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THE IMPACT OF AI ON TRANSLATING CULTURE-SPECIFIC ITEMS

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The rapid integration of artificial intelligence (AI) into translation practice has radically transformed the production and evaluation of translated texts. Although AI tools frequently generate fluent and grammatically acceptable translations, their ability to translate culture-specific items (CSIs) remains problematic due to cultural incongruity and conceptual non-equivalence between languages. This study investigates the impact of AI on translating Romanian CSIs from tourism texts into English. The aim is to identify the main types of Romanian CSIs occurring in authentic tourism texts and to analyse the accuracy of translation variants provided by the AI tool - Perplexity and machine translation tool - Google Translate when rendering these CSIs into English. Our main hypothesis is that AI provides acceptable translation equivalents in most cases, yet it fails when CSIs should be translated. The comparative analysis of Perplexity AI and Google Translate versions highlights a considerable difference as to the accuracy and quality of translation. The study confirms the continuing necessity of human post-editing in culture-sensitive translation tasks, in particular when applying Google Translate, whereas Perplexity proved to be more efficient and reliable.

Keywords: *Artificial intelligence (AI), culture-specific items (CSIs), translation strategies, post-editing, cultural transfer, translation quality, accuracy, tourism texts*

IMPACTUL IA ASUPRA TRADUCERII ELEMENTELOR CU SPECIFIC CULTURAL

Integrarea rapidă a inteligenței artificiale (IA) în practica traducerii a transformat radical producerea și evaluarea textelor traduse. Deși instrumentele de IA generează frecvent traduceri fluente și corecte din punct de vedere gramatical, capacitatea lor de a traduce elemente cu specific cultural rămâne problematică din cauza incongruenței culturale și a lipsei echivalenței conceptuale dintre limbi. Studiul investighează impactul IA asupra traducerii elementelor cu specific cultural din limba română în limba engleză. Scopul este de a identifica elementele cu specific cultural în limba română care apar în texte turistice autentice și de a analiza exactitatea variantelor de traducere furnizate de instrumentul de IA – Perplexity – și de instrumentul de traducere automată – Google Translate – în traducerea acestor elemente cu specific cultural în limba engleză. Ipoteza noastră este că IA oferă echivalente de traducere acceptabile în majoritatea cazurilor, însă eșuează atunci când elementele cu specific cultural necesită o traducere adecvată din punct de vedere cultural. Analiza comparativă a versiunilor generate de Perplexity AI și Google Translate evidențiază o anumită diferență în ceea ce privește exactitatea și calitatea traducerii. Studiul confirmă necesitatea continuă a post-editării de către un traducător uman în cazul traducerii elementelor cu specific cultural, în special în cazul utilizării Google Translate, în timp ce Perplexity s-a dovedit a fi mai eficient și mai fiabil.

Cuvinte-cheie: *Inteligență Artificială (IA), elemente cu specific cultural, strategii de traducere, post-editare, transfer cultural, calitatea traducerii, exactitate, texte turistice.*

Introduction

The advent of AI has influenced and changed all domains, including that of translation studies, the manner in which human translators perform translations. The shortcomings of existing AI-driven language models highlight the urgent need for a more culturally aware and linguistically inclusive approach. Traditional machine translation systems, while effective in word-to-word conversion, often fail to retain cultural and historical depth [1, p. 2]. The main objective of this study is to identify the types of CSIs in tourism texts and evaluate how accurately Perplexity AI and Google Translate render these CSIs into English.

The Concept of Culture-Specific Items

The notion of culture has been extensively explored by scholars from various fields including Translation Studies. One of the most quoted definitions of culture was formulated by the English anthropologist Edward Barnett Tylor: "Culture is that complex whole which includes knowledge, belief, art, morals, law, customs and any other capabilities and habits acquired by man as a member of society" [2, p. 27].

Translation Studies has long recognised that translation difficulties do not arise solely from linguistic structures but also from differences in cultural knowledge, social practices, value systems, and historically situated realities. Such items have been labelled in Translation Studies by various terms, like *culture-specific items, culture-specific concepts, cultural words, realia, culture-bound elements*. Approaching culture-specific translation problems, Mona Baker defines *non-equivalence at word level* as the situation in which "the target language has no direct equivalent for a word which occurs in the source text" and underlines that difficulties vary depending on type and context. In her opinion the source-language word may express a concept totally unknown in the target culture, and such concepts may be abstract or concrete, including a religious belief, a social custom or even a type of food. Culture-specificity is not limited to ethnographic objects; it also includes institutional roles and culturally embedded social practices which cannot be mapped onto the target-language without distortion [3, p. 18].

In 1996 Javier Franco Aixelá proposes the term culture-specific item as an umbrella category for textual elements that are strongly related to a given culture and therefore generate interpretive and translational difficulty when transferred to another linguistic and cultural system [4, p. 57]. In Aixelá's view, CSIs do not constitute a fixed set of lexical categories, but they emerge contextually within discourse depending on the extent to which a source text invokes its own cultural environment. From this perspective, translation problems are produced not only by linguistic non-equivalence, but also by cultural distance and differences in encyclopaedic knowledge between source and target audiences. Javier Franco Aixelá states that translators typically respond to CSIs by adopting

either conservation-oriented strategies, which preserve cultural foreignness and source-text visibility, or substitution-oriented strategies, which adapt the CSIs in order to improve accessibility and acceptability in the target culture. This framework foregrounds the translator as a cultural mediator who negotiates between fidelity to the source culture and accommodation to target readership expectations.

The distinguished scholar Peter Newmark remarks that most cultural words are easy to detect because they are associated with a particular language and cannot be literally translated, as literal transfer may distort meaning when cultural nuances are described in ordinary language. Peter Newmark proposes a set of cultural categories, indicating that foreign cultural words in the narrow sense may be classified into domains such as: (1) ecology, (2) material culture (artefacts)—including food, clothing, housing, transport, (3) social culture (work and leisure), (4) organisations, customs, activities, procedures, concepts (political/administrative, religious, artistic), and (5) gestures and habits [5, p. 96]. Newmark underlines the relation of cultural categories to translation decision-making by connecting the choice of procedures (transference, cultural equivalent, neutralisation, deletion, naturalization, etc.) to contextual factors such as purpose of text, motivation and cultural level of readership, importance of the referent, and setting.

Eugene Nida adopts a functional approach to culture-based translation problems and distinguishes two orientations: formal equivalence and dynamic equivalence. Formal equivalence focuses on matching content and form, this means that the message in the receptor culture is constantly compared with the message in the source culture to determine standards of accuracy and correctness [6, p. 129]. Dynamic equivalence, however, rests on the principle of equivalent effect and does not require the receptor to understand the source cultural patterns in order to comprehend the message. Nida's definition of dynamic equivalence is particularly relevant to the translation of culture-specific elements: a dynamic equivalent translation can be described as the closest natural equivalent to the source-language message, where natural implies cultural fit within the target-language and audience.

AI in Translation

AI has significantly enhanced translation quality, at the same time, it still demonstrates notable limitations when confronted with culture-bound meaning, figurative language, humor, and other context-dependent elements that require interpretive competence beyond purely linguistic pattern recognition. According to Mansour Amini et al., the quality of AI-based translations can be assessed in terms of adequacy, fluency, fidelity, and naturalness. Adequacy refers to the degree to which the translation conveys the intended meaning of the source text. Fluency refers to the degree to which the translation is grammatically correct and linguistically appropriate. Fidelity refers to the degree to which the translation preserves the stylistic and cultural features of the source text. Naturalness refers to the degree to which the translation sounds natural and idiomatic to native speakers of the target language. Consequently, the translator's role is undergoing a substantial transformation: rather than being replaced, translators are progressively repositioned as post-editors, quality evaluators, and cultural mediators who ensure accuracy, appropriateness, and ethical integrity in AI-generated output.

The authors point out several challenges and limitations of AI translation, like the lack of cultural nuance in the translated texts, difficulty in handling idiomatic and figurative language, as well as low-resource languages, where the lack of training data can severely affect the accuracy of translations. Another challenge refers to bias and fairness issues, AI translations may transfer biases from training data and reinforce stereotypes. Translation quality assessment is also difficult, evaluating AI translation remains a complex process. The limitation refers to the fact that AI translation models often excel at producing translations that match reference texts verbatim but may struggle with conveying the intended meaning accurately. One important challenge is the collaboration between human translation and AI. For translations to be accurate, culturally nuanced, and contextually relevant, it is crucial to find a correct balance between the talents of human linguists and the capabilities of AI models [7, p. 745].

Researchers Khalid Alqohfa and Salah Sanad point out that AI has become a real competitor with human translators. Nowadays computers are able to perform tasks that resemble human intellectual activity, particularly through AI models such as ChatGPT4 and DeepSeek, and neural machine translation (NMT) tools such as Reverso [8, p. 34]. The authors argue that these systems have significantly transformed the translation process by offering rapid, accessible, and high-volume translation capabilities, thus making AI-mediated translation an increasingly prominent solution for overcoming language barriers. However, their study emphasizes that the key limitation of AI translation lies in its inability to consistently capture linguistic nuance and cultural depth, particularly in complex corpora such as idiomatic expressions, which are deeply culture-bound and require interpretive competence beyond literal decoding. On the basis of their comparative analysis, the authors conclude that AI tools can perform satisfactorily when translating close-equivalent idioms, but they "fall short" when dealing with far equivalents due to literalism and reduced sensitivity to figurative meaning and cultural resonance. Consequently, they take the view that although AI has made major progress in translation efficiency and fluency, it cannot function as a reliable substitute for human translation in culturally and linguistically demanding tasks; rather, human supervision and evaluation remain essential because cultural adaptation, contextual appropriateness, and nonliteral meaning are still best handled through human interpretive competence.

Data Analysis

Our study is based on 96 examples of CSIs selected from tourism texts describing various destinations from the Republic of Moldova. The selection of CSIs was based on Peter Newmark's classification mentioned above, thus they relate to ecology, gastronomy, social culture, customs and activities, and proper names. The selected Romanian CSIs have been translated with the help of Google Translate and Perplexity AI. The aim was to observe the accuracy of translating CSIs from Romanian into English. When comparing the translations provided by Google Translate and Perplexity, the results show notable differences in cultural and contextual sensitivity, namely in the translation of gastronomic CSIs. Google Translate tends to produce direct translations that are semantically unreliable, containing mistranslations and distortions that indicate weak cultural grounding, for instance:

Example in Romanian	Translation by Google Translate	Translation by Perplexity AI
mămăligă	*malaga*	*polenta*
învârtită	*spinned*	*învârtită (Moldovan spit-roasted pie)*
șezători	*seats*	*evening gatherings (sewing bees)*
zeamă de pește	*fish juice*	*fish soup*
limba soacrei	*mother-in-law's tongue*	*mother-in-law's tongue eggplant with garlic sauce*
cornișoare cu dulceață	*cornichons with jam*	*jam horns*
cighiri cu legume	*cighiri with vegetables*	*cighiri with vegetables*
ghiveci	*pot*	*vegetable stew*
tocăniță	*stew*	*meat stew*
curechi scăzut cu carne	*low-fat curechi with meat*	*sour cabbage soup with meat*
izvar	*izvar*	*mulled wine*

By contrast, Perplexity AI provides more accurate functional equivalents in the target language, which reflects a more reader-oriented strategy combining partial retention with explicitation like in the case of *învârtită (Moldovan spit-roasted pie), sour cabbage soup with meat*, *mother-in-law's tongue eggplant with garlic sauce* or domestication like in *polenta* and *mulled wine* which actually do not reflect exactly the Romanian realia. None of the equivalents provided for *cornișoare cu dulceață* can be considered acceptable in English. At the same time, both tools provided similar and correct equivalents for the CSIs related to wine-making industry, like *vinul casei* as *house wine, zdrobitoare pentru struguri* as *grape crusher, teasc din lemn* as *wooden press, ploscă pentru vin* as *wine flask.* This fact can be explained by the fact that wine-making industry is one of the oldest activities of many nations, including Europe. We conclude that gastronomic CSIs were translated much better by Perplexity AI.

As to CSIs related to clothing, Google Translate has almost failed to render anything into English, but kept the original words, whereas Perplexity AI has recognized them and given relevant explanations, preserving in Romanian only the word *opinci*:

Example in Romanian	Translation by Google Translate	Translation by Perplexity AI
ie	*ie*	*Embroidered blouse; a traditional white linen women's shirt with intricate floral or geometric embroidery on the chest and sleeves.*
catrință	*catrință*	*Front apron; a narrow woolen apron worn by women in front, featuring bold colors like red, black, and white patterns.*
zăvorânc	*zăvorânc*	*Back apron; a wide white linen apron tied at the back to balance the front apron in women's attire. Headscarf*

năframă	*năframă*	*Headscarf or kerchief; a fine silk or cotton scarf tied around the head, adorned with elaborate embroidery.*
paftale	*paftale*	*Belt buckles; large ornate metal clasps (silver or brass) used to fasten aprons or belts.*
gubeon	*gubeon*	*Shoulder bag; a handmade woven satchel carried by men over the shoulder for daily essentials.*
cămașă bărbătească	*men's shirt*	*Men's shirt; a long, coarse linen tunic with a straight collar and subtle neck embroidery.*
dimie	*dimie*	*Trousers; wide woolen pants typical of southern Moldovan peasants.*
opinci	*opinci*	*Opinci; traditional rawhide sandals tied with leather thongs, common in rural areas.*

The significant difference between Google Translate (1 word out of 9 being translated into Romanian) and Perplexity AI correspondences (all 9 words rendered correctly into Romanian) suggests AI tool's ability to identify and translate CSIs related to Moldovan traditional clothing items. Perplexity AI has proved to be more efficient in handling cultural nuances. Cultural translations require a deeper level of understanding. Even with powerful AI tools, human verification remains essential to ensure translation fidelity and accuracy, especially for CSIs.

The analysis of culture-specific items shows that both Perplexity AI and Google Translate exhibit several of the major limitations commonly associated with AI translation, according to Mansour Amini et al. mentioned above. The most evident problem is the lack of cultural nuance, particularly in Google Translate, which frequently produces literal or misleading renderings of CSIs. Both tools also demonstrate difficulty conveying the intended meaning accurately when direct equivalents are absent, although Perplexity mitigates this through explanation and approximation. Overall, the findings strongly confirm the continued need for human–AI collaboration in culture-sensitive translation.

Conclusion

Translation functions as a form of intercultural communication, requiring mediation not only between different languages but also between distinct cultural systems. A key challenge within this process is the translation of CSIs, for which translators may employ a range of strategies in order to achieve an appropriate rendering in the target language. AI tools have radically transformed the translation sphere by accelerating the practical translation process and reshaping translators' roles. They deliver rapid, fluent outputs for high-volume tasks, enabling efficiency in linguistic transfers and freeing human professionals from repetitive work. AI shifts workflows from full manual drafting to streamlined production, where tools like Perplexity and Google Translate generate initial drafts from source texts. Human translators now prioritize post-editing to verify accuracy of their product. The practical study shows Perplexity AI significantly outperforming Google Translate in rendering CSIs from Romanian into English, particularly those related to gastronomy and traditional clothing, whereas specific wine-making words do not suffer mistranslation.

Taking into account the opinion expressed by Mansour Amini et al. that the quality of AI-based translations can be assessed in terms of adequacy, fluency, fidelity, and naturalness, we can state that fidelity suffers across both tools for CSIs, as literal outputs fail to preserve stylistic and cultural nuances, with Perplexity outperforming but still requiring correction. Both tools employed in the study produce grammatically correct, fluent drafts, scoring high on linguistic appropriateness for routine terms like wine-making CSIs. However, Google Translate's unnatural equivalents reduce idiomatic readability, whereas Perplexity's explicitation enhances naturalness for target readers.

The concluding observations based on the examples under study show that Perplexity produces fewer errors and displays greater ability to interpret cultural context in comparison with Google Translate, while both tools still require human verification. When dealing with culture-bound language, AI translation tools have proved to depend on human assistance and post-editing, because they often interpret words and phrases literally instead of capturing their cultural and connotative meanings.

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