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Human vs. ChatGPT's translation strategies: A comparative study of religious terms in children's literature from English into Arabic

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ABSTRACT

Largely because of the emergence of neural machine translation, which has produced notable gains in translation quality, the field of machine translation has advanced quickly in recent years. At the same time, artificial intelligence has shown amazing advancements; its uses now include translation assistance, which draws great attention in many different sectors. As culture is one of the main problems faces the translators, religious terms and expression need to be carefully translated as they are very critical and sensitive. This paper compares the performance of GPT-3 with that of human translators by examining the techniques used by GPT-3 in translating religious and culturally specific items. Religious terms are taken from three children's stories addressing particular cultural concerns for this purpose. The translated religious terms and expressions extracted from the Arabic version for both professional human translator and GPT-3 have been analyzed and examined. The study categorizes the chosen items using established theoretical frameworks based on translation strategies: direct translation, retention, specification, generalization, substitution, and omission. The translation performance of GPT-3 is compared with that of the human translator using a descriptive analysis technique. The results indicate that GPT-3 appears to rely on a limited number of strategies, whereas the human translator employs a greater variety of techniques.

KEYWORDS: GPT-3, human translation, machine translation, translation strategies, religious terminology

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1. Introduction

The translation industry has a lengthy history and is perpetually progressing. The need for translation services has risen alongside the growth of globalization and cross-cultural interaction. At the moment, the translation industry is experiencing a transition towards digital technology. Conventional translation relies on human translators who typically possess a deep understanding of languages and relevant background knowledge, allowing them to produce translations of superior quality. Nonetheless, as technology develops, machine translation is becoming more and more prevalent, introducing significant changes to the translation industry.
Machine translation serves as an excellent resource for tackling extensive translation projects due to its affordability and effectiveness. However, compared to human translation, machine translation still lacks when it comes to precision and context awareness. Because they conduct thorough research beforehand and are aware of the right phrase to select in a given situation, human translators typically produce higher-quality translations. When handling distinct and creative texts, human translation offers incomparable benefits.

One could argue that both machine translation and conventional translation possess advantages. Human translation excels in quality and comprehensiveness, making it appropriate for situations where translation quality is essential, but machine translation offers advantages in terms of speed and cost that can be used for handling a significant amount of text in a short amount of time. The rise of artificial intelligence has made it possible to help humans with tasks, such as text translation, risk monitoring, and composing emails.
A remarkable example of progress in NLP and deep learning is the OpenAI-trained, powerful language model GPT-3. Language models like ChatGPT use extensive data sets to learn and recognize patterns in human language, allowing them to produce text that closely mimics human-written content. From chatbots that can comprehend and respond to natural language questions to language translation and even the generation of automated news articles, these models have demonstrated considerable potential across various applications (Hendy et al., 2023).

Since it necessitates a thorough understanding of the domain-specific vocabulary and the ability to convey the text's meaning faithfully, translating specialized content is a significant challenge for machine translation systems. As a result, the necessity to create machine translation systems that can consistently manage specialized content has increased. Translation of religious texts necessitates familiarity with religious vocabulary and concepts, in addition to a profound knowledge of the language and cultural background. Consequently, this poses a distinct problem for machine translation systems, such as GPT-3.

The intricacy and specificity of religious terms and expressions, along with the necessity for a coherent and cohesive translation that expresses the original text's intended meaning, can affect the precision and fluency of machine translation. Consequently, assessing GPT-3's ability in translating specialized religious texts from Arabic into English is a crucial initial step in understanding the potential and constraints of machine translation in this field. Using both quantitative and qualitative measures, this study aims at assessing the translation quality of GPT-3 language model and compare it with human translation. In addition to identifying aspects where human translators excel over machine translation systems, the study aims at providing an in-depth insight into the advantages and disadvantages of GPT-3's translations. The results of this research will influence the creation of machine translation systems capable of generating precise and efficient translations in this specialized field and enhance our comprehension of the possible applications and constraints of machine translation regarding for religious texts. Specifically, this study aims at tackling the following questions:

1. To what extent does GPT-3 accurately handle religious terms and expressions in children's literary texts?
2. What translation strategies do GPT-3 and human translators use to translate religious content in in children's literary texts?

2. Literature Review

2.1 Human translation

Human translation is a long-standing human endeavor that aims at fostering cultures and information in order to bring the world together. It involves the act of changing the text's intended meaning while translating it from

one language into another by a human translator (Munday, 2004). Because of its wider and well-known history, (HT) serves as a benchmark to assess the effectiveness of any (MT) tool. (Kenny, 2022). Rendall and Benjamin (1997) state that the translator's work may be clearly identified from (MT) systems because it is distinct and imaginative. Translators strive to communicate the original work's intended meaning in order to reflect the source text (ST) in the target text (TT) (Rendall & Benjamin, 1997). According to Dam and Zethsen (2016), in order to create imaginative work, translators must have a broad understanding of languages and cultures. The human translation process is intricate, with its complexity stemming from the numerous stages involved. According to Yamada (2009), a high-quality (HT) goes through three stages. All of the tasks that come before the actual process of translation, such as reading the text and looking for specific terms, are included in the initial stage. The second stage, entails translating the content from one language into another. The last stage involves editing and adjusting to meet the desired level of quality. Consequently, (HT) takes longer than (MT). Additionally, the intended audience and the translator's ideology are two of the multiple factors that affect human translation (Jun, 2019).

2.2 ChatGPT

OpenAI created the highly sophisticated artificial intelligence (AI) model known as ChatGPT, which was launched in November 2022. According to Godwin-Jones (2022), it is defined as the advancements of systems that can replicate human cognitive capacities. Siu (2023, p. 1) states that this artificial intelligence tool is "an innovative chatbot powered by advanced large language models such as GPT-3.5," it may threaten human employment in the near future because it seeks to substitute human intellect (Felten et al., 2023; Kannan & Munday, 2018). It can produce natural, contextual, and cohesive texts since it has been pre-trained on a vast amount of data (Jiao et al., 2023; Siu, 2023). This natural language processor is considered a highly powerful artificial intelligence system since it can imitate human language and provide human-like responses (Felten et al., 2023). It generates more valuable responses than Google (Cady et al., 2023; Sanz-Valdivieso and Lopez-Arroyo, 2023; Van Bulck & Moons, 2024). This natural language processor's accuracy is one of its essential features (Deng & Lin, 2023), and it can reduce expenses in various tasks. Moreover, AI technology serves as a versatile resource that supports open education by offering self-taught learners by providing feedback, research direction, essay assessment, and individualized support (Biswas, 2023; Firat, 2023; İpek et al., 2023). According to Kalla and Smith (2023), this tool significantly influences multiple areas, including editing, paraphrasing, and translation.

2.3 ChatGPT and translation

Diverse points of view have been expressed regarding the effectiveness of AI technology as a translation tool. Its translation is deemed both valuable and trustworthy by certain researchers (Gao et al., 2023; Larroyed, 2023; Peng et al., 2023; Siu, 2023). Larroyed (2023), for instance, highlights that this AI model is capable of producing a highly accurate and logical translation of text in a variety of languages. He clarifies thatits translation responses are coherent and precise, producing results that resemble the extraordinary levels of skill attained by highly qualified human translators. Furthermore, Siu (2023) and Gao et al. (2023) assert that AI technology can also produce various accurate translations for any specific text. According to Siu (2023), this AI technology can detect errors in the final translation and ensure that the intended meaning of the original text is accurately conveyed. Gao et al. (2023) further claim that the tool excels even better in terms of translation quality than existing MT systems. Peng et al. (2023) and Jiao et al. (2023) also support this result, arguing that AI technology has already reached a high level of proficiency as a translator, even for languages that are far apart.

However, several scholars have raised concerns that AI technology will not be able to translate some types of texts in an accurate way (Deng & Lin, 2023; Ghosh & Caliskan, 2023; Hendy et al., 2023; Khoshafah, 2023). Despite underscoring the significance of AI, Khoshafah (2023) believes that it is not a viable tool for various translation contents, including "legal documents, medical reports, scientific studies, religious, historical, and literary terminology" (p. 16). According to Hendy et al. (2023), AI technology offers highly competitive translation quality for languages with abundant resources, but it only shows limited effectiveness for languages

with scarce resources. The discrepancy in the models' performance across languages is another form of bias observed by Hendy et al. (2023). Lee et al. (2023) argue that human evaluation serves as the most accurate metric for assessing MT output because it has a longer and more extensive history in the translation industry than MT. Nevertheless, they claim that human evaluation is "costly and requires significant human labor, in addition to the difficulty of finding reliable bilingual annotators" (p. 1).

2.4 Religion in children's literature

An all- encompassing idea, culture comprises a range of components including customs, laws, knowledge, traditions, and arts. Many disciplines, such as translation, need a thorough knowledge of these components within a particular culture. Certainly, the precision and efficacy of translational efforts can be greatly affected by the subtleties of cultural context. This is where a thorough knowledge of cultural particularities becomes absolutely important; AI models may still find this difficult. Scholars have suggested several classifications of culture-specific items to aid this knowledge. Newmark (2010) classifies six categories as follows: ecology, public life, social life, personal life, customs and pursuits, and private passions, the last of which includes religion, music, poetry, and their corresponding social structures. Espindola and Vasconcellos (2004) provide a more detailed categorization, splitting culture-specific items into ten groups: toponyms, anthroponyms, types of entertainment, means of transportation, fictional characters, local institutions, measuring systems, food and drink, academic references, and religious celebrations. Klingberg (1986), too, suggests ten categories: literary references, foreign language components in the source text, allusions to mythology and popular beliefs, historical, religious, and political background, buildings, home furnishings and food, customs and practices, play and games, flora and fauna, personal names, titles, names of domestic animals and objects, geographical names, and weights and measures. On other words, there are many factors such as background knowledge, literary expertise, and cultural knowledge as essential factors for translators before they embark on their mission (Sayaheen et al., 2023). Often in the larger context of historical, religious, and political backgrounds, these frameworks explicitly recognize religion. These different categories highlight the complexity of culture and the many different ways it can be examined for translation purpose. Thus, even if ChatGPT and other artificial intelligence tools assist with translation, a thorough knowledge of cultural subtleties remains absolutely necessary to guarantee accuracy and cultural sensitivity. Pedersen's (2005) suggested six strategies to classify 'culture-specific items'. These strategies are retention, specification, direct translation, generalization, substitution, and omission. This study concentrates on the representation of religion in children's literature, recognizing its significance as a cultural component.

An examination of AI-powered translation systems in rendering the Farewell Sermon reveals that although AI can offer a basic draft, it lacks the emotional and spiritual depth of the source text without human intervention. Collectively, these studies taken together imply that although neural models and artificial intelligence show promise, they are still constrained in translating Arabic texts that require cultural, aesthetic, and contextual sensitivity.

Though difficulties remain, current research demonstrates that although machine learning—and especially NMT and transformer-based models like GPT-3—has greatly advanced machine translation, challenges persist, including the need for human supervision in nuanced or culturally sensitive settings, high computational requirements, and little support for low-resource languages. Overcoming these obstacles calls for multidisciplinary cooperation and creative ideas to model development and evaluation. Future studies should give more interpretable, equitable, and resource-efficient models priority together with improved evaluation systems combining human and automated knowledge.

3. Methodology

This paper employs a qualitative, comparative approach to examine the techniques used in translating religious terms and expressions from English to Arabic in children's literature. Specifically, it contrasts the translation techniques employed by professional human translators with those used by the GPT-3 language model, which is a state-of-the-art natural language processing tool. The paper underlines the need to maintain cultural subtleties even as it notes the growing influence of artificial intelligence in translation. When handling linguistically

and culturally complex religious material meant for young audiences, the main goal is to assess the efficacy, relevance, and cultural sensitivity of AI-generated translations in comparison to human translations. In the context of culturally sensitive translation, this approach enables a nuanced understanding of the possibilities and difficulties artificial intelligence presents.

3.1 Data Collection

The study's corpora are investigated using a descriptive analysis. The aim of the study is to examining the methods employed to translate the religious terms in Alice's Adventures in Wonderland into Arabic. Alice's Adventures in Wonderland, which was written by Lewis Carroll, translated from English into Arabic by Shakeer Naser Ad-Deen (2012), and published by Almarqiz Ath-thagafi Al-Arabi (Arab Cultural Centre) in Casablanca, Morocco, and Beirut, Lebanon, as well as a version translated by ChatGPT, provided the study's data. The novel was specifically chosen due to its considerable significance in children's literature. The novel possesses a distinctive language style that is full of similes, cultural phrases, and images. To provide the translator and the AI model with a more significant challenge, an English-Arabic literary piece was selected. The sample of the study is made up of the most representative examples randomly chosen from various parts of the English language novel. Literary translation is used because it is thought to be the most demanding and intricate type of translation (Rankawat, 2017; Yousef, 2012). "An art with many difficulties" is another way to describe it (Jun, 2019, p. 119).

3.2 Analytical Framework

A qualitative content analysis is used to assess and contrast the translation techniques. The study emphasizes identifying and classifying translation techniques — such as retention, specification, direct translation, generalization, substitution, and omission — by drawing on established translation studies theories, especially Pedersen's (2005) framework for analyzing "culture-specific items". This system offers a methodical way to examine the complexity of natural language in cross-cultural translation. Applying this framework, the research intends to shed light on how both human translators and artificial intelligence systems handle the complexity of cultural and religious concepts in translation.

4. Analysis and Discussion

This paper aims to provide qualitative and analytical description, not a statistical analysis. For the purpose of this study, three stories translated from English into Arabic were analyzed. The stories that were examined are, as follows:

Alice's Adventures in Wonderland, Hansel and Gretel, and Cinderella.

A- *Alice's Adventures in Wonderland*

Example (1)

Table 1: Translation of Religious Terms in Alice's Adventures in Wonderland. Example 1.

ST	AI	Human
I'll give them a new pair of boots every **Christmas.'**	سأهديهم زوجًا جديدًا من الأحذية في كل **عيد ميلاد.**	سوف أهديكما زوج حذاء جديد مع حلول كل **سنة ميلادية جديدة**

When Alice wanted to buy her feet a new pair of boots for Christmas, she used the religious term "Christmas." The Longman online dictionary defines Christmas as "a religious term that refers to the period around December 25th, when Christians celebrate the birth of Christ". The translator did not mention the meaning of Christmas as 'Eid almilad amajeed' (عيد الميلاد المجيد). Rather, the translator translated the word "Christmas" using the different term"New Year". The translator domesticated this term by substituting 'Christmas' with 'New Year' .

Conversely, ChatGPT used a direct translation strategy to translate the religious term "Christmas."

Example (2)

Table 2: Translation of Religious Terms in Alice's Adventures in Wonderland. Example 2.

ST	AI	Human
"William the Conqueror, whose cause was favored by the **pope**, was soon submitted to by the English, who wanted leaders, and had been of late much accustomed to usurpation and conquest.	"ويليام الفاتح، الذي نال قضيته تأييد **البابا**، خضع له الإنجليز سريعًا، إذ كانوا بحاجة إلى قادة، وكانوا في الآونة الأخيرة معتادين على الاغتصاب والغزو."	لقد استطاع غيوم الفاتح الذي كان يحظى بحماية **البابا** أن يخضع الانجليز الذين كانوا بحاجة الى قادة والذين اعتادوا منذ مدة على الاحتلال والغزو

The Merriam - online dictionary lists three definitions for the term "pope": First, and often capitalized, it refers to a prelate who as bishop of Rome is the head of the Roman Catholic Church; second, one that resembles a pope (as in authority); and third, the Eastern Orthodox or Coptic patriarch of Alexandria or a priest of an Eastern church. Both the translator and ChatGPT translated this religious term directly, without providing any explanation. Although most of the target readers are Muslims, this term is not new in Eastern countries. While some Christian terms are well-known to children in Arab countries, others, such as "Pope," require clarification.

Example (3)

Table 3: Translation of Religious Terms in Alice's Adventures in Wonderland. Example 3.

ST	AI	Human
"Edwin and Morcar, the earls of Mercia and Northumbria, declared for him: and even Stigand, the patriotic **archbishop** of Canterbury, found it advisable—"'	"إدوين وموركار، إيرلا مرسيا ونورثمبريا، أعلنا تأييدهما له، وحتى ستيغاند، **رئيس أساقفة** كانتربري الوطني، وجد من الحكمة أن—"	تحالف معه إدوين وموركار وكنث ميرسي ونورثمبوريا كما أن **أسقف** كانتربوري المعروف بوطنيته ستيقاند وجد ذلك مناسبًا.

According to the Merriam – Webester online dictionary, an "Archbishop" is a bishop at the head of an ecclesiastical province or one of equivalent honorary rank. Instead of using the Arabic equivalent, " ra'īs al-asāqifah" "رئيس الأساقفة", which ChatGPT uses, the translator in this tale used the word "usquf" to translate the religious term "archbishop." Although the target readers are children from a different religious background, the translator in this example employed the generalization strategy to translate this term. Since most Arab children are Muslims, the majority of them are unfamiliar with such a Christian term.

B- *Hansel and Gretel*

Examples (4 and5)

Table 4: Translation of Religious Terms in Hansel and Gretel. Example 4 and 5.

ST	AI	Human
heaven will take care of us.	**السماء** ستعتني بنا.	**الله** لن يتخلى عنا
and thought they were in **heaven**.	وظنّوا أنهم في **السماء**.	وظنا أنهما في **الجنة**

In short stories like the delightful children's tale 'Hansel and Gretel', religious terms and expressions are employed in different parts of the story. 'Hansel and Gretel' contains two instances of the use of religious terms. These examples highlight the importance of rendering religious expressions appropriately between the SL culture and

the corresponding TL culture of children's literature. The same religious ST term or expression may be used in different contexts in the children's story. However, in the following English (ST)-Arabic (TT) comparisons, the corresponding term may not be the same in the TT:

In the first example, ChatGPT opted for a direct strategy to translate the word "heaven," while the translator paraphrased it to denote its intended meaning, which is 'God will not abandon us'. Paraphrasing the English religious term "heaven" involves using domestication as a translation method to avoid using direct translation, which might be understood incorrectly by the target language (TL) recipients (Arabic) if the word 'heaven' is translated literally into ''assama" "السماء"or ''aljanna' "الجنة".

However, as «heaven» is culturally rooted , using "heaven" in the ST (i.e., the English version) might not cause any issues for the SL recipients. To convey sthe intended meaning in the TT (Arabic) culture, the translator chose to paraphrase "heaven" — since it a direct translation into "assama" or "aljanna" would not accurately reflect the original context.

In the second example, the word "heaven" is translated directly into "aljanna", which adequately conveys the intended message of the SL "paradise". In the religious context of Arabic, "aljanna" is the most suitable equivalent in translation and, therefore, the use of "aljanna" in the TL culture (religious Arabic culture) has been successfully employed.

c- *Cinderella*

Examples (6,7,8, and 9)

Table 5: Translation of Religious Terms in Hansel and Gretel. Example 6, 7, 8, and 9.

ST	AI	Human
"Dear child, when I am gone, continue good and **pious**, and **Heaven** will help you in every trouble, and I will be your **guardian angel**."	"اي طفلي العزيز، عندما أرحل، واصل أن تكون طيبًا و**تقيًّا**، وستساعدك **السماء** في كل محنة، وسأكون **ملاكك الحارس**."	اي بنتي الحبيبة ابقي **تقية** وطيبة كي يقف **الرب الرحيم** دائمًا معكي وسأتابعك من **عالي السماء أو أكون قريبة منكي**
and Cinderella went three times every day to **pray** and weep at the grave	وكانت سندريلا تذهب ثلاث مرات كل يوم **للصلاة** والبكاء عند القبر.	وصارت المشحرة تذهب ثلاث مرات يوميًا لتجلس تحت الشجرة وتبكي **وتصلي**
As the bridal party walked to **church**, they placed themselves, one on the right and the other on the left of the bride.	وعندما سار موكب الزفاف إلى **الكنيسة**، وضع أحدهم، اوالآخر على يمين العروس على يسارها.	وعندما دخل العريسان على **الكنيسة** لقد القران مشت الكبرى على يمين العروس والصغرى على يسارها.

In children's literature, most folktales contain some religious terms and expressions. The following example is taken from the well-known folktale " Cinderella": when Cinderella's mother was dying, she gave Cinderella her last advice, which included English (SL) religious terms as follows:

> ST: "Dear child, when I am gone, continue good and **pious**, and **Heaven** will help you in every trouble, and I will be your **guardian angel**".

The first word "pious" is translated by ChatGPT and the translator using a direct strategy, and its direct equivalent in Arabic is employed, which is 'taqiyyah. A person who is pious is very moral and religious, according to the Collins English Dictionary. However, according to the *Dictionary of Islamic terms and expressions*, this term encompasses a variety of ideas and meanings in the Arabic religious context, such as being God-fearing, righteous, and pious. Although translated directly from English into Arabic, the term's religious connotation

differs between ST and TT cultures.

Using the direct translation of "pious" almost conveyed the meaning of this religious word, which describes how Cinderella should act as a virtuous or devout person after her mother's passing. Therefore, the translator used the Arabic term for "pious," "taqiyyah." Based on the meaning of this word in Arabic linguistic and cultural context, however, this word might be interpreted as referring to an excessively devout person . In this case, the concept of being a decent person who acts morally may require explanatory translation or by using another Arabic term.

The second term, "heaven," is typically thought of as being high in the sky. According to the English dictionary and some religions, it is the place where God lives, where good people go after they die, and where everyone is always happy. ChatGPT employed a direct translation strategy. In the ST, an implied reference to "God" is made through the word "heaven" to express the intended message, as in the phrase "God in heaven will help Cinderella".

The translator used a substitution strategy when translating "heaven" into Arabic, paraphrasing it to express the intended meaning in the TT culture. Thus, a direct reference is made to "God" by using two words: "alrabbu", which literally means "The Lord" and 'al-Raḥīm', which means literally "The Merciful" or "The Compassionate". Both terms are used to refer to "God" in the TT religious culture, which conveyed the intended meaning without further explanation.

The third term, which is unique to the SL culture, is "guardian angel." The Collins English Dictionary defines this phrase as referring to a spirit that is believed to protect and guide a particular person. In the English-Arabic translation, ChatGPT used the direct method to translate this term, while the translator opted for a substitution strategy to substitute this religious expression with a more general Arabic phrase, which conveyed the intended meaning as follows: The ST culture recipients will understand this expression since it is based beliefs rooted in English religious traditions. However, in the TL culture, the translator chose to substitute the expression to be understood by the TT culture recipients. In both cases, the recipients of the SL and TL cultures can understand the meaning of this expression and understand the story.

The SL and TL cultures share the same expression in the following example. However, these expressions are different.

ST: and Cinderella went three times every day to **pray** and weep at the grave.

Both ChatGPT and the translator translated this expression directly, using the word "pray" in its literal meaning. The Collins Dictionary defines "pray" as "speaking to God in order to give thanks or to ask for help." *The Dictionary of Islamic words and expressions*, however, states that the most suitable meaning in Arabic is "the prayer that one performs, not just says," as in performing regular five daily prayers, which consist of standing, bowing, prostration, and sitting in a particular order and manner while reciting specific verbal prayers. This expression is used in the SL culture based on its meaning in the English dictionary, and the ST recipients can understand it. As for the context, it makes it difficult to understand the exact literal meaning of "pray." In the TT culture, this term means "supplication." In this context, if this word is translated literally, it will not convey the intended message of the ST culture. The recipients of the TT culture will, in other words, have an image of Cinderella performing the same prayer as the one they are familiar with in the Arabic religious culture. As a result, translating such religious expressions literally can affect the informative function in these kinds of stories, altering the story's overall comprehension.

The last example of the religious expressions in Cinderella is the term "**church**".

ST: As the bridal party walked to **church**, they placed themselves, one on the right and the other on the left of the bride

In this example, Chat-GPT and the translator translated the word "church" using its Arabic direct equivalent, the direct strategy. In the SL text, the English language recipients are familiar with the word "church". However, "church" in Arabic culture is not the typical venue place to have the bridal party. Therefore, since most of the TT receivers may not be familiar with this word, it may require further explanation. Even if they recognize the word "church," their conceptualization and understanding of it would be incomplete.

Nevertheless, some recipients of the Arabic religious culture may recognize this term, but they might not

be familiar with the idea of holding wedding ceremonies in churches as religious venue. The purpose of these stories is to introduce TT culture recipients to ST culture elemens; however, for them to fully understand such religious expressions and enjoy the story, the translator should either provide additional explanation or use alternative translation strategy.

The translation of religious terms from English to Arabic in three children's stories: Alice's Adventures in Wonderland, Hansel and Gretel, and Cinderellais qualitatively analyzed in this study. It highlights the differences in strategy use by comparing translations produced by an AI system and a human translator. The human translator consistently employs a variety of strategies beyond direct translation, such as substitution, domestication, generalization, and paraphrasing, to adapt religious terms in a way that aligns with the target audience's (Arab Muslim children) cultural and religious background. Consider the following examples:

1.The human translator translates "**Christmas**" as "**New Year**" to accommodate the cultural familiarity of the audience.
2. They use paraphrased or substituted terms like "God will not abandon us" instead of literal "**heaven**"."
3. They Adapt a more generic or culturally neutral word for "**archbishop**," such as "أسقف" (bishop).

On the other hand, the AI system applies several strategies without considering cultural or religious context, relying almost exclusively on literal (direct) translation. The AI system often renders religious terms like Christmas, pope, and heaven in ways that may be linguistically accurate but could be ambiguous, culturally inappropriate, or perplexing for Arab Muslim children. This includes:

a. Translating the word Christmas directly without making any cultural adaptation;
b. Using overly literal equivalents, such as the exact meaning of "heaven" and "archbishop", regardless of context .

According to the analysis of this study, the human translator employs a broader variety and more nuanced range of strategies, adapting religious allusions in a way that is appropriate and sensitive to the target audience. In contrast, the AI translator's overreliance on literal translation indicates insufficient cultural mediation and pragmatic awareness required for adapting children's literature containing religious contexts.

5. Conclusion

In conclusion, the current study the application of multiple translation strategies —including direct translation, retention, specification, substitution, generalization, and omission —in translating religious terms from English-language children's literature into Arabic. The findings show that human translators employ most of the strategies suggested in this study rather than adhering strictly to one. However, ChatGPT only uses the direct translation strategy when dealing with culture-specific items (CSIs). The contrast between machine and human translation techniques is one of the study's key findings.

Human translators demonstrate adaptability and strategically aware, employing diverse methods to manage difficult and culturally complex material. However, current AI-based translation systems, such as neural machine translation (NMT), primarily rely on direct translation techniques. . These systems often lack the necessary cultural and contextual awareness required to properly handle complex religious or culturally specific concepts, especially in children's literature

Future studies should investigate ways to enhance AI translation systems to handle religiously sensitive and culturally varied information. This could involve incorporating cultural and contextual metadata to the translation process or training models on parallel corpora that include a range of translation strategies. Comparative studies between human and AI translations could help clarify the constraints and possibilities of AI in translation, particularly in genres like children's literature where cultural appropriateness is essential. Additionally, studies could explore the viability of hybrid models that combine the speed and scalability of AI systems with human-guided strategy utilization.

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