use of "for no reason at all" mirrors the foolishness implied by the original phrase and emphasizes the absurdity of the situation.

Example 4

فأرسل صوته وراءها قائلاً في جزع: تذهبين دون تحية! اشرب رأسها فوق حبل الغسيل، ثم قالت: البيوت من أبوابها، هذه تحيتي.

ChatGPT: He sent his voice after her, saying in distress: 'You're leaving without a greeting!'

She lifted her head above the clothesline and then said: 'Homes are known by their doors, this is my greeting.'

Human translator: He called after her anxiously, "Are you leaving without saying goodbye?"

She lifted her head high to look back over the laundry and remarked, "Enter 'houses by their doors.' That's my farewell message for you." (Qur'an, 2:189.)

In this instance, the phrase البيوت من أبوابها is used to emphasize that a legitimate and acceptable approach to forming a union (typically marriage) is to approach it through the correct, lawful channels. In the Arabic culture, this expression reinforces the importance of formalities and traditions in marriage. The phrase "البيوت من أبوابها" is being used by the woman to communicate that a man should not approach her directly without following societal and religious norms.

While ChatGPT translates the literal meaning, it does not fully convey the moral and societal weight of the phrase as it is intended in the context of marriage. The woman is essentially saying that, in order for the relationship to progress, the man must approach her family through the correct, formal process – in this case, marriage.

The human translation delves into the significance of proposing marriage to a woman within traditional social and religious frameworks. By citing Qur'an 2:189, it demonstrates that her words extend beyond mere personal preferences, being deeply grounded in religious and cultural beliefs. The phrase "farewell message" indicates that she is not simply exchanging pleasantries with the man; however, she is laying down explicit guidelines for future interactions. This approach renders the translation both more robust and more in harmony with cultural traditions, although it might challenge some contemporary perspectives.

Example 5

ولكن من بنت الحلال التي قررت أن تتخذها زوجة؟



ChatGPT: But which righteous woman have you decided to take as your wife?

Human translator: But who's the fine girl you've decided to take for your wife?

The phrase "بنت الحلال" is a common expression in Arabic, which literally translates to "a daughter of lawful" or "a girl of righteousness." In this context, it refers to a woman who is considered moral, virtuous, and socially acceptable, especially in the context of marriage. The word "حلال" in Arabic is used to denote things that are permissible or lawful according to Islamic principles, and when paired with "بنت" (daughter or girl), it emphasizes that the woman in question is viewed as morally upright and appropriate for marriage. In traditional and conservative communities, this term refers to a woman from a respected family, making her an ideal choice for a wife.

The ChatGPT translation is culturally neutral but might miss the informality or everyday tone of the original Arabic. The translation employs "righteous" to signify the woman's good morals; however, it may not completely encompass the precise meaning of "بنت الحلال." The human translator uses the phrase "fine girl" which refers to a lady who is seen as respectable and suitable for marriage, similar to the Arabic expression "بنت الحلال." Both phrases relate to women who are regarded honorable and appropriate for marriage, and they are frequently used with positive connotations in everyday conversations. They reflect society's respect and expectations for women classified as "بنت الحلال."

Example 6

فأجاب بالصمت المتجهم حتى زعقت: خبر أسود ... أولئك الذين شمتوا بنا في أجل مصاب؟

ChatGPT: He responded with a grim silence until she shouted: 'A bad omen... those who took pleasure in our greatest misfortune?'

Human translator: His only response was glum silence. She screamed, "What dreadful news! Those people who gloated over our greatest misfortune?"

The phrase "خبر أسود" literally means "black news." In this example, "أسود" (black) is a metaphor for something sad, tragic, or bad. Arab people use it to indicate news or events that bring sorrow, misfortune, or disappointment. Both ChatGPT and human translations produce the sad tone embedded in the original metaphor.

DISCUSSION

The results of this study highlight the considerable advances in AI translation systems regarding the translation of cultural expressions. This research paper specifically focuses on the translations of cultural expressions of The Cairo Trilogy by Naguib Mahfouz and thus highlights the manner in which AI systems resolve issues that human translations would generally tackle, especially in contextually rich languages. However, some key results also illustrate the limitations of AI in capturing the nuance of pragmatic language and provide avenues for future advancement.

Although human translators may also differ in style and interpretation, the purpose of comparing AI with a professionally published translation is not to claim that human translation is monolithic. Rather, it is to identify systematic patterns in AI performance – especially consistent weaknesses in pragmatic, cultural, and idiomatic interpretation.



These patterns differ from the natural variation found between human translators. Therefore, the conclusion is not simply that translation should be collaborative, but that present AI lacks culturally embodied judgement that human translators apply instinctively.

While this study compares ChatGPT's output to a single set of published human translations, it is important to acknowledge that human translation is not monolithic and does not constitute a single, universally accepted "gold standard." As previous scholarship has shown, different human translators may render the same culturally loaded expression in distinct yet equally valid ways, depending on their stylistic preferences, cultural background, and interpretive stance. The aim of the present study is therefore not to establish one definitive or "correct" translation, but rather to evaluate how AI performs in relation to a well-regarded professional benchmark. Future research could expand this comparison by incorporating multiple human translators of varying backgrounds, conducting back-translation exercises to reveal latent interpretive differences, or employing inter-rater reliability measures to assess the consistency of evaluative judgments across a panel of translation experts. Such methodological extensions would provide a more comprehensive picture of translation variability and further illuminate the specific strengths and limitations of AI in relation to human translational diversity.

AI vs. Human Translation in Pragmatic Accuracy

The main goal of this study was to check how accurate AI translations are, especially when it comes to phrases that are culturally loaded. For example, the phrase "الحال معدن" (which means "the situation is full of possibilities") shows how well AI systems like ChatGPT can create translations that are correct in terms of grammar and structure. But there is a striking difference in the level of subtlety of culture preserved with AI vs human translation. Although ChatGPT did retain the basic meaning of many expressions, human translators did far better at cultural sensitivity, changing the expressions so that the original social and emotional nuances were kept. Examples included "استكمال نصف دينك" which failed to capture the broader set of contextual meaning implicit in the utterance in the culture of Arabic.

AI has treated those expressions similarly in the examples provided, but they seldom really cared about their actual usage in colloquial Arabic. For instance, "الوجه الله" (for God's sake) and "من شر حاسد إذا حسد" (from the harm of an envious person when they envy) are both revered phrases with heavy emotional and spiritual meaning in Arabic. Although both human and artificial intelligence translators interpreted the text fairly similarly, human translation conveyed far more cultural significance and emotional depth to such expressions. This reflects, in turn, higher language and cultural awareness.

The study also highlighted the importance of cultural sensitivity and contextual awareness in the translation of cultural and religious expressions. Although AI models like ChatGPT have advanced in handling straightforward translations, they still struggle with context-dependent meanings, especially when translating idiomatic expressions that carry deep cultural significance. For instance, the cultural nuance embedded in the metaphor "البيت من أبوابها" (A home is known by its door) is completely missed in the AI translation unlike the human translation which was socially and religiously appropriate.



This finding basically points out the need for a better context-aware training of AI systems using cultural references and social dynamics.

Furthermore, even though AI translations can be accurate in certain cases, they did not manage to convey the emotional tone or nuanced speech acts involved. Expressions of irony or humor, for example, "الله يقطعه" "May God cut him off," warranted varying success at best. The ironical undertone that is crucial for maintaining the intended tone of humor or sarcasm in the AI translation was lost. On the other hand, human translators were much better reproducing the sensitive nuances of these expressions.

AI excels at translating huge quantities with speed and correct grammar. It works fast and saves money, making it useful for big jobs. But it has flaws. AI struggles to grasp deep cultural meanings and social context. ChatGPT can miss the point in some cases, producing translations that are grammatically and structurally correct but lack emotional or cultural dimension. The results show that while AI has made progress, it still misses small cultural details that humans catch. Future work should focus on training AI models on context and cultural data. AI should learn not just from language data, but also from culture to better understand certain phrases and sayings.

CONCLUSION

This study contributes to the growing body of research on the role of pragmatics in translation, especially in the context of AI-powered systems like ChatGPT. While AI translation systems have shown promise in handling many aspects of language translation, significant gaps remain in their ability to effectively translate context-dependent pragmatic expressions. The findings underscore the importance of incorporating cultural awareness and contextual understanding into AI models. By addressing these challenges, we can move closer to achieving translations that are not only accurate but also emotionally and culturally sensitive, bridging the gap between human and machine translation in the process of cross-cultural communication.

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