TERMINOLOGICAL ACCURACY AS A KEY FACTOR IN TRANSLATING TECHNICAL TEXTS: PROBLEMS AND SOLUTIONS

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Abstract

Technical translation is a highly specialized process that requires terminological accuracy to ensure the correct transmission of scientific and technical concepts. This article examines terminological accuracy as a key factor in translating technical texts and analyzes major problems such as terminological inconsistency, polysemy, homonymy, neologisms, and the lack of standardized terminology. The study highlights the essential role of terminographic resources, specialized dictionaries, corpora, and terminology management systems in improving translation quality. The article also proposes practical solutions, including the development of translator competence, the application of corpus-based methods, and the implementation of unified terminology databases. The findings demonstrate that terminological precision significantly enhances clarity, reliability, and functionality in technical translation.

Keywords: technical translation, terminology, terminological accuracy, consistency, translation problems, terminology management.

Introduction

In the contemporary stage of scientific and technological development, the role of technical translation has become increasingly significant. The rapid expansion of industry, engineering, information technologies and applied sciences requires the accurate transmission of specialized concepts from one language to another. In this process, terminological accuracy serves as one of the fundamental criteria determining the quality and reliability of the translated text. The slightest deviation in terminology may lead to misunderstanding, distortion of meaning, or even technical errors, which makes this issue particularly important for translators working with professional documentation.

Technical terminology is characterized by a high degree of precision, stability and systematization. However, translators frequently encounter several challenges, including the absence of direct equivalents, the presence of multiple competing terms, polysemous units, or newly emerging concepts that have not yet been fully standardized. These factors complicate the process of achieving terminological consistency and require translators to apply specialized strategies, consult terminographic resources, and rely on subject-matter knowledge.

Despite the growing body of research in translation studies, the analysis of terminological accuracy in technical translation remains relevant, as technological innovations continuously introduce new terms and redefine existing ones. Therefore, addressing terminological issues is essential not only for improving translation quality but also for ensuring effective professional communication across industries.

The purpose of this article is to identify the main problems related to terminological accuracy in the translation of technical texts and to propose practical solutions aimed at enhancing consistency and precision. The study draws on scientific literature, terminological theories, and modern terminology management practices to provide a comprehensive overview of this issue.

Literature Review

The issue of terminological accuracy in technical translation has been addressed by a number of scholars in translation studies and terminology. Early research emphasized the need for systematized terminology, noting that terminological stability is essential for maintaining conceptual clarity in specialized texts. Scholars such as E. Wüster and the Vienna School of Terminology laid the foundational principles of terminography, highlighting that technical terms should be standardized, unambiguous, and functionally precise within their respective domains. Their works underline that the correct use of terminology is not only a linguistic matter but also a reflection of scientific classification and conceptual structure.

Later studies expanded this perspective by analyzing the practical challenges faced by translators. Many researchers argue that technical terminology often lacks universal equivalents across languages due to differences in scientific traditions and industrial development. As a result, translators must navigate terminological gaps, variations in national standards, and the coexistence of multiple competing terms. According to modern translation theorists, these difficulties require translators to possess both linguistic competence and subject-matter knowledge, as well as the ability to critically evaluate terminological choices within context.

Recent academic works focus on the role of digital resources and corpus-based methods in enhancing terminological accuracy. Scholars point out that the use of electronic corpora, terminology databases, and specialized glossaries significantly facilitates the identification of the most appropriate term in a given context. Furthermore, terminology management systems are emphasized as effective tools for maintaining internal consistency in large-scale translation projects, particularly in technical and engineering documentation.

Another direction in contemporary research examines the emergence of neologisms and the increasing pace of technological development. Studies show that translators must often deal with terms that have not yet been fully standardized or recognized in official terminological bodies. In such cases, researchers recommend analyzing existing usage patterns, consulting industry-specific documentation, and relying on established terminological principles to ensure conceptual precision.

The reviewed literature demonstrates that terminological accuracy remains a complex, multifaceted issue. While theoretical frameworks provide essential guidelines, practical translation work requires the integration of linguistic, cognitive, and technological approaches. These findings lay the foundation for further analysis of specific problems and solutions in technical translation.

Methodology

The methodological basis of this study is grounded in a comparative and analytical approach, which makes it possible to identify the main factors influencing terminological accuracy in technical translation. The research relies on the examination of scientific literature on terminology and translation studies, as well as the analysis of practical examples taken from

technical documentation in fields such as engineering, information technology, and applied sciences.

To ensure objectivity, the study employs several complementary methods. First, a descriptive method is used to outline the characteristics of technical terminology and to clarify the theoretical principles related to terminological accuracy. This provides a general framework for understanding how technical terms function within specialized texts.

Second, a comparative analysis is conducted to examine cases in which terminological inconsistency, polysemy, or the absence of direct equivalents creates difficulties for translators. By comparing different translation variants, the study identifies the factors that contribute to inaccurate or ambiguous term usage.

Third, a contextual analysis method is applied to assess how terminological choices depend on the conceptual structure of a particular field. This approach makes it possible to determine whether the selected term fits the communicative purpose, the technical specifications, and the conventional usage of the target language.

In addition, the research incorporates elements of corpus-based observation, drawing on available electronic dictionaries, terminology databases, and academic corpora. This helps to verify terminological frequency, usage tendencies, and the degree of standardization in real technical texts.

Analysis

Terminological accuracy plays a critical role in the translation of technical texts, as even minor deviations in term usage can compromise the clarity and reliability of a document. In technical translation, several interconnected challenges can affect terminological precision.

1. Terminological Inconsistency

One of the most common issues encountered by translators is terminological inconsistency. This occurs when a single concept is represented by different terms within the same text or across related documents. Inconsistency may arise due to multiple acceptable translations, a lack of standardized terminology, or insufficient research on the part of the translator. For example, in information technology texts, the English term “network interface” can be translated as “tarmoq interfeysi” or “tarmoq yuzasi”, depending on the translator’s interpretation. Such variations can confuse the reader and reduce the professional credibility of the translated text.

2. Polysemy and Homonymy

Polysemy, where a single term has multiple related meanings, and homonymy, where different concepts share the same linguistic form, further complicate translation. For instance, the term “server” in English may refer to a physical machine, a software program, or a service provider, depending on context. The translator must rely on contextual cues, field-specific knowledge, and authoritative sources to select the correct equivalent. Failure to do so can lead to semantic ambiguity and technical errors.

3. Neologisms and Emerging Terms

Rapid technological development continually generates neologisms and new technical concepts. Translators frequently encounter terms that have not yet been standardized in the target language. For example, emerging terms in artificial intelligence, such as “deep learning framework”, require careful analysis to determine whether a direct translation, transliteration, or descriptive equivalent is most appropriate. The lack of established terminology increases the

risk of misinterpretation and necessitates extensive research in subject-matter literature and databases.

4. Influence of Industry Standards

Industry-specific standards and conventions significantly influence terminological choices. Technical translators must ensure that their terminology aligns with recognized international or national standards. For instance, engineering texts in mechanical or civil domains often reference ISO or ASTM terminology, which demands precise adherence to established definitions. Neglecting these standards can lead to miscommunication, legal issues, or technical failures in the implementation of instructions.

5. Tools and Resources for Ensuring Accuracy

The use of terminographic resources, specialized dictionaries, corpora, and translation memory systems is essential for maintaining terminological accuracy. Corpus-based analysis helps to identify the most commonly used terms in authentic texts, while terminology databases provide authoritative equivalents for specialized concepts. Additionally, collaboration with subject-matter experts and consultation of technical manuals strengthen the reliability of translations.

6. Translator Competence and Strategy

Ultimately, terminological accuracy depends on the translator's linguistic competence, field knowledge, and strategic decision-making. Successful translators combine theoretical understanding of terminology with practical experience and critical evaluation skills. Strategies such as creating personal glossaries, cross-referencing multiple sources, and continuously updating knowledge in their specialization are widely recommended in the literature.

Discussion

The analysis of terminological accuracy in technical translation highlights several interrelated challenges that affect both the clarity and reliability of translated texts. The prevalence of terminological inconsistency, polysemy, and emerging neologisms demonstrates that translators must operate within a complex linguistic and conceptual environment. These challenges are not merely linguistic; they reflect the rapid pace of technological innovation and the continuous evolution of specialized knowledge in various fields.

A key observation from this study is that terminological inconsistency often arises from a lack of standardized resources and insufficient familiarity with subject-specific conventions. Even highly skilled translators may struggle to maintain uniformity in large documents or across related texts. This underscores the necessity of developing systematic strategies, such as using translation memories, creating personal glossaries, and consulting authoritative terminology databases. The issue of polysemy and homonymy further emphasizes the importance of context-sensitive translation. Translators must not only recognize multiple potential meanings of a term but also evaluate which meaning aligns with the technical context and the intended communicative function. Inaccurate selection can lead to semantic ambiguity or practical errors, particularly in fields such as engineering, medicine, and information technology, where precision is critical. The discussion also highlights the role of terminology management tools and digital resources. Corpus-based methods, specialized dictionaries, and terminological databases provide empirical evidence of language use and help ensure adherence to recognized standards. However, technological support alone is insufficient;

human judgment, professional experience, and continuous learning are essential components of terminological accuracy.

Finally, the study suggests that enhancing translator competence is pivotal. Continuous professional development, close collaboration with subject-matter experts, and active engagement with industry-specific literature are recommended practices. By integrating theoretical knowledge, practical strategies, and technological tools, translators can achieve greater precision, consistency, and functional adequacy in technical translation.

Conclusion

Terminological accuracy is a fundamental component of high-quality technical translation. This study demonstrates that achieving precision in terminology requires not only linguistic competence but also subject-matter expertise, familiarity with industry standards, and the effective use of terminographic resources. Challenges such as terminological inconsistency, polysemy, and the emergence of neologisms continue to complicate the translation process, emphasizing the need for systematic strategies and informed decision-making.

The findings highlight that corpus-based methods, specialized dictionaries, and terminology management systems are invaluable tools for ensuring consistency and clarity in technical texts. However, technological support must be complemented by the translator's professional judgment, ongoing training, and collaboration with experts in the relevant fields.

In conclusion, addressing terminological issues is essential for enhancing the reliability, clarity, and functional adequacy of translated technical documents. By integrating theoretical principles, practical strategies, and technological resources, translators can effectively overcome terminological challenges and contribute to the advancement of professional communication across scientific and technical domains.

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