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The New Era of Translation: Co-Evolution of Human and Machine Translation. The Integration of Artificial Intelligence (AI) in the Pre-Translation Phase of Economic News

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Abstract: In this paper, the author examines the co-evolution of human and machine translation within the field of economic journalism. Employing a comparative analysis of the pre-translation phase of economic news, integrating artificial and human intelligence, this research investigates the evolving role of human translators. The findings indicate that while AI-based translation systems have made substantial progress in handling economic terminology and time-sensitive content, human intervention remains indispensable for ensuring accuracy, preserving contextual meaning, and managing complex economic discourse. Furthermore, the study highlights the translator's shift from traditional linguistic mediation to post-editing and strategic decision-making in the pre-translation phase of economic news.

Keywords: human versus machine translation, pre-translation phase, comparative analysis, economic news.

1. Introduction

The description of translation has gradually been shaped by different perspectives different theorists and practitioners proposed. Firstly, translation was defined from an academic perspective as the scholar's activity "where the pre-eminence of the SL text is assumed de facto over any TL version" (Bassnett 2002, 76; Sărmașiu 2024, 22). Secondly, from the reader's perspective, it was characterized as "a means of helping the TL reader become the equal of the SL reader" (Bassnett 2002, 77; Sărmașiu 2024, 22). Thirdly, from the translator's perspective, it is viewed as a means of offering a pragmatic choice to the TL reader (Bassnett 2002, 77; Sărmașiu 2024, 22).

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All these particular descriptions emphasize that translation is an activity and a product at the same time (Sărmașiu 2024, 22), the fidelity to the source text and the communicative function acting jointly within significations and functions, history and contemporaneity, theory and practice, *old and new focus* (Nida and Taber 1982, 1).

But what happens when these perspectives are supplemented by a fourth: the AI's perspective? Many professionals in the field continue to adapt to the profound changes brought about by technological advancements, both at the level of the industry and within the practice of translation (Doherty 2016, 954; Dejica and Grigoras 2025, 165; Mali and Dejica 2025, 226). The pressing question is whether AI supports, interferes with, or replaces human translators. Rather than replacing professionals, AI has the capacity to augment their analytical abilities and improve decision-making processes (David 2025, 53-61). AI is incapable of fully replacing human translators because it struggles to comprehend contextual meaning, cultural nuances, and the emotional aspects inherent in communication (David 2025, 53-61).

Throughout this experiment, conducted together with first-year students from the Department of Applied Modern Languages (Faculty of Letters, UBB Cluj-Napoca), we aim to highlight the collaboration between the future human translator, who prioritizes both fidelity to the source text and the communicative function of the target text, and AI, regarded as a supportive tool guiding certain stages of the translation process. The experiment was carried out using economic news[i].

2. The integration of artificial intelligence (AI) in the translation of economic news. Digital (interactive) teaching-learning methods

The preparation of the translation of economic news constitutes a fundamental stage in the translation process, as it establishes the analytical and methodological framework for all subsequent decisions. Prior to producing the target text, students had to undertake a rigorous examination of the source text, ensuring a comprehensive understanding of its content, structure, communicative intention, or other extratextual and intratextual elements, known as T.O.S.T.A – Translation-Orientated Source Text Analysis (Nord 1991). This preparatory phase was particularly significant due to the terminological precision, conceptual density, and potential institutional implications that characterize such texts.

First of all, this phase was carried out through a contextual discussion, starting from some important points. One of the debated points was if students should preserve or adapt the journalist's style. In this specific context, we discussed about Newmark's classification, who distinguishes between semantic and communicative translation (1981, 39). While a semantic approach may favour fidelity to the original language/text, a communicative approach may prioritize clarity and accessibility for the target audience. Thus, students had to evaluate which orientation better serves the communicative purpose of their economic text.

Another important point raised during our theoretical talk was the specificity of grammatical and lexical conventions typical of the economic genre, due to the fact

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that economic news follows established discursive norms. What should students decide? One relevant option presented was to consult parallel texts in the target language in order to enable students to reproduce accepted terminological usage and syntactic patterns. A third point took into consideration was the cultural-linguistic elements that could appear in the source text and that do not have direct equivalents in the target text. We introduced Venuti's reflection (1995), who highlighted that the translator must negotiate between *domestication* and *foreignization*, deciding whether to adapt culture-bound elements or retain their foreign character. This decision should reflect both the communicative purpose of the text and the anticipated knowledge of the reader.

Structural organization represents another essential point of this preparatory phase. Economic news typically follows conventional layouts (summaries, data presentation, conclusions), so students should respect these structural norms in order to ensure coherence and facilitate reception within the professional context of the target culture. Also, consideration of the target audience remains indispensable. Students had to assess possible readers' expectations. A translation intended for professionals may preserve technical terminology, whereas one addressed to a wider audience may require explanations.

Furthermore, pragmatic elements must be independently verified. Statistical data, institutional references, and technical concepts should be cross-checked to ensure referential truth beyond the assumptions embedded in the source text. Finally, we concluded that students should maintain awareness of personal biases that may influence the interpretation of their economic news. Cultural background, ideological orientation, or social affiliation can subtly shape lexical and stylistic choices. A very important part of their role was to ensure that the translation faithfully conveyed the source text while fulfilling its intended function within the target context.

Based on the preliminary discussion and guided by the economic news employed in the experiment, a series of activities was designed to be executed concurrently by both students and AI. This approach aimed to foster effective collaboration and to enable well-founded conclusions at the appropriate stage of the study.

2.1. Interactive Pre-Translation Phase

One of the points raised in the preliminary discussion concerned the grammatical and lexical conventions specific to the journalistic and economic genres, and one of the options proposed by the students was consulting parallel texts. To broaden the range of possible approaches, a list of potential sources and resources that could be utilized was compiled, including: consulting official sources; consulting bilingual and monolingual dictionaries; consulting terminological databases; consulting style guidelines; consulting parallel corpora; consulting a specialist.

Building on this list, students, divided into four teams, were tasked with finding at least two examples for each type of source or resource mentioned. The solutions proposed by the first team were: *Consiliul Europei*[ii], *Autoritatea de*

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Supraveghere Financiară (ASF)[iii], *Ministerul Finanțelor Publice*[iv], *Banca Națională a României (BNR)*[v] – official sources; *dexonline – Dicționare ale limbii române*[vi], *Oxford Learner's Dictionaries*[vii], *Cambridge Dictionary*[viii], *WordReference.com*[ix] – monolingual and bilingual dictionaries; *IATE*[x] – terminological database; *Ghid de redactare interinstitutional (Comisia Europeană)*[xi] – style guidelines; *Euractiv.com*[xii], *Politico.eu*[xiii] – parallel corpora; *participating in Economics courses* – consulting a specialist. The solutions proposed by the second team were similar to the those of the first team, with a few exceptions: *Institutul European din România*[xiv] – style guidelines; *Euronews România*[xv], *caleaeuropeana.ro*[xvi] – parallel corpora; reading interviews – consulting a specialist. The new element introduced by the third team was *watching TV programs focused on economic and political-economic issues*, featuring the insights of experts and analysts. The fourth team proposed three new sources/resources: *Ministerul Economiei, Digitalizării, Antreprenoriatului și Turismului*[xvii] – official source; *Dicționar economic*[xviii] – monolingual and bilingual dictionaries; *LinkedIn* – consulting a specialist (online forums).

To incorporate the perspective of artificial intelligence into this experiment, each team was required to formulate a challenge in the form of a question: *What English and Romanian sources would you recommend for a translation activity of an economic news*?[xix] This approach not only encouraged participants to engage critically with the subject matter but also allowed for the integration of AI-driven analysis and insights. Following the responses received, we conducted an analysis of the sources proposed for the Romanian language in collaboration with all four teams. By comparing the results obtained by the 1st team, we observed that the AI platform proposed five different Romanian sources, among which we observed two identical examples – *Ministerul Finanțelor Publice* and *Banca Națională a României*, and three different sources – *Institutul Național de Statistică*[xx] (official source); *Ziarul Financiar*[xxi], *Revista Română de Economie*[xxii] (parallel corpora). The 2nd team obtained seven different Romanian sources, two of them being mentioned only by the AI platform: *Profit.ro*[xxiii] and *Capital.ro*[xxiv] (parallel corpora). The 3rd team received five different Romanian sources, the particular one being *Revista română de statistică*[xxv] (parallel corpora), while the 4th team did not find new sources/resources in the list proposed by the AI platform.

The results of the experiment demonstrate that, while artificial intelligence can process information rapidly and provide novel examples to support analysis, students ultimately proved more capable of identifying and categorizing a broader range of sources and resources. This ability was grounded in their engagement in prior discussions and their application of established theoretical concepts, emphasizing the value of human judgment and critical thinking. These findings suggest that, although AI can serve as a powerful analytical tool, it functions most effectively as a complement to, rather than a replacement for, the reasoning and discernment provided by learners themselves.

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2.2. Query Language Terminology

Within the same experiment, during the same pre-translation phase, the process of term extraction was also introduced as a complementary step intended to support the subsequent translation activity. Initially, because the task was designed as an applied classroom exercise, the teams were instructed to perform the extraction on a single paragraph only, allowing them to focus on identifying specialized terminology, potential translation challenges, and recurring lexical units within a limited textual segment. This preliminary step had a primarily pedagogical function, enabling the instructor to demonstrate the principles of systematic term identification while also allowing students to practice the methodological aspects of terminology work in a controlled context. During the classroom session, teams were guided to recognize candidate terms, distinguish between general vocabulary and domain-specific terminology, and consider the relevance of contextual information when isolating terminological units.

Following the term extraction process, the teams identified: 1st team – 6 terms (*sanctions; restrictive measures; import bans; export restrictions; SWIFT international payments system; oil price cap*); 2nd teams – one term (*sanctions*); 3rd team – 5 terms (*Eurozone, frozen Russian assets; financial stability; (to) loan; profit*); 4th team – 6 terms (*profit; assets; (to) finance; (to) loan; sanction policy; import; export*).

The same task was subsequently assigned to artificial intelligence platform, and the results proved to be both similar and different at the same time. While the first team identified six terms, the artificial intelligence system identified twelve, all six of the terms selected by the team being included in the AI-generated list, to which six additional terms were added (*EU envoys; seaborne oil; EU finance ministers; sanctions policy, sanctions package; circumvention*). In the case of the second team, which identified only one term from the economic domain, the situation was similar: the artificial intelligence system also identified this term, while additionally generating a list of specialized terms used in politics/foreign affairs. The case of the third team was particularly interesting to analyse: although the task requirements were the same as for the other teams, the artificial intelligence system did not understand the assignment and generated a list of institutions and prominent individuals relevant to the European economic sphere. When the exercise was repeated with a rephrased prompt, the artificial intelligence system successfully identified three terms: *sanctions, frozen assets, and confiscation*. For the fourth team, the artificial intelligence system identified a total of five terms (*assets, sanctions policy, imports, exports, sanctions package*).

After completing the guided exercise on the selected paragraph, students were asked to continue the term extraction process individually, applying the same methodological principles to the rest of the text outside the classroom. This individual continuation of the task allowed them to consolidate the analytical skills introduced during the course session and to engage more thoroughly with the textual material. The results of this extended term extraction were subsequently reviewed and

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validated during a later meeting, where the compiled lists of candidate terms were collectively discussed, refined, and, where necessary, corrected. This final validation stage ensured methodological consistency and allowed the instructor to address any ambiguities or difficulties encountered by the students during their independent work. Consequently, the exercise functioned both as a guided introduction to terminology extraction and as an opportunity for students to apply the method autonomously, while still benefiting from collective feedback and validation in a subsequent instructional session.

The experiment once again demonstrated that human expertise currently surpasses the capabilities of artificial intelligence in the task of specialized term extraction. This is particularly evident in the cases of the third and fourth teams, where the students' contributions were substantial and essential for achieving accurate and contextually appropriate results. In these instances, the AI either misunderstood the task or produced outputs that, although extensive, lacked precision and relevance, highlighting the indispensable role of human judgment and domain knowledge. Indeed, partial overlaps were observed in the results produced by the first and second teams, where some terms identified by the AI coincided with those selected by the students. While this indicates that AI can sometimes approximate human reasoning, it also underscores the system's limitations, as its outputs still require careful evaluation and refinement. Overall, the findings suggest that, although AI can serve as a supportive tool in terminological work, it cannot fully replace the analytical skills, contextual understanding, and nuanced decision-making provided by human participants. Therefore, for tasks involving specialized language and domain-specific knowledge, a combined approach—leveraging human expertise alongside AI assistance—remains necessary, and further development of AI methodologies is required to improve their reliability and relevance in applied linguistic contexts.

2.3. Specialised translation: in need of revision

The experiment continued with a third activity specific to the pre-translation phase. Based on the list of sources and resources presented in Section 2.1, the teams were asked to find equivalents for their initial lists. Once the equivalents were identified, the teams were asked to request the same task from the artificial intelligence platform in order to compare the results obtained. In the case of the first team, four of the six terms from the initial list were found to have different translations: *import bans* [xxvi](1st team: interdicții de import/AI: interdicții la import); *export restrictions*[xxvii] (1st team: restricții de export/AI: restricții la export); *SWIFT international payments system*[xxviii] (1st team: sistem international de plată SWIFT/AI: sistem international de plăți SWIFT); *oil price cap*[xxix] (1st team: plafon al prețului la carburanți/AI: plafon de preț pentru petrol). In the case of the third and fourth teams, the equivalents proposed by the artificial intelligence platform coincided with those suggested by the students.

As a natural continuation of the exercise, the activity progressed into two additional sub-stages aimed at reinforcing the accuracy and reliability of the extracted terms. The first sub-stage (*1, 2, 3...Validating using Different Tools*) involved the

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validation of terms using at least three different types of sources for each word. This approach ensured that students critically assessed the terms' usage and meaning across diverse contexts, fostering a more comprehensive understanding of their domain-specific applications. By consulting dictionaries, specialized glossaries, and authoritative online or printed references, the teams were able to check the relevance and correctness of their initial selections. The second sub-stage incorporated the guidance of a domain specialist (*Specialists for a third opinion*), who provided expert feedback on the appropriateness and precision of the terms chosen. This step was crucial for bridging any gaps between theoretical knowledge and practical usage, allowing students to refine their selections based on professional insight. Together, these two sub-stages enhanced both the methodological rigor and the pedagogical value of the exercise. They underscored the importance of combining independent research, critical evaluation, and expert validation in terminological work, while simultaneously highlighting the complementary role of human judgment and specialist knowledge in ensuring high-quality results in pre-translation preparation.

After completing all activities associated with the pre-translation phase, the translation and post-translation stages were conducted, maintaining the same collaborative approach between students and the artificial intelligence platform[xxx].

3. Conclusion

The experiment demonstrated that human expertise remains essential in the pre-translation phase of economic news texts. While artificial intelligence can generate candidate terms and propose equivalents, its outputs often vary in relevance and accuracy, requiring human evaluation and validation. The exercise highlighted the importance of structured pre-translation activities, including term extraction, identification of equivalents, validation using multiple sources, and consultation with a domain specialist. These activities allowed participants to critically assess linguistic choices, verify meanings in context, and refine selections based on usage patterns. Although AI occasionally produced results similar to human decisions, inconsistencies and misinterpretations emphasized the necessity of human oversight. Also, it is clear that, in order to carry out pre-translation activities successfully, students need to engage in comprehensive research, possess a solid understanding of the subject matter, and be well-prepared both linguistically and methodologically. The findings underline that, while AI can serve as a supportive tool to streamline certain stages of the process, high-quality translation and pre-translation work in economic news rely fundamentally on the analytical skills, contextual understanding, and domain knowledge of human translators. Overall, the experiment confirms that a collaborative approach—combining human judgment with AI assistance—offers the most reliable outcomes, reinforcing the complementary nature of technological support and human expertise in translation practice.

References

Bassnett, Susan. 2002. *Translation Studies*. London: Routledge.

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David, Nehemiah Boluwatife. 2025. “The Future of Translation and Interpretation: Integrating AI with Human Expertise for Optimal Results.” *International Journal of Applied Linguistics and Translation* 11 (2): 53–61. https://doi.org/10.11648/j.ijalt.20251102.11.

Dejica, Daniel, and Patricia Grigoraș. 2025. “Reflective Voices in Specialized Translation: A TAP-Based Study of Student Strategies and AI Evaluation.” *Scientific Bulletin of the Politehnica University of Timișoara: Transactions on Modern Languages* 24 (1): 165–171. Timișoara: Editura Politehnica.

Doherty, Stephen. 2016. “The Impact of Translation Technologies on the Process and Product of Translation.” *International Journal of Communication* 10: 947–969. https://www.researchgate.net/publication/284725157_The_impact_of_translation_technologies_on_the_process_and_product_of_translation.

Mali, Izabella, and Daniel Dejica. 2025. “Localization, Technology and AI: Transforming Global Communication.” *Studii de Știință și Cultură* 21 (3): 226–237. Arad: Universitatea de Vest „Vasile Goldiș”.

Newmark, Peter. 1981. *Approaches to Translation*. New York: Prentice Hall International.

Nida, Eugene A., and Charles R. Taber. 1982. *The Theory and Practice of Translation*. Leiden: Brill.

Nord, Christiane. 1991. *Text Analysis in Translation: Theory, Methodology, and Didactic Application of a Model for Translation-Oriented Text Analysis*. Translated by Christiane Nord and Penelope Sparrow. Amsterdam and Atlanta: Rodopi.

Pym, Anthony, and Ester Torres-Simón. 2021. “Is Automation Changing the Translation Profession?” *International Journal of the Sociology of Language* 2021 (270): 39–57.

Sărmașiu, Andreea-Maria. 2024. *Investigating the Translatability of Legal Texts: Designing Effective Transfer Strategies for Legal Translations*. Cluj-Napoca: Presa Universitară Clujeană.

Venuti, Lawrence. 1995. *The Translator’s Invisibility: A History of Translation*. London and New York: Routledge.

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[i] The original text is available at: https://www.eurasiareview.com/20022025-eu-forges-ahead-with-independent-russia-sanctions-policy-amid-mixed-us-signals/. Accessed February, 2025.
[ii] For further reading, see: https://www.coe.int/web/portal/home, Accessed February, 2025
[iii] For further reading, see: https://www.asfromania.ro/, Accessed February, 2025
[iv] For further reading, see: https://mfinante.gov.ro/ro/web/site, Accessed February, 2025
[v] For further reading, see: https://www.bnr.ro/, Accessed February, 2025
[vi] For further reading, see: https://dexonline.ro/, Accessed February, 2025
[vii] For further reading, see: https://www.oxfordlearnersdictionaries.com/us/, Accessed February, 2025
[viii] For further reading, see: https://dictionary.cambridge.org/, Accessed February, 2025
[ix] For further reading, see: https://www.wordreference.com/, Accessed February, 2025
[x] For further reading, see: https://iate.europa.eu/, Accessed February, 2025
[xi] For further reading, see: https://style-guide.europa.eu/ro/, Accessed February, 2025
[xii] For further reading, see: https://www.euractiv.com/, Accessed February, 2025
[xiii] For further reading, see: https://www.politico.eu/, Accessed February, 2025
[xiv] For further reading, see: https://ier.gov.ro/, Accessed February, 2025
[xv] For further reading, see: https://www.euronews.ro/, Accessed February, 2025
[xvi] For further reading, see: https://www.caleaeuropeana.ro/author/caleaeuropeana/, Accessed February, 2025

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[xvii] For further reading, see: https://economie.gov.ro/, Accessed February, 2025
[xviii] For further reading, see: https://rdt-contabilitate.ro/dictionar-economic/, Accessed February, 2025
[xix] For the purposes of this experiment, the artificial intelligence platform employed was ChatGPT.com, which facilitated the analysis and processing of the posed challenges.
[xx] For further reading, see: https://insse.ro/cms/, Accessed February, 2025
[xxi] For further reading, see: https://www.zf.ro/, Accessed February, 2025
[xxii] For further reading, see: https://www.revecon.ro/, Accessed February, 2025
[xxiii] For further reading, see: https://www.profit.ro/, Accessed February, 2025
[xxiv] For further reading, see: https://www.capital.ro/, Accessed February, 2025
[xxv] For further reading, see: https://www.revistadestatistica.ro/, Accessed February, 2025
[xxvi] In the next validation phase, before selecting the correct equivalent, the teams were given the opportunity to consult resources regarding the proper use of prepositions in Romanian. They observed that the preposition 'de' is used after the word 'interdicție' when followed by a verb, whereas 'la' is used when it is followed by a noun. The final chosen variant was: *interdicții la import*.
[xxvii] The final chosen variant was: *restricții la export*, because the teams were able to observe that the preposition 'de' is used to define the type, cause, or nature of the restriction, whereas the preposition 'la' is used to indicate the domain, object, or target to which the limitation applies.
[xxviii] The final chosen variant was: *sistem international de plăți SWIFT.*
[xxix] After more thorough research, neither of the previous variants was accepted, and a new equivalent was proposed: *plafon de preț pentru un litru de carburant*.
[xxx] The activities undertaken included: Translation phase: *Individual vs. Collaborative Translation & Game-Changing AI*; Post-translation phase: *Self-Evaluation or Self-Reflection? & Game-Changing AI.*

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