



Examining and Post-Editing ChatGPT-4's Translation of Arabic Archaic Words Extracted from the Egyptian Folk Tale: Ali Al-Zeybak

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Abstract:

ChatGPT-4 has a profound impact on different aspects of life including translation. Archaic words are considered a phenomenon that exists in any language; translating these words could be problematic due to their unfamiliarity; this raises the question about the ability of Artificial Intelligence (AI) model ChatGPT-4 to accurately translate such words. The current study examines the efficiency of ChatGPT-4 of translating some selected problematic archaic words in one of the novels of the famous Egyptian folk tales: *Ali Al- Zeybak*, which was written by Farouk Khorshed; it deals with events that happened during Mamluk era. Moreover, the study adopts Newmark's translation strategies in examining the strategies used by ChatGPT-4 in providing the translation of the selected archaic words. In addition, a post-editing process is applied depending on different specialized historical Arabic dictionaries and other historical references to recognize the accurate translation of the selected words. The study might contribute to rendering better translation to the selected archaic words.

Keywords: Translation, Translation Strategies, Artificial Intelligence (AI) based Translation, ChatGPT-4, Archaic words, Folk tales.

Introduction:

Translators usually face many difficulties; translating archaic words is considered one of these difficulties due to their unfamiliarity because they are no longer used in modern texts; translating such words which are deeply rooted in history requires diachronic research. AI revolutionary developments necessitates that translators critically assess the AI capacity for rendering challenging lexical items, such as archaic words. *Ali Al- Zeybak* is one of the famous folk tales that come under the umbrella of the Egyptian folk tales; it is considered an equivalent to the famous English folk tale Robin Hood. *Ali Al- Zeybak* folk tale includes some archaic words, and this may be problematic for translators. Accordingly, the study on the one hand examines ChatGPT-4's translation of the selected terms as well as the employed strategies used to translate the selected words in the light of Newmark's strategies. On the other hand, AI tools prove advanced ability to translate different types of texts, but can these tools render archaic words accurately? The study might answer this question.

Significance of Study

The plethora of AI translation models raises the importance of examining AI capability of translating archaic words due to their unique nature. The translation strategies employed by ChatGPT-4 might need post-editing to render more accurate translation of the selected archaic words.

Research Questions

The study aims to answer the following questions:

- 1- To which extent is the accuracy of the translation from Arabic into English provided by ChatGPT-4 for the selected archaic words?
- 2- What are the translation strategies employed by ChatGPT-4 to translate the selected archaic words?
- 3- How far do post-edit strategys using Arabic dictionaries and historical references contribute to rendering more accurate translation of the selected archaic words?

Review of the Literature

Folk Tales

Foster (1967) sees that listening to books could sometimes be better than reading them. He states that tale telling of old folktales should be preferred over reading them. Ekici & Fedakar (2004) consider that folktales are a cultural object that should be preserved as a cultural heritage for future generations. Taylor (2000: 4) points out that the main objective of folktales

is the preservation of cultures. While Leimgruber (2010) sees that folktales help raise cultural awareness because they transfer not only tales but also cultures.

Archaic Words

Salomov (1983) states that "Each translation should be studied in relation to the period in which the translation was created, based on the principle of historicity. Failure to adhere to such rule can lead to serious errors or bias in assessing the quality of the translation, the translator's merits, and the main trends in translation of each period.". While Pasternak (1989) sees that words are turned to be outdated for specific reasons as follows: a) Reconstructing of objective reality, the desire to passing some objects and events; b) Intra-linguistic motives: such as changing or reconstructing the lexical system, the replacement of a noun by another one (archaisms); c) A change in the mental system of the community and in some concepts.

Madiyoroova (2021) defines archaic words as the use of a form of speech or writing that is no longer current. He asserts archaic words have many forms such as names for social relations and different outdated objects of material culture. Archaic words include the names of ancient instruments, types of weapons, different types of carriages, and historical instruments: battle axe, battering ram. Madiyoroova (2021) explains that archaic words are connected mainly to the genres of folklore, fairy tales, legends, and epics. While Ondar (2020) classifies archaic words into different groups: character's title or social status; names of weapons; words belong to household items; and names of human body organs.

Translation Strategies

Newmark (1988) points out that any successful translation should make sense and seem natural for the target reader. A strategy is a plan or systematic way that aims at achieving goal. Kim & Zhu (2019) define the concept of 'translation strategies' and show that 'translation strategies are the operations and strategies the translators apply mentally while translating. On the other hand, Newmark (1988) highlights the difference between the term *translation strategies*, and the term *translation methods*. Newmark deems that translation methods are related to whole texts, while translation strategies are related to sentences and language's smaller units. Many scholars set different classifications of translation strategies. For example, Vinay and Darbelnet (1995) identify two main translation strategies to deal with the translation process. The first strategy is direct strategy; it includes literal translation which follows the same order of the source language structures without considering the context. Calque is applied when the translator borrows an expression from the source text and translates all the original words literally. While borrowing means that the translator keeps the original word of the source language unchanged. The second strategy is the oblique translation. Oblique Translation includes **modulation**: This strategy seeks maintaining naturalness by using a phrase that is different in both the source and target language to convey the same idea. **Equivalence**: This strategy depends on achieving the same effect of the source language on the target language to present an elaborate structure between the source and target text. **Transposition**: is used when the translator shifts the word class, but he does not change the word meaning. Finally, **adaptation**: in this strategy the

translator adapts the original reference to a linguistic or cultural phenomenon that does exist in the target language to adapt the meaning according to the target readers' culture.

Along the same vein, Newmark (1988) adopts certain translation strategies as follows:

- (a) Word-for-word translation, and literal translation: In both, the translators have to follow the same order of the source language as the word structures, and they do not focus on the use of words and do not focus on the context.
- (b) Transference: which means transferring an SL word to the TL. Also, in the process of transliteration which means that the translator uses a SL word in TL without any change according to the difference of the alphabetic system of the two languages.
- (c) Naturalization: in this strategy the translator adapts the word of the SL to the normal pronunciation and morphology of the TL.
- (d) Cultural equivalent: this means presenting an equivalent cultural item of the SL to the TL.
- (e) Functional equivalent: using a culture-neutral word.
- (f) Descriptive equivalent: explaining the meaning of a culture-specific item in several words.
- (g) Synonymy: this strategy presents any near TL equivalent.
- (h) Through-translation: when the translator depends on calque or loan translation.
- (i) Shift or transposition: changing the grammar from SL to TL.
- (j) Modulation: This strategy seeks maintaining naturalness by using a phrase that is different in both the source and target language to convey the same idea.
- (k) Recognized translation: using an authentic translation of institutional terms.
- (l) Compensation: compensating for the meaning of one part of a sentence in another part.
- (m) Componential analysis: this means comparing the words of the source language to the words of the target language that have similar meaning although those words do not achieve the full equivalence by exposing their differing sense components.
- (n) Reduction and expansion: the translator adds or removes information from the source text according to reasons such as redundancy or giving extra information to the target reader.
- (o) Paraphrase: providing an explanation of a culture-specific item.
- (p) Couplets: employing two different strategies at the same time.
- (q) Notes: when the translator provides additional information to explain an item of the source text through the using of footnotes.

Translation and Artificial Intelligence

Haluza & Jungwirth (2023) confirms that AI helps people and improves society in several aspects, including providing healthcare with accurate diagnoses and treatment plans; AI also archives great progress in the field of education and by employing adaptive learning. Al-Antari (2023) mentions that AI algorithms can analyze medical images such as X-rays with excellent levels of accuracy, it also provides early discovery of different diseases and provide faster treatment. The revolutionary progress of AI is reflected in the translation process. Although AI platforms can save time for translators, the process of post-editing is also indispensable. Hutchins (2000) explains that this AI revolution has been evolved by the great advances in computational power, the availability of huge datasets, and the unprecedented improvements in machine learning algorithms.

Barrault et al (2023) point out that in recent years MT has evolved as a promising technology for achieving the process of bridging language barriers as well as facilitating cross-lingual communication, the interest in the application of AI techniques for MT has been growing. AI-models have achieved remarkable improvements in the area of translation quality; this is the reason for their widespread adoption in different domains such as healthcare, finance, and e-commerce. Barrault et al (2023) sustains that the assessment of the quality of AI-based translations can be applied in terms of adequacy, fluency, fidelity, and naturalness. Adequacy indicates the degree to which the translation transfers the intended meaning of the source text. Fluency indicates the degree of accuracy of the grammatical and linguistic content of the translation. While Fidelity indicated the degree to which the translation maintains the stylistic and cultural features of the ST. Finally, Naturalness indicates how the translation sounds idiomatic and natural for the target reader.

Läubli et al (2018) deem that unlike traditional human translation, AI-based translation has certain advantages; this includes increased speed, reduced cost, and scalability. Human evaluation also has certain advantages such as reliability and the ability to assess the quality of translation through detailed feedback. On the other hand, it is time-consuming and costly. Finally, the advantages of automatic evaluation metrics are their high speed and cost-effectiveness, although they may not always conform to human judgment. Hybrid evaluation methods achieve the combination of the strengths of both approaches, but they are still can be subjected to human bias. Kenny (2020) believes that despite significant progress of AI-based translation, there are still different challenges and limitations. AI translation is quickly developing and can completely change the way we deal with languages and translation. Among different challenges that AI may face are challenges such as the lack of cultural nuance, humor, and the need to preserve the context. However, AI translation tools continue to struggle with these difficulties.

ChatGPT-4

ChatGPT-4 is the selected AI model under study in the current research. It is universally known for its well-programmed and efficiency in dealing with different fields. In her article, Ortiz (2024) adheres that ChatGPT-4 is an AI tool with advanced natural language processing (NLP) that enables people to have conversations to implement various tasks. The [generative](#)

[AI](#) tool can answer questions and assist you with composing text, code, and contends that language processing to answer inquiries and responds to those inquiries. In translation processes, it is widely known for its quick response and depending on huge languages' databases which enable translators to save time and effort. On the other hand, ChatGPT-4 has limitations. For example, ChatGPT-4 deals with contextual awareness, but it does not provide the same level of confidence that human translators can provide. In addition, the privacy of confidential data is not guaranteed with ChatGPT-4 because it may expose this data. Along the same vein, Timothy (2023) determines six steps to use ChatGPT-4 effectively as translation tool: first, provide context. Second, declare the type of text. Third, use style transfer. Fourth, account for regional differences. Fifth, use summarized translation. Sixth, use a fine-tuned instance of ChatGPT-4.

Post-editing of Machine Translation

Post-editing of machine translation is the process of revising machine translated texts. Post-editors usually compare the source text to its machine translation to check the accuracy of content, accuracy terminology, formatting and style. Wagner (1985) cited in Vieira (2019) mentions two levels of post-editing: a 'rapid' and a 'full' post-editing level; he continues that the main differences between them are two factors: the time spent to finish the post-editing task and the final product quality. Yamada (2019: 87) clarifies that the emergence of Neural Machine Translation (NMT) is the reason to change specific aspects of the way of undertaking post-editing tasks. The recent studies post-editing of NMT reveal that translation students find a low error correction rate when they post-edit NMT. On the same direction, Van Egdom and Pluymaekers (2019) adopt four levels of post-editing: minimal, light, moderate and full. Translating literary texts via MT is a controversial issue. Moorkens *et al* (2018) certifies that literary translators prefer the from-scratch translation over post-editing. The usage of MT in literary post-editing reveals that the concept of the productivity of words-per time may not be accurate for this type of text as it is for texts of technical domains. This is because literary translation focuses on factors such as creativity and aesthetics in addition to the readers' experience more than the other different fields of translation.

Data of the Study

The study extracts the selected archaic words from the Egyptian folk tale Ali Al Zybak which tells the tale of an Egyptian vigilante who always helps poor people against the tyranny of Salah Al Kalby (the police leader) and fights the police men and tricks them for the sake of the Egyptian poor marginalized people. Accordingly, this folk tale includes many archaic words as a historical tale full of outdated objects, tools, and concepts. Rationale of data selection depends on the vagueness of the selected words even through the context, and this may mislead ChatGPT-4 in translating such words due to their problematic nature. The data is translated by ChatGPT-4 and post-edited according to some Arabic dictionaries such as Al-Ma'ani Dictionary (n.d.) and other Arabic historical references such as Alnagar (1981).

Research Methodology

The study focuses on examining the translation of archaic words of the Egyptian folktale Ali Al-Zeybak provided by ChatGPT-4 by comparing the translation rendered by ChatGPT-4 to the meaning of these terms in the consulted dictionaries and historical references to determine the accuracy of the translation. In addition, the study investigates the translation strategies employed by ChatGPT-4 to provide translation of the selected words. The study also consults some Arabic dictionaries and Arabic historical references to post-edit the translation provided by ChatGPT-4. The study examines and edits the strategies used by ChatGPT-4 in translating the selected archaic words in the light of Newmark's translation strategies (1988) which includes the following strategies that were applied by ChatGPT-4 and/or the researcher in the analysis of the current study: first, literal translation. Second, functional equivalent. Third, synonymy. Fourth, Cultural equivalent. Fifth, descriptive equivalent.

Findings and Discussion

The next table includes six columns: the first column contains the serial number of twenty sentences. The second column contains the selected archaic word within its context; the third column contains the translation provided by ChatGPT-4; the fourth column includes the evaluation of ChatGPT-4 translation; the fifth column contains the employed translation strategies of ChatGPT-4 translation; the sixth column contains post-edited translation; and the seventh column contains the employed translation strategies after post-editing.

NO .	Archaic Word	ChatGPT-4 Translation	Employed Translation Strategy	Post-edited Translation	Employed Translation Strategy
1	وسرت همهمة بين الفرسان والعباقي	"And a murmur passed among the knights and the horses."	Functional equivalent	And a murmur passed among the knights and the bandits."	Cultural equivalent
2	صاح الحمامي: أهلا بالمقدم سنقر ورجالة	" The pigeons shouted: Welcome Lieutenant Colonel	Literal translation	"The bath attendant shouted: Welcome Lieutenant Colonel Sangar and his men."	Descriptive equivalent

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		Sangar and his men."			
3	هذا هو صلاح الكلبى مقدم درك مصر	This is Salah Al-Kalbi, <u>the head of the Egyptian police.</u> "	Synonymy	Same translation	Synonymy
4	دوخ العيارين والفرسان حتى خافه الجميع	"He bewildered <u>the archers</u> and the knights until everyone feared him."	Functional equivalent	"He bewildered the vigilantes and the knights until everyone feared him."	Functional equivalent
5	وليتجنب العزيز شره عينه مقدما على الدرك	"And to avoid <u>the noble's</u> malice, he took the initiative in the police."	Literal translation	"And to avoid his malice, <u>the prime minister</u> appointed him as the police leader."	Functional equivalent
6	ولكنه انتبه على صوت الدلال وهو يصيح به	"But he noticed the voice of the <u>caller</u> as he shouted at him."	Functional equivalent	"But he noticed the voice of the broker as he shouted at him."	Synonymy

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7	أريد أن أصبح من خدمك ومشاديدك يا مقدم	"I want to become one of your servants and <u>supporters</u> , O Captain."	Synonymy	Same translation	Synonymy
8	وترددت لحظات ثم فتحت <u>الزنبيل</u> الذي كان حسن يحملة	"She hesitated for a moment and then opened <u>the</u> <u>bag</u> that Hassan was carrying."	Synonymy (معجم المعاني)	Same translation	Synonymy
9	ومضى يضحك والجنديان يفتحان <u>الباطية</u> ويسكبان الخمر في أقداح شرابهم	"He continued laughing while the two soldiers opened the container and poured wine into their drinking cups."	Synonymy	Same translation	Synonymy
10	وأسرع يرفع <u>المكبات</u> عن الصحون	"And he hurried to lift the <u>lids</u> off the plates."	Literal translation Literal translation	Same translation	Literal translation

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11	لابد ان تحضرها أيها الشاطر على	"You must bring it, <u>clever</u> Ali."		"You must bring it, vigilante Ali."	Functional equivalent
12	لابد وأن تحضر النفيلة لنقبلك كمقدم للدرك	"You must bring <u>the uniform</u> to accept you as a sergeant in the police."	Synonymy	"You must bring the trophy to accept you as a sergeant in the police."	Functional equivalent
13	ولكن هذا شوار عروس يا خالة فاطمة	"But this is a <u>bride's dowry</u> , Aunt Fatima."	Cultural equivalent	Same translation	Cultural equivalent
14	وأمامه مداعة طويلة ينبعث منها دخان كثيف	"And in front of him is a long <u>pipe</u> from which thick smoke is rising."	Cultural equivalent	"And in front of him is a long smoking water pipe from which thick smoke is rising."	Descriptive equivalent
15		"As if he wants to visit every shop and every <u>inn</u> ."	Functional equivalent (معجم المعاني)	Same translation	Functional equivalent

16	وكانما يريد زيارة كل دكان وكل خان	"And around him, the calls of the vendors and <u>the sounds of the drink sellers</u> rise."	Literal translation	"And around him, the calls of the vendors and the sounds of the castanets of the drink sellers rise."	Cultural equivalent
17	وحوله ترتفع نداءات الباعة وصنوج الشربلية	"And he was sitting warming himself in front of a fire <u>pit</u> ."	Cultural equivalent	Same translation	Literal translation
18	وكان جالسا يستدفئ أمام جورة النار	"I took <u>two skins</u> of water."	Cultural equivalent (معجم المعاني)	Same translation	Cultural equivalent
19	أخذت زقين من الماء	"Don't forget that I am a <u>farrier</u> , the son of a <u>farrier</u> ."	Literal translation (معجم المعاني)	Same translation	Cultural equivalent
20	لاتنس اننى بيطار ابن بيطار	"And his Grandfather was holding <u>his stick</u> , hitting him with it."		Same translation	Literal translation

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	وكان جده يمسك بمقرعته يضره بها				
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The first sentence وسرت هممة بين الفرسان والعياق is translated by ChatGPT-4 into "And a murmur passed among the knights and **the horses**"; ChatGPT-4 could not interpret the meaning of the archaic word العياق and mistranslated it into the **horses**, but according to (Al-Ma'ani Dictionary, n.d.) this archaic word means the people who use tricks such as disguising to steal from the rich to give the poor. Accordingly, the suggested translation is **bandits**, and the employed translation strategy is Cultural equivalent because the suggested translation depends on presenting an equivalent cultural item of the SL to TL.

The second sentence, صاح الحمى: أهلا بالمقدم سنقر ورجالة is translated by ChatGPT-4 into " **The pigeons** shouted: **Welcome Lieutenant Colonel Sangar and his men.**" ChatGPT-4 could not interpret the meaning of the archaic word الحمى and mistranslated it into **the pigeons** which mean doves, but this archaic word means **the man who serves the bathhouse**. ChatGPT-4 has employed Literal translation. The suggested translation is: **The bath attendant shouted: Welcome Lieutenant Colonel Sangar and his men.** And the employed translation strategy is Descriptive equivalent which occurs when the translator explains the meaning of a culture-specific item in several words.

The third sentence هذا هو صلاح الكلبى مقدم درك مصر is translated by ChatGPT-4 into " **This is Salah Al-Kalbi, the head of the Egyptian police.**" ChatGPT-4 transferred the meaning of the archaic position مقدم درك accurately into **the head of the Egyptian police**; the employed strategy by ChatGPT-4 is Synonymy which any near TL equivalent. This sentence shows clearly the role of context which enables ChatGPT-4 to translate the meaning accurately.

The fourth sentence دوخ العيارين والفرسان حتى خافه الجميع is translated by ChatGPT-4 into " **He bewildered the archers and the knights until everyone feared him.**" According to Alnagar (1981), ChatGPT-4 could not interpret the meaning of the archaic word العيارين and mistranslated it into the word **the archers** which means people who use arrows in wars, but this archaic word means **the vigilantes** who do not stick to the law and apply their own law to help the poor. Accordingly, the suggested translation is **the vigilantes**, and the employed translation strategy is Functional equivalent which occurs when the translator uses a culture-neutral word.

The fifth sentence **وليتجنب العزيز شره عينه مقدما على الدرك** is translated by ChatGPT-4 into **"And to avoid the noble's malice, he took the initiative in the police."** ChatGPT-4 could not interpret the meaning of the archaic word **العزيز** and mistranslated it into the word **the noble** which means a high ranked man, but according to the glorious Quran, this archaic word means the first minister. Accordingly, the suggested translation is **the prime minister**, and the employed translation strategy is Functional equivalent.

The sixth sentence **ولكنه انتبه على صوت الدلال وهو يصيح به** is translated by ChatGPT-4 into **"But he noticed the voice of the caller as he shouted at him."** ChatGPT-4 could not interpret the meaning of the archaic word **الدلال** and mistranslated it into the word **the caller** which means the man who announces the new. According to Kakhia, cited in (https://tarek.kakhia.org/dictionaries/Glossary_Ancient_and_Modern_Professions.Tarek_Kakhia) this archaic word means **the broker who works as a middleman in business deals** Accordingly, the suggested translation is **the broker**, and the employed translation strategy is Synonymy which presents any near TL equivalent.

The seventh sentence **يا مقدم أريد أن أصبح من خدمك ومشاديدك** is translated by ChatGPT-4 into **"I want to become one of your servants and supporters, O Captain."** ChatGPT-4 transferred the meaning of the archaic word **مشاديدك** accurately into **supporters** as the context shows that the word **مشاديدك** reflects the meaning of supporting; the strategy employed by ChatGPT-4 is Synonymy which presents any near TL equivalent.

The eighth sentence, **وترددت لحظات ثم فتحت الزنبيل الذى كان حسن يحمله** is translated by ChatGPT-4 into **"She hesitated for a moment and then opened the bag that Hassan was carrying."** ChatGPT-4 accurately transferred the meaning of the archaic word **الزنبيل** into **the bag** as the context shows that the word reflects the meaning of a container; The strategy employed by ChatGPT-4 is functional equivalent which occurs when the translator uses a culture-neutral word.

The ninth sentence **ومضى يضحك والجنديان يفتحان الباطية ويسكبان الخمر فى أقداح شرابهم** is translated by ChatGPT-4 into **"He continued laughing while the two soldiers opened the container and poured wine into their drinking cups."** ChatGPT-4 accurately transferred the meaning of the archaic word **الباطية** into **the container** as the context shows that the word reflects the meaning of something that can contain wine inside it; The strategy employed by ChatGPT-4 is functional equivalent which occurs when the translator uses a culture-neutral word.

The tenth sentence **أُسرع يرفع المكبات عن الصحون** is translated by ChatGPT-4 into **"And he hurried to lift the lids off the plates."** ChatGPT-4 accurately transferred the meaning of the archaic word **المكبات** into **the lids** as the context shows that the word reflects the meaning of plates' covers; The strategy employed by ChatGPT-4 is literal translation.

The eleventh sentence **لا بد ان تحضرها أيها الشاطر على** is translated by ChatGPT-4 into **"You must bring it, clever Ali."** ChatGPT-4 could not interpret the meaning of the archaic word **الشاطر** and mistranslated it by employing the strategy of literal translation into the word **clever**. According to Alnagar (1981), this archaic word was anciently used to describe a tricky vigilante who is used to breaking laws for the sake of achieving justice that does not exist. Accordingly, the suggested translation is **vigilante**, and the employed translation strategy is functional equivalent which occurs when the translator uses a culture-neutral word.

The twelfth sentence **لا بد وأن تحضر النفيلة لنقبك كمقدم للدرك** is translated by ChatGPT-4 into **"You must bring the uniform to accept you as a sergeant in the police."** ChatGPT-4 could not interpret the meaning of the archaic word **النفيلة** and mistranslated it into the word **uniform**, according to (Al-Ma'ani Dictionary, n.d.), this archaic word means **a prize is usually won after a battle**. Accordingly, the suggested translation is **the trophy**, and the employed translation strategy is Functional equivalent which occurs when the translator uses a culture-neutral word.

The thirteenth sentence **ولكن هذا شوار عروس يا خالة فاطمة** is translated by ChatGPT-4 into **"But this is a bride's dowry, Aunt Fatima."** ChatGPT-4 accurately transferred the meaning of the archaic word **شوار عروس** into **a bride's dowry** as the context shows that the word **شوار** is something the bride brings to her groom, and it has a cultural equivalent in English. The strategy employed by ChatGPT-4 is: cultural equivalent which occurs when the translator presents an equivalent cultural item of the SL to the TL.

The fourteenth sentence **وأمامه مداعة طويلة ينبعث منها دخان كثيف** is translated by ChatGPT-4 into **"And in front of him is a long pipe from which thick smoke is rising."** ChatGPT-4 employed the strategy of cultural equivalent translated the word **مداعة** into **pipe**, the researcher sees that this translation is accurate, but he suggests translating this archaic word into **smoking water pipe by employing** the strategy of descriptive equivalent which occurs when the translator explains the meaning of a culture-specific item in several words.

The fifteenth sentence خان وكل دكان زيارة كل is translated by ChatGPT-4 into **"As if he wants to visit every shop and every inn."**; the word خان has a cultural equivalent in English. Accordingly, ChatGPT-4 accurately transferred the meaning of the archaic word خان into inn. The strategy employed by ChatGPT-4 is cultural equivalent which occurs when the translator presents an equivalent cultural item of the SL to the TL.

The sixteenth sentence وحواله ترتفع نداءات الباعة وصنوج الشربتلية is translated by ChatGPT-4 into **"And around him, the calls of the vendors and the sounds of the drink sellers rise."** ChatGPT-4 could not interpret the meaning of the archaic word صنوج and mistranslated it into the word the sounds, but this archaic word means a musical instrument was used anciently by the drink sellers to grab people's attention around them. Accordingly, the suggested translation is the castanets, and the employed translation strategy is Synonymy which presents any near TL equivalent.

The seventeenth sentence وكان جالسا يستدفئ أمام جورة النار is translated by ChatGPT-4 into **"And he was sitting warming himself in front of a fire pit."** ChatGPT-4 accurately rendered the meaning of the archaic word جورة النار into a fire pit because the context shows the meaning directly; The strategy employed by ChatGPT-4 is literal translation.

The eighteenth sentence أخذت زقين من الماء is translated by ChatGPT-4 into **"I took two skins of water."** ChatGPT-4 accurately rendered the meaning of the archaic word زقين into two skins; the word زقين has a cultural equivalent in English. Accordingly, The strategy employed by ChatGPT-4 is cultural equivalent which occurs when the translator presents an equivalent cultural item of the SL to TL.

The nineteenth sentence لا تنس أنني بيطار ابن بيطار is translated by ChatGPT-4 into **"Don't forget that I am a farrier, the son of a farrier."** ChatGPT-4 accurately rendered the meaning of the archaic word بيطار (which means the person who is skilled at horses' treatment and caring) into farrier; the word بيطار has a cultural equivalent in English. Accordingly, The strategy employed by ChatGPT-4 is cultural equivalent which occurs when the translator presents an equivalent cultural item of the SL to the TL.

The twentieth sentence وكان جده يمسك بمقرعته يضربه بها is translated by ChatGPT-4 into **"And his**

Grandfather was holding his stick, hitting him with it." ChatGPT-4 accurately rendered the meaning of the archaic word مقرعته into his stick; the context shows that the word reflects the meaning of something that is usually used by old men to punish their grandsons. The strategy employed by ChatGPT-4 is literal translation.

Statistics of the Accuracy of ChatGPT-4 Translation

Translation by ChatGPT-4	Accuracy Percentage	Inaccuracy Percentage
100%	55%	45%

The study examines and evaluates the translation of twenty archaic words; the study reveals that ChatGPT-4 accurately translated eleven words and mistranslated nine words.

Statistics of the Translation Strategies Employed by ChatGPT-4

Translation Strategy	The Strategy's Employment Percentage	The Strategy's Accuracy Percentage	The Strategy's Inaccuracy Percentage
Cultural equivalent	20%	75%	25%
Literal translation	30%	50%	50%
Synonymy	25%	80%	20%
Functional equivalent	25%	20%	80%

The study shows that ChatGPT-4 employs some strategies of Newmark's translation model (1988) as follows: Cultural equivalent is employed in the translation of five words and three of them are accurately translated and one is mistranslated. Literal translation is employed in the translation of six words and three of them are accurately translated and three words are mistranslated. Synonymy is employed in the translation of five words and four of them are accurately translated and one is mistranslated. Functional equivalent is employed in the translation of five words and one of them is accurately translated and four words are mistranslated.

Statistics of the Translation strategies of the Suggested Translation

Translation Strategy	Employment Percentage
Cultural equivalent	25%

Literal translation	15%
Synonymy	25%
Functional equivalent	25%
Descriptive equivalent	10%

The suggested translation of the selected twenty archaic words employs some strategies of Newmark's translation model (1988) as follows: Cultural equivalent is employed in the translation of five words. Literal translation is employed in the translation of three words. Synonyms are employed in the translation of five words. Functional equivalent is employed in the translation of four words. Descriptive equivalent is employed in the translation of two words.

Conclusion

The study investigates and assesses the AI model ChatGPT-4's translation of the selected archaic words of the Egyptian folktale Ali Al-Zeybak from Arabic into English. The study reveals that ChatGPT-4 partially renders accurate translations of the selected archaic words as it accurately translated 55% of the selected words because these words were inferred easily through the context and/or there are cultural equivalents in English. Accordingly, the study illustrates that ChatGPT-4 can infer the accurate meaning of some archaic words according to the obviousness of the context, but in case of the absence of this context obviousness, it requires human post-editing by experienced translators to guarantee the accuracy of the archaic words' translation. Moreover, ChatGPT-4 applies specific strategies of Newmark's translation strategies by different percentage of frequency as follows: functional equivalent 25%, literal translation 30%, synonymy 25%, and cultural equivalent 20%. However, ChatGPT-4 applies the previous strategies by different percentage of accuracy as follows: synonymy 80%, cultural equivalent 75%, literal translation 50%, and Functional equivalent 20%. Finally, the post-editing process was applied to ChatGPT-4's translation and illustrated that the suggested translation strategies according to Newmark's translation model were as follows: cultural equivalent 25%, synonymy 25%, functional equivalent 20%, literal translation 15%, descriptive equivalent 10%. Accordingly, the study suggests that the translation of archaic words by ChatGPT-4 needs accurate post-editing by adopting specific strategies of Newmark's translation strategies respectively as follows: cultural equivalent, synonymy, functional equivalent, literal translation, descriptive equivalent.

فحص وتعديل ترجمة تشات جى بى تى 4 لترجمة الكلمات المهجورة فى السيرة الشعبية المصرية: على الزبيق

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المستخلص:

أثر ظهور تشات جى بى تى تأثيرا كبيرا على كل مناحى الحياة ومن ضمنها الترجمة. تشكل الكلمات المهجورة ظاهرة لغوية موجودة فى كل اللغات وتعد ترجمة هذه الكلمات من التحديات التى تواجه المترجمين نظرا لطبيعة هذه الكلمات وقدمها وعدم تعود استخدامها وهو ما يثير التساؤل عن قدرة برامج الذكاء الاصطناعى مثل تشات جى بى تى 4 على ترجمة مثل هذه الكلمات حيث يركز هذا البحث على تحديد قدرة تشات جى بى تى 4 على ترجمة بعض الكلمات المهجورة المختارة من رواية السيرة الشعبية المصرية التى كتبها فاروق خورشيد: على الزبيق. وتدور أحداثها فى فترة حكم المماليك كما يعتمد البحث الحالى على استراتيجيات نيومارك للترجمة لتحديد استراتيجيات الترجمة التى يستخدمها تشات جى بى تى 4 لترجمة الكلمات المهجورة المنتقاه من الرواية ويقوم البحث أيضا بتعديل ترجمة هذه الكلمات اعتمادا على عدة مراجع وقواميس تاريخية متخصصة للوصول لترجمة أكثر دقة لهذه الكلمات .

الكلمات المفتاحية: الترجمة، استراتيجيات الترجمة، الترجمة باستخدام أدوات الذكاء الاصطناعى، تشات جى بى تى 4، الكلمات المهجورة، السيرة الشعبية

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