

**Zoia Kornieva**

Doctor of Pedagogic Sciences, Full Professor  
National Technical University of Ukraine  
"Igor Sikorsky Kyiv Polytechnic Institute"  
Kyiv, Ukraine  
ORCID ID 0000-0002-8848-4323  
*kornieva.zoia@ill.kpi.ua*

**Yelyzaveta Shpak**

Master's student of the Faculty of Linguistics  
National Technical University of Ukraine  
"Igor Sikorsky Kyiv Polytechnic Institute"  
Kyiv, Ukraine  
*lizashpak412@gmail.com*

---

## UNRAVELLING THE ART OF DECOMPRESSING ENGLISH-LANGUAGE SCIENTIFIC AND TECHNICAL TEXTS IN UKRAINIAN TRANSLATIONS

---

The study of decompression, an often-neglected aspect of translation studies, elucidates its role in translational transformations leading to increased lexical and symbolic volumes. The subtleties of translating scientific and technical texts into English into Ukrainian become obvious when dealing with such problems as dense and complex content, special terminology, and the dynamic development of scientific fields. The added difficulty of maintaining logical consistency and coherence while ensuring understanding further complicates the translation process. To solve these difficulties, decompression in Ukrainian translations requires a multifaceted approach that combines linguistic knowledge and subject expertise. Initiating research into the phenomenon of decompression in the context of information translation from English to Ukrainian, this article uses a comprehensive research approach. By analysing a variety of English-language scientific and technical texts, the study reveals the intricate details of this transformational process. The focus is on understanding the impact of decompression on both the volume and clarity of translated texts, shedding light on the dynamic interaction between languages and the challenges of maintaining fidelity to source materials across linguistic and cultural differences. This study marks the beginning of a fine-grained understanding of decompression in technical translation. Future research should further explore the intricacies of decompression, contributing to the development of practical tools that will facilitate more effective cross-cultural communication in scientific and technical fields. By addressing the challenges associated with decompression, future research efforts can improve the accuracy and accessibility of translated scientific and technical content, further bridging the language gap and facilitating the seamless exchange of knowledge across different linguistic landscapes.

**Keywords:** decompression, technical translation, linguistic adaptation, translation challenges, scientific terminology, linguistic nuances, translation strategies.

---

### 1. INTRODUCTION

In the interrelated field of modern academic and industrial activities, the key function of translation of scientific and technical texts is becoming increasingly evident. This important role goes beyond the simple transformation of words; it involves the complex task of transposing intended meaning, contextual nuances, and technicalities. This multifaceted process is indispensable for overcoming the linguistic and cultural differences that characterise our globalised world, contributing to the seamless dissemination of knowledge. In the complex process of language transmission, accuracy is of paramount importance, as it ensures the preservation of the essence of the original text.

**The aim of this article** is to begin to investigate the phenomenon of decompression in the context of transferring information from English to Ukrainian. By uncovering the subtleties of this transformative journey, we seek to unravel the impact on both the volume and clarity of the translated text. By delving into the nuances of this translation process, we aim to shed light on the dynamic interplay between languages and the challenges of maintaining fidelity to the source material while accommodating linguistic and cultural differences. Through this research, we seek to contribute to a broader understanding of the complexities surrounding scientific and technical translation by offering insights that resonate across disciplines and linguistic landscapes.

## 2. METHODS

To understand the intricacies of decompressing English-language scientific and technical texts in Ukrainian translations, a comprehensive research approach was adopted. This involved analysing a diverse range of English-language scientific and technical texts across various domains, including engineering, medicine, information technology, and more. The focus was on identifying the specific challenges that arise during the translation process, such as complex terminology, jargon, and the need for precise and accurate representation of scientific concepts.

## 3. RESULTS AND DISCUSSION

The definition of decompression, its specifics and features of application in the process of translation is not the subject of frequent and in-depth studies in translation studies and linguistics. Only a number of researchers touch on this issue in their works, among them V.I. Karabana, L.L. Nelyubina, T.A. Kazakov, O.V. Breus, Y.I. Kaminsky, V.V. Myroshnichenko and others.

Decompression is the result of a translational transformation or a series of transformations that lead to a larger plan of content and expression of the translation unit in the translated text. In other words, decompression leads to an increase in the lexical volume (the number of words increases), and the symbolic (total volume) most often increases, but a decrease is not excluded (Birksted-Breen, 2021, p 136).

The process of decompression is carried out at the level of the form of linguistic units by adding words, phrases or more adequate substitutions in order to convey the content of the original in a form accessible to a foreign language reader.

Translating English-language scientific and technical texts into Ukrainian presents a myriad of challenges. One of the primary difficulties lies in the density and complexity of the content. Scientific and technical texts often contain specialised terminology and jargon that may not have direct equivalents in Ukrainian. This can result in ambiguity and loss of precision in the translation if not handled carefully.

Another challenge is the need to maintain the logical flow and coherence of the original text while ensuring that the translated material is comprehensible to the target audience. This requires translators to strike a delicate balance between accuracy and readability, as overly literal translations may sacrifice clarity, while overly liberal translations may compromise accuracy.

Furthermore, the rapid evolution of scientific and technical fields means that new terms and concepts constantly emerge, posing a continuous challenge for translators to stay abreast of the latest developments and terminology.

Decompressing English-language scientific and technical texts in Ukrainian translations requires a multi-faceted approach that encompasses linguistic proficiency, subject matter expertise, and an understanding of the cultural context. One effective strategy is to conduct thorough research to gain a comprehensive understanding of the scientific and technical concepts being addressed in the text. This may involve consulting authoritative sources, academic publications, and domain-specific dictionaries to ensure accuracy in the translation of specialised terminology (Parrish, 2008, p 34).

Translators should also employ techniques such as paraphrasing, contextualization, and the use of explanatory footnotes to clarify complex concepts and ensure that the translated material is accessible to the target audience. Additionally, collaboration with subject matter experts and

professionals in the relevant field can provide valuable insights and ensure the accuracy of the translation (Babalova, 2017).

A nuanced understanding of the cultural and linguistic nuances of the target language is also crucial in decompressing scientific and technical texts. Translators must be attuned to the linguistic conventions and stylistic preferences of Ukrainian readers to effectively convey the intended meaning of the original text.

Below are some examples of decompression for analysis (Wilson, 2021):

1. "The **AI** algorithm utilises **NLP** techniques for semantic analysis."  
"Алгоритм **штучного інтелекту** використовує техніку **обробки природної мови** для семантичного аналізу."
2. "The software employs an **API** for seamless integration."  
"Програмне забезпечення використовує **інтерфейс програмування застосунків** для безшовної інтеграції."
3. "The device is equipped with **GPS** for precise location tracking."  
"Пристрій обладнаний **системою глобального позиціонування** для точного визначення місцезнаходження."
4. "The system features a **GUI** for user-friendly interaction."  
"Система має **графічний інтерфейс користувача** для зручної взаємодії."
5. "The robotic arm utilizes **IoT** connectivity for remote operation."  
"Роботична рука використовує підключення до **Інтернету речей** для віддаленого управління."

The given examples emphasise the frequent necessity of careful deciphering of abbreviations during translation from English to Ukrainian. In the Ukrainian language, there is a tendency to clarify technical terms and expand abbreviations to ensure the accuracy of the essence of the original sentence. This careful approach is evident in the translations, where specific technical details are spelled out to avoid any ambiguity or loss of information.

The Ukrainian language often needs expressiveness, and this is reflected in the elaborate nominal phrases and elaborate explanations observed in the translated sentences. This emphasises the importance of not only linguistic knowledge, but also a deep understanding of the technical field in order to accurately capture the subtleties of the original text.

The advantage of decompression in Ukrainian technical translation becomes especially evident when working with terms related to computing, software, and data processing. While this may result in more words, it provides a more accurate representation of the intended meaning.

1. "The software architecture must be **modular** to facilitate scalability."  
"Архітектура програмного забезпечення повинна мати **модульну структуру** для полегшення масштабованості."
2. "The sensor array captures a wide spectrum of **environmental data**, including temperature, humidity, and atmospheric pressure."  
"Матриця датчиків фіксує широкий спектр **даних про навколишнє середовище**, включаючи температуру, вологість і атмосферний тиск»."
3. "The **collaborative robot** utilizes sensor fusion for precise object detection and avoidance in complex workspaces."  
"Робот для виконання **колаборативних робіт** використовує злиття датчиків для точного виявлення об'єктів і уникнення їх у складних робочих просторах".
4. "The algorithm employs parallel processing to enhance computational efficiency in **data-intensive applications**."  
"Алгоритм використовує паралельну обробку для підвищення обчислювальної ефективності в **додатках з великим обсягом даних**."
5. "The software framework supports multi-threading for concurrent execution of tasks, improving **system responsiveness**."  
"Програмний фреймворк підтримує багатопотоковість для одночасного виконання завдань, покращуючи **загальну швидкість реагування системи**".

6. *"The embedded system architecture integrates power management features for optimizing energy consumption in **battery-operated devices**."*

*"Архітектура вбудованої системи об'єднує функції керування живленням для оптимізації споживання енергії в пристроях, що працюють від акумулятора."*

The given examples emphasise the evolution of English-language scientific and technical discourse. English is the lingua franca in various fields, creating a rich specialised vocabulary and expressions that may not have direct equivalents in other languages, including Ukrainian.

The Ukrainian language, like any other language, has its strengths and adaptability, but the vast volume of scientific literature in English has contributed to the creation of a specialised vocabulary that may require careful interpretation. As a result, some terms and expressions from the English language can be difficult to translate into Ukrainian due to differences in the language structure.

Because of everything written above in the process of translation, especially in the technical field, it becomes mandatory to decode and explain English terms in order to reconcile them with the more complex nature of the Ukrainian language. This does not indicate the superiority or inferiority of one language over another; rather, it emphasises the need for linguistic adaptation to convey technical concepts accurately.

#### 4. CONCLUSIONS AND SCOPE FOR THE FURTHER RESEARCH

The research has illuminated the intricate process of decompression in the translation of scientific and technical texts from English to Ukrainian. Decompression, resulting in an increased lexical and symbolic volume, plays a pivotal role in conveying the nuances of the source material accurately.

The study underscores the limited attention given to decompression in translation studies and linguistics, emphasizing the necessity for further exploration of this phenomenon.

The challenges identified in translating scientific and technical texts, including the need for precise representation of concepts and the dynamic evolution of terminology, indicate the continuous evolution of language. Future research could focus on developing adaptive translation strategies to address these challenges effectively.

The examples provided, showcasing the necessity of careful deciphering of abbreviations during translation, suggest a need for a comprehensive glossary or reference guide for translators working in technical fields. Such resources could aid in maintaining accuracy and consistency in translations.

The importance of linguistic adaptation and careful decoding of English terms in the translation process emphasises the need for continuous professional development for translators.

The evolving nature of English as the lingua franca in scientific and technical discourse raises questions about linguistic adaptation in other languages. Future research could explore how various languages, including Ukrainian, adapt to the evolving vocabulary and expressions of technical fields.

In conclusion, this article serves as a starting point for understanding decompression in technical translation from English to Ukrainian. Future studies could further explore the nuances of decompression, develop practical tools for translators, and contribute to the ongoing dialogue on effective cross-cultural communication in the scientific and technical domains.

#### REFERENCES

- Birksted-Breen, D. (Ред.). (2021). *Translation / Transformation*. Routledge. <https://doi.org/10.4324/9781003096399>
- Olohan, M. (2015). *Scientific and Technical Translation*. Taylor & Francis Group.
- Tetiana, N. (2019). Lexical features of modern English abbreviations in the internet. *Scientific Bulletin of Kherson State University. Series Linguistics*, (35), 104–109. <https://doi.org/10.32999/ksu2413-3337/2019-35-19>
- Babalova, G. G. (2017). The problem of translation equivalency and translation transformations. *Science of the Person: Humanitarian Researches*, 4(30), 23–28. <https://doi.org/10.17238/issn1998-5320.2017.30.23>
- Кудрявцева, Н. С. (2022). Англійське речення: структура і переклад. КДПУ. <https://doi.org/10.31812/123456789/6203>
- Wilson, K. (2021). *Computer Jargon: The Illustrated Glossary of Basic Computer Terminology*. Elluminet Press.
- Parrish, S. S. (2008). *Scientific Discourse*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195187274.013.0013>

**Зоя Корнєва, Єлизавета Шпак. Декомпресія англomовних науково-технічних текстів в українських перекладах.** Вивчення декомпресії, аспекту перекладознавства, яким часто нехтують, з'ясовує його роль у перекладацьких трансформаціях, що призводять до збільшення лексичних і символічних обсягів. Тонкощі перекладу науково-технічних текстів з англійської на українську стають очевидними при вирішенні таких проблем, як щільний і складний зміст, спеціальна термінологія, динамічний розвиток наукових галузей. Додаткова складність збереження логічної послідовності та зв'язності при одночасному забезпеченні розуміння ще більше ускладнює процес перекладу. Щоб вирішити ці труднощі, декомпресія в українських перекладах потребує багатогранного підходу, який поєднує лінгвістичні знання та знання предмета. Започатковуючи дослідження феномену декомпресії в контексті перекладу інформації з англійської мови на українську, у цій статті використано комплексний підхід дослідження. Аналізуючи різноманітні англomовні наукові та технічні тексти, дослідження розкриває складні деталі цього трансформаційного процесу. Основна увага зосереджена на розумінні впливу декомпресії як на обсяг, так і на чіткість перекладених текстів, проливаючи світло на динамічну взаємодію між мовами та проблеми збереження вірності вихідним матеріалом незважаючи на мовні та культурні відмінності. Це дослідження знаменує собою початок детального розуміння декомпресії в технічному перекладі. Майбутні дослідження повинні продовжити вивчення тонкощів декомпресії, сприяючи розробці практичних інструментів, які сприятимуть більш ефективній міжкультурній комунікації в науковій і технічній сферах. Вирішуючи проблеми, пов'язані з декомпресією, майбутні дослідницькі зусилля можуть підвищити точність і доступність перекладеного наукового та технічного вмісту, ще більше подолаючи мовний розрив і сприяючи безперервному обміну знаннями між різними мовними ландшафтами.

**Ключові слова:** декомпресія, технічний переклад, лінгвістична адаптація, проблеми перекладу, наукова термінологія, лінгвістичні нюанси, стратегії перекладу.