

Translation Strategies of AI Models in Rendering Jordanian Proverbs into English: A Comparative Analysis of DeepSeek, Claude, and Grok

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Abstract

This study investigates the translation strategies used by three AI models, namely DeepSeek, Claude, and Grok, in rendering Jordanian proverbs into English. The study examines 190 Jordanian proverbs, producing a corpus of 570 AI-generated translations. It employs Baker's (1992) classification of idiom translation strategies as the main theoretical framework, supplemented by Literal Idiomatic Transfer (LIT) as an additional analytical category. A quantitative and qualitative approach was used to identify the frequency of the translation strategies and examine representative examples of how the models handled the linguistic, metaphorical, and cultural features of Jordanian proverbs. The findings showed that LIT was the dominant strategy, accounting for 76.14% of all translations, followed by translation by paraphrase at 17.54%. Idiomatic equivalence was relatively uncommon, with Strategy A accounting for 3.33% and Strategy B for 2.63%, while Strategies E and F each occurred only once (0.18%), and Strategy C was not observed. Clear differences also emerged among the models. Grok and DeepSeek relied heavily on LIT, at 88.95% and 85.26%, respectively, whereas Claude used LIT less frequently (54.21%) and showed a considerably stronger preference for paraphrase (38.42%). The qualitative findings further revealed that the models frequently preserved metaphorical and culturally embedded images without producing familiar English idioms. Paraphrase generally increased clarity but sometimes reduced the rhetorical imagery and proverbial form of the source expression. The findings demonstrate that preserving source imagery does not necessarily result in idiomatic equivalence and that AI models differ considerably in their strategic approaches to culturally embedded proverbial language. The study highlights the need for AI translation models that can better balance the preservation of cultural meaning and rhetorical imagery with natural and idiomatic expression in the target language.

Keywords: Jordanian proverbs; AI translation; translation strategies; Literal Idiomatic Transfer; DeepSeek; Claude; Grok; idiomatic equivalence.

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Introduction

The rapid development of artificial intelligence (AI) has changed many aspects of communication and language use, including translation. Translation is not limited to human translators anymore, as AI systems are utilized to translate various types of texts from one language to another ([Almaaytah & Alzobidy, 2023](#)). Such systems can achieve rapid translation times and frequently yield fluent and acceptable results. But translation is not just the substitution of words from one language for words in another. It is a complex linguistic and cognitive process that involves many important elements such as meaning, context, culture, and the features of the source text ([Alhumsi et al., 2025](#)). These factors become particularly important when AI systems deal with figurative and culturally embedded language.

Proverbs are one of the most difficult examples of this type of language. They are brief phrases that encapsulate experience, beliefs, values, and social knowledge from a community ([Mieder, 2004](#)). Their meanings can be beyond the literal meaning of their component words and rely on common culture. Thus, when you translate a proverb, it is not enough to make sure that you have a linguistically correct sentence. The translator has to be aware of its meaning and be able to decide how it can be translated into another language and culture. [Baker \(1992\)](#) elucidates that there are certain translation challenges with idiomatic and fixed expressions, as they may not be found in the same form and meaning in the target language.

This challenge is particularly pertinent for Arabic proverbs due to the links between Arabic proverbs and their cultural and social contexts. They may be religious, based on animals, or refer to family relations, traditional activities, and daily life. [Maalej \(2009\)](#) argues that Arabic proverbs are metaphorical and that transferring just the surface wording without the corresponding cultural knowledge and shared worldviews may prove to be ineffective in communicating the cultural message. The same problems have been detected with the translation of dialectal Arabic proverbs. For instance, literal translation of Saudi Najdi proverbs often resulted in awkward and culturally inappropriate English translations, which were found to be less successful than those that emphasised the intended meaning ([Alharbi, 2023](#)).

Jordanian proverbs are even more specific, as they have both the proverbial meaning and features of Jordanian Arabic and culture. The difficulties faced by translating Jordanian proverbs into English were reported by [Al-Azzam \(2018\)](#) due to cultural differences and the colloquial nature of Jordanian proverbs. Recently, [Al Rousan and Shatnawi \(2023\)](#) pointed out the language-related, translation, and comprehension issues in translated Jordanian Arabic Proverbs in English. These findings show that knowledge of the words of a Jordanian proverb does not necessarily lead to the knowledge of the message that the proverb transmits.

An important question, then, is how the transfer is to be carried out from Arabic to English in the case of a proverb. [Baker \(1992\)](#) offers a helpful model of this process by discussing strategies as follows: (1) using an idiom of similar meaning and form, (2) using an idiom of similar meaning but dissimilar form, (3) borrowing the source-language idiom, (4) paraphrasing, (5) omission. These are strategies that can be used in cases where there is no direct correspondence between source and target language. Previous studies have also revealed significant differences in the translation methods used for the translation of proverbs. [Dweik and Thalji \(2016\)](#) have, for example, identified cultural equivalence, literal translation, paraphrasing, and glossing in translations of proverbs, and [Jabak \(2022\)](#) revealed that proverb translation could be done at different levels of equivalence instead of literal and non-literal translation.

This becomes even more complex with the rise of generative AI, since each AI model can interpret figurative language differently. Previous studies often demonstrate that AI systems can produce coherent

translations but struggle with idiomatic and culturally specific meanings ([Al-Jarf, 2025](#); [Benyahia, 2025](#); [Obeidat et al., 2024](#)).

Although there is an increasing body of research, fewer studies have focused on the differences in translation strategies between newer generative AI models in the translation of Jordanian proverbs into English. The existing literature has largely been devoted to investigating the accuracy of the translation or errors made during the translation process, or to comparing the accuracy, errors, or performance of ChatGPT with that of conventional MT systems. There is a lack of comprehensive comparisons between DeepSeek, Claude, and Grok when it comes to handling culturally embedded Jordanian proverbial expressions. It is important to look at the ways strategies are used because two different ways of translating the same proverb can result in two ways that are both linguistically acceptable in English. One can keep the unique idiomatic language of the original metaphor, another can paraphrase the meaning, and another can find an established idiomatic English equivalent.

The present study therefore aims to identify and compare the translation strategies used by DeepSeek, Claude, and Grok in rendering Jordanian proverbs into English. The analysis relies on the classification of idiom translation strategies of [Baker \(1992\)](#) and adopts Alzobidy's (2026) recently introduced category, Literal Idiomatic Transfer (LIT). With LIT, the figurative or rhetorical image from the source language proverb is literally carried over into English, but without forming a new idiomatic expression that is known to the target language culture. The study aims to investigate the frequency of the various strategies that the three AI models adopt when dealing with culturally embedded proverbial language, as well as whether the different AI models exhibit specific strategies to translate Jordanian proverbs.

Nature and Translation of Jordanian Proverbs

Proverbs are a significant means of linguistic and cultural expression. They typically have brief and simple constructions, but they may express more than the sum of their constituent words. Proverbs are reflections of shared experience, social values, beliefs, and perspectives on daily living. Proverbs, according to [Mieder \(2004\)](#), are the knowledge and experiences of previous generations passed down through the ages. It is therefore necessary to not only know the literal meaning of a proverb, but also to have knowledge of the social and cultural context in which it is used.

This relationship between the language and the culture renders proverb translation difficult. A standard translation of a proverb is not an exact translation of Arabic words into English words. The translator has to grasp the meaning of the proverb in the source context and then translate it into the target context for the target reader. [Maalej \(2009\)](#) demonstrated that Arabic proverbs are carriers of cultural knowledge and common worldviews which are conveyed by metaphorical structures. While the same ideas may be found in other languages, the images that are used to convey them may vary widely. So, while the words and metaphors of an Arabic proverb may be preserved, so might its proverbial meaning be as well.

This is more evident in Jordanian Arabic, where there is a close relationship between proverbs and local language and culture. According to [Al-Azzam \(2018\)](#), the main challenge in translating Jordanian proverbs into English is cultural differences. The meanings behind them are frequently related to Jordanian social, historical, and cultural context, and the colloquial form adds to the difficulty of the language. Likewise, [Alarsan and Khan \(2025\)](#) found that Jordanian proverbs and idioms have culturally embedded meanings that are associated with the values, beliefs, history, and social experiences of Jordanian society. These expressions, therefore, become not just linguistic constructions, but also cultural representations.

This special relationship between the literal meaning and the proverbial meaning is significant in this context. It is possible for a Jordanian proverb to be grammatically translated into English but not to be a proverb for the English reader. The cultural association or conventional meaning of the source metaphor might not carry over to the target. In his research on Saudi Najdi proverbs, [Alharbi \(2023\)](#) also discovered that literal translation sometimes led to unnatural and unculturally acceptable translations in English. Dynamic equivalence and cultural substitutions were more effective in maintaining intended meaning and pragmatic function. This implies that the handling of the dialectal Arabic proverbs must take into consideration the meaning and cultural role, and not only the lexical correspondence of the proverb in the Arabic language.

When there is no direct proverbial correspondence, then different translation strategies can be used. [Dweik and Thalji \(2016\)](#) found cultural equivalence, literal translation, paraphrasing, and glossing as strategies employed by Jordanian novice translators. [Jabak \(2022\)](#) also demonstrated that the process of proverb translation can be presented in various levels of equivalence, from the closest proverb equivalence to literal and different forms of the expression with similar meaning, and/or literal translation and explanation. Likewise, [Farghal and Haider \(2024\)](#) concluded that literal translation is often employed when translating Arabic idiomatic expressions, while paraphrasing and functional equivalence have been generally more successful in keeping the pragmatic and cultural meaning.

These issues have become increasingly important with the use of AI for translation. An AI model might produce a grammatically sound English output sentence without being aware that the original expression is used in a proverb-like way. In the case of Jordanian proverbs, the question is not so much whether the AI can generate an understandable English sentence; it is about how the model decides to translate the proverbial expression. It can repeat the original metaphor, translate it into an English idiomatic equivalent, paraphrase its meaning, or use some other approach. Analysing these options is crucial for comprehending the relationship between linguistic form, proverbial meaning, and culture in the context of modern AI models.

Review of the Literature

The translation of proverbs has been a topic of great attention, as the meaning of the proverb is closely related to culture, context, and figurative language. In many instances, literal translation is not enough because Arabic proverbs convey cultural knowledge and shared worldviews through metaphorical structures ([Maalej, 2009](#)). There are similar problems identified in research on Jordanian proverbs. [Al-Azzam \(2018\)](#) has discovered that they are colloquial and culture-specific, causing issues in translation into English. [Al Kayed et al. \(2023\)](#) also found that 49.5% of the student translators did not translate selected Jordanian proverbs properly, mainly due to literal translation and lack of connotative meaning recognition. Similarly, [Al Rousan and Shatnawi \(2023\)](#) found linguistic, translation, and comprehension errors in the translations of Jordanian Arabic proverbs, which revealed that both linguistic and cultural competence are needed in order to translate the proverbs.

The strategies adopted to deal with proverbs and idiomatic expressions have also been considered. Jordanian translators employ four strategies, which [Dweik and Thalji \(2016\)](#) identified as cultural equivalence, literal translation, paraphrasing, and glossing. When translating into Arabic, a frequent means of translation was paraphrasing, as found by [Ali and Sayyied Al-Rushaidi \(2017\)](#), while literal translation sometimes led to inaccurate or meaningless translations. In the same way, [Farghal and Haider \(2024\)](#) found that literal translation was used frequently in the translation of Arabic metaphorical idioms, but its use

resulted in awkward or semantically distorted English expressions. The pragmatic meaning was more successfully communicated by paraphrasing and functional equivalence. The results confirm Baker's (1992) view that the choice of a translation strategy for idiomatic expressions could vary from one to another, depending on the presence of an equivalent in the target language.

However, recent studies have focused on AI-generated translation. There have been several studies that show outputs that seem grammatically correct and natural, but remain tricky for AI systems in the realm of figurative language and culture. The performance of GPT-3.5 in translating the hidden proverbs of the Qur'an has been found to be promising by [Fakhrabadi and Sharifabad \(2023\)](#), but culturally embedded and figurative meanings have been an issue. [El-Saadany \(2024\)](#) also identified some challenges in the Arabic translation of English proverbs by ChatGPT, especially when dealing with culturally rich meanings. [Benyahia \(2025\)](#) found that ChatGPT often generated fluent Arabic–English translations of idioms, but sometimes would translate literally for opaque and culturally specific expressions.

Importantly, studies, e.g., comparing different models, indicate that not all models will use the same translation approach. [Obeidat et al. \(2024\)](#) report that Google Translate used mostly literal translations (77%), while ChatGPT used a more balanced distribution of literal and sense-based translations, and Gemini relied more strongly on sense-based translations. Additionally, [Alshammari \(2026\)](#) discovered differences between ChatGPT and Gemini in their approach to translating proverbs: ChatGPT was more literal, while Gemini was more prone to cultural substitution. Likewise, [Al-Jarf \(2025\)](#) discovered that DeepSeek often translated metaphorical Arabic expressions in their literal sense. Among the different AI systems, [Paphonphat \(2026\)](#) noted that there was a wide range of errors from one AI to another, especially in ChatGPT, Gemini, DeepSeek, and Claude, with the most common being literal translation errors. The findings of these studies indicate that the model adopted could affect the processing and translation of figurative expressions.

Yet, there is an important gap in all this. Most of the previous studies have focused on ChatGPT, Google Translate, Gemini, or human-AI comparisons, with translation often being assessed in terms of accuracy, errors, fluency, cultural preservation, etc. A comparative study of the methods used by DeepSeek, Claude, and Grok for translating Jordanian proverbs to English is still very limited. Furthermore, Jordanian proverbs possess dialectal, figurative, and culturally specific elements that allow for a deeper analysis of the strategies of the newer generative AI models and how they compare or contrast with those of Jordanian proverbs. This study tackles this issue through an application of the translation strategy framework proposed by [Baker \(1992\)](#) and LIT by [Alzobidy \(2026\)](#).

Accordingly, the study addresses the following research question: What translation strategies are used by DeepSeek, Claude, and Grok in rendering Jordanian proverbs into English?

Translation Strategy Framework

This study employs a translation strategy framework to help identify and compare the translation strategies adopted by DeepSeek, Claude, and Grok for translating Jordanian proverbs into English. The framework integrates the classification of the strategies for idiom translation by [Baker \(1992\)](#) with the Literal Idiomatic Transfer (LIT) by [Alzobidy \(2026\)](#).

Baker's (1992) Classification of Idiom Translation Strategies

[Baker \(1992\)](#) came up with a popular classification of strategies for translating fixed expressions and idioms. The framework provides an explanation of how the translator can handle expressions for which

there is not always a direct correspondence between the source language and the target language. The strategy used may be different depending on the availability of an equivalent expression, linguistic and cultural differences between the two languages, and the context of the expression. Alkadirs and their research have also been used as an approach in subsequent research in the field of idiomatic and proverbial translation ([Kovács, 2016](#); [Rasul, 2018](#)). Hence, the present study used ChatGPT to determine the strategies adopted by the selected AI models in the translation of Jordanian proverbs into English.

Baker's (1992) classification includes six strategies. (A) Using an idiom of similar meaning and form involves selecting a target-language idiom that has approximately the same meaning and similar lexical form as the source expression. (B) Using an idiom of similar meaning but dissimilar form conveys the same general meaning through a target-language idiom that uses different words or imagery. (C) Borrowing the source language idiom retains the original expression in the target text. (D) Translation by paraphrase communicates the meaning through non-idiomatic wording when an appropriate idiomatic equivalent is unavailable or unsuitable. (E) Translation by omission of a play on idiom preserves part of the meaning while sacrificing the wordplay or double interpretation of the source expression. Finally, (F) omission of the entire idiom involves removing the idiomatic expression from the target rendering. These strategies provide the basic analytical framework for classifying the translations produced by the three AI models.

Literal Idiomatic Transfer (LIT)

Besides Baker's (1992) classification, the study embraces Literal Idiomatic Transfer (LIT) proposed by [Alzobidy \(2026\)](#). These are instances where the picture underlying a proverb is carried over into the target culture without forming a familiar idiomatic expression. An Arabic proverb might be rendered as, "The carpenter's door is broken." The metaphor and its basic meaning are preserved, but the resultant expression is not an idiomatic English phrase.

The main feature of LIT is the ability to retain the rhetorical image and metaphorical elements in the source proverb. While it may preserve the formal and semantic relationship to the original expression, the translated expression may not be culturally familiar and may sound like a literal translation to an English-language reader ([Alzobidy, 2026](#)). This is why it is different from Baker's approach of utilising an idiom of the same meaning and form. In LIT, the source image does not become an established English idiomatic expression, and in the latter, the translation is an English expression that is recognisable in the target language.

In the present study, LIT is combined with the six strategies used by Baker, allowing the identification of genuine target-language idiomatic equivalence and literal transfer of source-language proverbial imagery. This framework is then analysed and contrasted in terms of the translation strategies employed by the three models: DeepSeek, Claude, and Grok.

Materials and Methods

Research Design and Corpus

This research was a descriptive-comparative type with a quantitative and qualitative approach used to identify and compare the translation strategies of DeepSeek, Claude, and Grok in translating Jordanian proverbs into English. Purposive sampling was used in the study because the corpus had been selected and developed to suit the purpose of considering only proverbs that are known to and used by people in Jordan.

The total number of Jordanian Arabic proverbs used was 190, of which the majority were taken from oral and community sources. Traditional and commonly used proverbs were contributed by men and women in the Jordanian community over the age of 40 who were familiar with these proverbs. The researcher's familiarity with Jordanian proverbs also helped to compile the initial list, and their use in Jordan was confirmed with those who are familiar with their Jordanian usage. Expressions were part of the corpus that represented various aspects of everyday life, social relations, cultural experience, and traditional knowledge. The 190 proverbs were all retained for analysis.

Translation Procedure

The three AI models examined were DeepSeek-V4-Pro, Grok 4.5, and Claude Opus 5. Translation data were generated between 25 and 30 July 2026. Each of the 190 proverbs was submitted individually to each model under identical prompting conditions, producing 190 translations per model and a complete dataset of 570 English translations. The same standardised prompt was used for all three models:

“Translate the following Jordanian Arabic proverb into English. Preserve the original meaning as accurately as possible. Preserve the cultural meaning whenever possible. Produce only one English translation. Do not provide explanations, notes, or alternative translations. Output only the translated proverb. Jordanian proverb: [proverb].”

No explanation of the meaning or cultural context was provided. The models were not requested to revise their initial outputs, and the translations were recorded exactly as generated without post-editing.

Coding, Expert Review, and Data Analysis

All 570 translations were first analysed and coded into the seven categories of strategies. The whole coding was then checked by three evaluators who had specialisation in the areas of Translation, English, and Linguistics. The evaluators reviewed the researcher's classifications, and cases in which there were discrepancies were reclassified based on the analytical framework and discussed until a consensus was reached. Final classifications were then coded in a researcher-led manner, with expert feedback.

In quantitative analysis, frequencies and percentages were computed for each strategy for the entire dataset, and then separately for the DeepSeek, Claude, and Grok data. The full corpus was purposefully sampled for representative translations to demonstrate the most significant differences and patterns of translation strategy across the three models. The examples were provided for interpretation only, and the quantitative results are based upon the complete set of 570 translations.

Results and Discussion

The section introduces and analyses the translation strategies employed by the selected AI models to translate Jordanian proverbs into English. The results are analysed quantitatively and qualitatively. The quantitative analysis highlights the frequency and distribution of strategies across the three AI models, and the qualitative analysis focuses on representative examples, explaining how the major strategies were used.

Quantitative Analysis

The quantitative analysis explores the prevalence of translation patterns in the translations produced by the selected AI models, with a total of 570 translations. The frequencies and percentages were computed separately for each model to determine the most dominant strategies and similarities and differences between the models that are used in translating Jordanian proverbs.

Table 1: Distribution of Translation Strategies Across DeepSeek, Claude, and Grok

Code	Translation Strategy	AI Model	Frequency	Percentage (%)
A	Idiom of similar meaning and form	DeepSeek	7	3.68%
		Claude	8	4.21%
		Grok	4	2.11%
B	Idiom of similar meaning but dissimilar form	DeepSeek	6	3.16%
		Claude	5	2.63%
		Grok	4	2.11%
C	Borrowing the source-language idiom	DeepSeek	-	-
		Claude	-	-
		Grok	-	-
D	Translation by paraphrase	DeepSeek	14	7.37%
		Claude	73	38.42%
		Grok	13	6.84%
E	Omission of a play on an idiom	DeepSeek	1	0.53%
		Claude	-	-
		Grok	-	-
F	Omission of the entire idiom	DeepSeek	-	-
		Claude	1	0.53%
		Grok	-	-
LIT	Literal Idiomatic Transfer	DeepSeek	162	85.26%
		Claude	103	54.21%
		Grok	169	88.95%

As observed from [Table 1](#), the three AI models use multiple translation strategies in translating Jordanian Proverbs into English. The predominant strategy in the three models is Literal Idiomatic Transfer (LIT), representing 76.14% of all translations. It is followed by paraphrase (D) translation with 17.54%. Strategies A and B are significantly less common (3.33% and 2.63%, respectively), and strategies E and F are much less common (0.18%). None of the three models uses Strategy C. The results reveal that the AI models generally tend to maintain the rhetorical and metaphorical structure of Jordanian proverbs, literal idiomatic transfer, without substituting them with common English idiomatic equivalents. The three models include a strong preference for LIT in general, and paraphrase is the predominant alternative when the source proverb is not transferred literally.

Qualitative Analysis

The qualitative analysis explores the translation strategies identified in the quantitative results in more detail. To give representative examples, the entire body of texts was sampled to show the application of the three AI models with respect to the main strategies in translating Jordanian proverbs to English. The analysis focuses on the treatment of proverbial meaning, rhetorical imagery, and source-language structure across DeepSeek, Claude, and Grok.

Literal Idiomatic Transfer (LIT)

The most common strategy in the quantitative analysis was LIT. To examine this dominant pattern more closely, a purposive sample of 15 representative cases was chosen from the LIT translations. The examples were selected to give some variation within the thematic categories and among the three AI models and to

show cases where the rhetorical or metaphorical image was carried across from the source proverb unmodified into English without a "matching" English idiomatic equivalent.

Table 2: Selected Examples of Literal Idiomatic Transfer (LIT)

No.	Jordanian Proverb	AI Tool	English Translation
1	اللي ما يعرف الصقر يشويه.	DeepSeek	He who doesn't know the falcon roasts it.
2	السبع سبع، لو حظيته بققص.	Claude	A lion is a lion, even in a cage.
3	يا ما جاب الغراب لأمه.	Grok	Oh, what the crow brought to its mother.
4	أعطي الخبز لخبازه ولو أكل نصفه.	DeepSeek	Give the bread to its baker even if he eats half of it.
5	خبز وملح بيناتنا.	Claude	Bread and salt between us.
6	مثل صابونة الميت، منين ما قبضتها بتمزط.	Grok	Like the dead man's soap, wherever you grip it, it slips.
7	باب النجار مخلع.	Grok	The carpenter's door is broken.
8	لسانك حصانك، إن صنته صانك، وإن خنته خانك.	Claude	Your tongue is your steed; guard it, and it guards you; betray it, and it betrays you.
9	العين ما تعلو عن الحاجب.	Grok	The eye does not rise above the brow.
10	اللي يطيح من السماء، تتلاقاه الأرض.	DeepSeek	He who falls from the sky will be met by the earth.
11	قلب المؤمن دليله.	DeepSeek	The believer's heart is his guide.
12	الشكوى لغير الله مذلة.	Grok	Complaint to anyone but God is humiliation.
13	اشترى الجار قبل الدار.	Claude	Buy the neighbor before the house.
14	الكلام ما عليه جمر.	Claude	Words carry no customs duty.
15	ارفع قرشك الأبيض ليومك الأسود.	DeepSeek	Save your white penny for your black day.

[Table 2](#) shows the translated proverb using the LIT approach, whereby the rhetorical image and meaning of the source language are maintained while no familiar idiomatic form is created in the target language. Proverbs 1-3 demonstrate that the three AI models are faithful to the source text, maintaining the core animal metaphors of the falcon, lion and crow. The metaphoric elements are simply transferred into the English language, not replaced by familiar expressions in the target language. The translations thus retain the rhetorical structure of the Jordanian proverbs, although they are not idiomatic in English. This is a tendency that is consistent with [Alharbi \(2023\)](#), who asserted that literal translation of Saudi proverbs often left source imagery but rarely created culturally natural expressions in English. It also matches the findings of [Al-Jarf \(2025\)](#), which found that DeepSeek preferred to render words verbatim when faced with metaphorical Arabic expressions.

This is also seen in Proverbs 4–7. The central images of “bread”, “baker”, “salt”, “soap”, “carpenter” and “door” remain in the models. The metaphorical structure is reproduced almost verbatim in the English text, especially in Proverbs 6 and 7, which enables the original image to be seen in English. However, preserving these images does not necessarily make the resulting expressions established English proverbs. This distinction places them under LIT rather than any other strategy. [Farghal and Haider \(2024\)](#) similarly found that literal translation was frequently used for Arabic metaphorical idioms, although direct transfer could result in expressions that were less natural in the target language.

The rhetorical structure is even more apparent in the second half of Proverbs (8–10). The relationships between "tongue" and "steed", "eye" and "brow", and "sky" and "earth" are maintained in the models. In Proverb 8, Claude also maintains the parallel structure of guarding/betraying, closely following the rhetorical structure of the source expression. Hence, the translations retain much of the original form and the metaphorical elements, but are still very source-oriented. This finding aligns with the findings of [Benyahia \(2025\)](#), who noted that AI translations can be fluent but still literal when dealing with culturally specific Arabic phrases and/or figurative expressions.

The same sort of pattern is found in the models found in Proverbs 11–13, which retain culturally embedded religious and social features like the "believer's heart," "God," "neighbour," and "house. They stayed in, as these are the source elements that are culturally significant and not removed or explained. But direct preservation does not necessarily yield cultural or idiomatic equivalences in English. This result is parallel to the outcome of [Maalej \(2009\)](#), who argues that Arabic proverbs are encoded by cultural knowledge and social values, and that their transfer from one culture to another is more complex because of the metaphorical expressions used.

Proverbs 14 and 15 further illustrate this issue through the images of "customs duty," "white penny," and "black day." The models retain these culturally marked images rather than substituting more familiar English proverbial imagery. Proverb 15 is particularly revealing because the familiar English proverb "Save for a rainy day" could convey a closely related meaning, yet DeepSeek retains the original colour-based imagery. The result therefore represents LIT rather than an idiomatic equivalent under Strategy A. This pattern agrees with [Obeidat et al. \(2024\)](#), who found substantial reliance on literal translation in AI and machine translation of culturally embedded Arabic expressions.

Overall, the qualitative examples provide an explanation for why LIT made up 76.14% of all the translations—for all categories of proverbs, DeepSeek, Claude, and Grok consistently maintained the source metaphor, rhetorical image, and lexical structure without substituting them with common English idioms. This finding supports [Altarabin \(2025\)](#), who reports an AI-based translation that enhances the process of 'understanding text' while retaining the characteristics of literalism and limited consideration for cultural and pragmatic aspects. Therefore, the high level of LIT in the results indicates that, generally, the three models are able to preserve the imagery in the Jordanian proverbs; however, the preservation of the image does not mean the creation of an idiom that is natural and culturally familiar in the target language.

Translation by Paraphrase (D)

[Table 3](#) presents selected translations classified under Translation by Paraphrase (D). Paraphrase largely retains the original rhetorical image; it communicates the intended meaning by reformulating, explaining, or making implicit elements of the source proverb more explicit. This strategy can then shift emphasis from the source language, or metaphor, to the target language, clarity in English.

Table 3: Selected Examples of Translation by Paraphrase

No.	Jordanian Proverb	AI Model	English Translation
1	العيب من أهل العيب مش عيب.	Claude	Shame belongs to the shameless, not to those it falls upon.
2	فرعون فرعن من قلة ناس تضيه.	Claude	Pharaoh only became a tyrant because no one stood up to him.

3	من عرف رأس ماله باع واشترى.	DeepSeek	He who knows his capital buys and sells wisely.
4	ظفر وقلة زفر.	Grok	Extreme poverty and scarce means.
5	أطعم الفم، تستحي العين.	Claude	Feed the mouth, and the eye will be too shy to envy.
6	الله يكفيك شر المصدي لما تلمعه الدنيا.	DeepSeek	May God spare you the evil of the envious when the world smiles upon you.
7	شبعنا حكي.	DeepSeek	We've had enough talk.
8	بصلة المحب خروف.	Claude	An onion from a loved one tastes like lamb.
9	اختلط الحابل بالنابل.	Grok	The adept and the inept are all mixed up.
10	الكرسي دوار، لو دام لك لدام لغيرك.	Claude	The seat of power keeps turning; if it had stayed with one, it would have reached you too.

The use of paraphrase in Proverbs 1-3 is primarily through reformulation and explicitation. Claude makes the compact metaphoric statements of Proverbs 1 and 2 into more descriptive statements: "shame belongs to the shameless" (Proverb 1) and "because no one stood up to him" (Proverb 2). The whole idea of interpretation is included in the term "wisely," as in Proverb 3. The models in these cases convey an intended message rather than closely emulate the rhetorical structure of the source proverb. This agrees with Baker's (1992) opinion that paraphrase is especially effective when there is no good equivalent in the target language that would be idiomatic.

In Proverbs 4 and 7, the distancing from the source imagery seems to be even greater. Grok renders Proverb 4 as "Extreme poverty and scarce means," replacing the highly compressed Jordanian expression with a direct explanation. Similarly, DeepSeek translates Proverb 7 as "We've had enough talk," which eliminates the metaphorical meaning of being "full" and instead conveys its pragmatic meaning. In either case, the outcome is an English expression that's clearer and more natural, while the rhetorical element of the original is diminished. Also, paraphrase and functional rendering can be more successful than literal translation when the target expression is awkward or unclear as a result of direct transfer by the translator, as stated by Farghal and Haider (2024).

The models in Proverbs 5 and 8 make explicit the meanings that are implicit. In Proverb 5, Claude explains what he means by "envy" and clarifies the meaning of the relationship between the "mouth" and the "eye." This metaphorical comparison of an "onion" to a "lamb" becomes an explicit comparison in Proverb 8: "tastes like lamb. The target reader will appreciate the meaning more, but at the same time part of the short and metaphorical power of the Jordanian proverb is lost. This is similar to the results of (Benyahia, 2025) who showed that paraphrase is effective in conveying the meaning of culturally specific Arabic expressions when there is no direct idiomatic equivalent.

Proverbs 6, 9, and 10 demonstrate a more in-depth interpretation of culturally and/or metaphorically marked expressions. In Proverb 6, DeepSeek substitutes the culturally specific image with 'the envious', which is a direct identification of the kind of person that the source metaphor points to. In Proverb 9, Grok's cultural images are replaced by the explanatory contrast between "the adept" and "the inept." Claude draws out the political and social implication in the "chair" metaphor in Proverb 10. The models in these paragraphs illustrate the main role of paraphrase: in the main, the message to be interpreted is emphasized rather than the proverb's image. Obeidat et al. (2024) also observed such discrepancies in the use of literal and sense-based translation in Arabic expressions by AI systems.

Overall, paraphrase was the second most frequently used strategy, with 17.54% of the total translations, but this varied widely across the models. Claude used it in 38.42% of its translations, while DeepSeek and Grok used it in just 7.37% and 6.84% of their translations, respectively. For the qualitative examples, you'll see that Claude tends to rephrase or clarify the implied meanings, while DeepSeek and Grok tend to preserve source imagery more often via LIT. This result aligns with the study conducted by [Al-Kaabi et al. \(2024\)](#) and [Khoshafah \(2024\)](#), which revealed that there is a tendency for AI translation to switch between literal transfer and explanatory reformulation when translating culturally embedded and figurative Arabic expressions. So, paraphrasing can make the expression clearer and easier to understand, but it also may eliminate some of the rhetorical imagery and proverbial brevity of the Jordanian source expression.

Use of Idiomatic Equivalence (Strategies A and B)

When the AI models generate an English idiom or proverb that captures the meaning of the Jordanian source idiom, this is considered idiomatic equivalence. Like [Baker \(1992\)](#), Strategy A means the same thing but is expressed in a different form, while Strategy B means the same thing but is expressed in a different form. Some examples of selected items from each strategy are shown in [Table 4](#).

Table 4: Use of Idiomatic Equivalence in the English Translation of Jordanian Proverbs

No.	Jordanian Proverb	AI Model	English Translation	Strategy
1	كلب بنبح ما بعض.	DeepSeek	A barking dog doesn't bite.	A
		Claude		
2	ماشي على بيض.	Claude	Walking on eggshells.	B
4	من كان بيته من زجاج، لا يرمي الناس بالحجارة.	DeepSeek	He whose house is made of glass should not throw stones at people.	A
		Claude		
		Grok		
7	إذا كثروا الطباخين، بتحترق الطبخة.	DeepSeek	Too many cooks burn the pot.	B
		Claude	Too many cooks spoil the broth.	
13	الغريق يتعلق بقشة.	DeepSeek	The drowning man clings to a straw.	A
		Claude	A drowning man clutches at a straw.	
		Grok	The drowning man clings to a straw.	B

[Table 4](#) shows that the AI models were able, in some cases, to identify familiar or closely corresponding English proverbial expressions. In Proverb 1, DeepSeek and Claude produce “A barking dog doesn’t bite,” preserving both the meaning and the central image of the source proverb. A similar pattern appears in Proverb 4, where the “glass house” and “stones” are retained. These cases are examples of Strategy A and demonstrate that there can be a close correspondence of the kind that is proverbial between Arabic and English. This corroborates the results of [Hamdi et al. \(2023\)](#), who suggested that sometimes Arabic and English proverbs have the same themes and patterns.

Proverbs 2 and 7 demonstrate greater reformulation. Claude uses the familiar expression “Walking on eggshells” in Proverb 2, while the translations of Proverb 7 draw on the English proverb “Too many cooks spoil the broth.” These cases illustrate how the models can move away from direct source wording and

use a target-language idiomatic expression with a similar meaning. This is consistent with [Jabak \(2022\)](#), who argues that preserving proverbial meaning may require changes in linguistic form.

Proverb 13 is particularly notable because all three models recognise the same English proverbial image of a drowning person and a straw, although their lexical choices differ between “clutches” and “clings.” This shows that the models may reach the same idiomatic concept without producing exactly the same wording.

Overall, Strategies A and B were only adopted for 3.33% and 2.63% of the translations, respectively. They were used to a lesser extent than LIT and paraphrase, suggesting that it was not a common practice to produce an equivalent in English. This is consistent with [Benyahia \(2025\)](#), who concluded that idiom-to-idiom translation is still difficult for AI, especially for culturally specific idioms.

Rare and Unused Translation Strategies (C, E, and F)

Strategies C, E, and F were either absent or extremely rare in the dataset. Table 5 presents their occurrence across the three AI models.

Table 5: Rare and Unused Translation Strategies

Strategy	Jordanian Proverb	AI Model	English Translation
C	—	DeepSeek, Claude, and Grok	Not observed
E	ما عندي خيار وفقوس.	DeepSeek	I have no choice between cucumber and squash.
F		Claude	I have no other choice.

[Table 5](#) shows that Strategy C was not observed in any of the 570 translations, indicating that none of the models borrowed the Jordanian proverbs in their original Arabic form. Interestingly, only one occurrence of Strategy E (0.18%) or Strategy F (0.18%) was found for the same proverb. DeepSeek keeps the images of “cucumber” and “squash,” but it does not retain the original wordplay, so it is Strategy E. At the same time, Claude loses the original wordplay altogether, keeping only the images of “cucumber” and “squash,” which is Strategy F.

This contrast reveals that the same proverb can be used to produce different types of omission: DeepSeek only has the source imagery, and Claude only the overall meaning. This discovery aligns with Aghai's findings ([2024](#)) which suggests that AI translation can miss out on the figurative or culturally embedded aspects of text. Overall, the results indicate that borrowing and omission were not prevalent practices across the three models.

Comparative Patterns of Translation Strategy Use

The differences between the translation approaches of DeepSeek, Claude, and Grok are evident in the comparative analysis. While LIT was the most common approach for all three models, its use was highly variable. Claude employed LIT 54.21% of the time, while Grok used it most (88.95%). The tendency in this pattern suggests that Grok and DeepSeek were more closely interested in maintaining the lexical forms and rhetorical images of the Jordanian source proverbs.

Claude showed up with a very distinct pattern. Paraphrasing made up 38.42% of Claude's translations, while DeepSeek and Grok translated just 7.37% and 6.84%, respectively. The qualitative analysis revealed that Claude often rephrased implicit meanings, clarified the figurative components, or substituted culturally coded images and expressions with more explicit English equivalents. This indicates a higher likelihood of meaning-oriented reformulation as opposed to literal preservation of source imagery. Other variation with AI systems was reported by [Obeidat et al. \(2024\)](#), who found that there were significant differences between models in their use of literal and sense-based translation.

However, the level of idiomatic equivalence was minimal in all three models. Strategies A and B combined accounted for a small percentage of the translations, suggesting that the transfer of conventional English proverbial equivalents was unlikely to occur as frequently as the literal transfer or paraphrase. This result aligns with [Benyahia \(2025\)](#), who reported that while idiom-to-idiom translation works well for human translators, it is still difficult for AI.

Overall, the three models exhibit two core orientations: Grok and DeepSeek mostly maintain the source proverb with LIT, while Claude fuses literal transfer with significantly more paraphrase. The results thus show that this does not happen in the same way with AI models when translating Jordanian proverbs, even when they are presented with the same source material and translation rules.

Conclusions

In this study, the translation strategies that DeepSeek, Claude, and Grok employed in translating Jordanian proverbs into English were analyzed quantitatively and qualitatively. The analysis was based on the translation strategies proposed by Baker (1992), which we further expanded using LIT. Results indicated that there were significant differences between the three models of Artificial Intelligence, with some models retaining the linguistic and rhetorical structures of the Jordanian proverbs, while others changed the meaning of the proverbs through paraphrase.

Translation by paraphrase was the second most frequent strategy, accounting for 17.54% of the total 570 translations. Grok (88.95%) and DeepSeek (85.26%) particularly showed this tendency, with 54.21% of Claude's translations belonging to this category. The qualitative analysis revealed that the metaphors and culturally embedded images relating to animals, objects, religion, social relations, and other culturally specific images remained in the model with frequency. But these elements did not always lead to the formation of English idioms. Also, the translations frequently retained the structure and imagery of the proverb in Jordan, revealing the obstacles of direct transfer in order to produce natural idiomatic expression in the target language.

The second most frequent strategy (17.54% of the translations) was translation by paraphrase. However, its distribution was found to be significantly different between the models. In the case of paraphrase, Claude's translation frequency rate is 38.42%, making it the highest, while DeepSeek and Grok are 7.37% and 6.84%, respectively. Claude was thus more likely to clarify meanings that are only implicit in the original and to paraphrase metaphors and to make culturally embedded meanings more understandable to English readers. This usually resulted in better clarity, but at times led to a loss of imagery and proverbial compression in the source expression. The results are thus a trade-off between maintaining the source image and making the proverbial meaning more explicit.

Idiomatic equivalence occurred a lot less often. Strategy A was only used 3.33% of the time and Strategy B only 2.63% of the time for all translations. Despite this, these cases show that in some instances the models were able to detect certain existing or very similar English proverbs, especially when the meanings

of the proverbs or the metaphors in the source and target languages were similar. Variances also emerged between the different models in the way the same equivalent was represented, some of which made the representation of the same equivalent the traditional English form, while others presented the same meaning but in a different lexical expression.

Strategies C, E, and F played almost no role in the translations. Borrowing the source-language idiom (C) was completely absent, while Strategies E and F each occurred only once (0.18%). This means that the models generally tried to convey, clarify, or substitute Jordanian proverbs rather than retain them without translating or have them absent. The results show that there are two large strategic orientations: DeepSeek and Grok were very source-oriented as they made heavy use of LIT, while Claude used LIT in conjunction with significantly higher paraphrase tendencies.

The results showed that AI models do not use a uniform approach to handle culturally embedded proverbial language. They choose to preserve the source image by LIT or to transform meaning by paraphrasing or, rarely, finding an English expression that is idiomatic to their own culture. As such, the framework presented by [Baker \(1992\)](#) is still applicable to the study of proverb translation provided by AI. Concurrently, the considerable number of LIT cases illustrates the analytical utility of the extra category suggested by [Alzobidy \(2026\)](#), namely, the literal preservation of the proverbial imagery, as compared to the real target-language idiomatic equivalence.

The study contributes to research on AI translation by applying this expanded strategy framework to a relatively large corpus of 190 Jordanian proverbs and 570 AI-generated translations. It also includes evidence that retaining the meaning and metaphorical aspect of a proverb does not automatically mean that it will be rendered in an idiomatic way. The translation can be comprehensible and retain the source image yet be unfamiliar as a proverb in the target language.

The study is limited to three AI models: DeepSeek-V4-Pro, Claude Opus 5, and Grok 4.5, and to translations generated during a specific period. Over time, more recent models may generate the strategic patterns differently. The study is also limited to the Jordanian Arabic proverbs translated into English; therefore, its results cannot be generalised to other Arabic varieties, Arabic language pairs, and culturally embedded Arabic expressions automatically.

The results have implications for AI translation as well as NLP development. New emphasis needs to be placed on training models to differentiate between maintaining a metaphorical image and producing a culturally appropriate idiomatic equivalent. Models that use culturally relevant proverbs, figurative expressions, and their functional equivalents in multiple languages could help models go beyond over-transferring from their source. There is a need for future studies to compare other AI models and language combinations, as well as explore whether there is a positive impact when using culturally enriched prompts to incorporate the use of the target language's idiomatic equivalents and to ensure the source proverb's meaning and pragmatic function are conveyed.

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