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КВАЛІФІКАЦІЙНА РОБОТА
на здобуття освітнього ступеня «Магістр»
Проблеми перекладу і редагування англомовних науково-популярних текстів
Problems of translating and editing English-language popular science texts

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CONTENTS

INTRODUCTION

The qualification paper is dedicated to the study of translating and editing English-language popular science texts and several challenges, as these texts need to balance accessibility, accuracy, and engagement while addressing linguistic and cultural differences.

At present, there is a need to distinguish popular science texts of editing and translation as a special type of translation activity and a special theory that studies this type of activity. From the point of view of linguistics, the characteristic features of scientific and technical literature extend to its style, grammar and vocabulary. The most typical lexical feature of scientific and technical literature is the saturation of the text with terms and terminological phrases, as well as the presence of lexical constructions and abbreviations. The main task of scientific and technical translation is to convey the information communicated in an extremely clear and precise manner. This is achieved by a logically sound presentation of factual material, without explicitly expressed emotionality. The style of scientific and technical literature can be defined as formal-logical. It should be noted that the wide and intensive development of the scientific style has led to the formation of numerous genres within its framework, such as: article, monograph, textbook, patent description (description of invention), abstract, annotation, documentation, catalog, reference book, specification, instruction, advertising (having features of a journalistic style). Each genre has its own individual stylistic features, but they do not violate the unity of the scientific style, inheriting its general features and characteristics. Among the current problems of modern translation studies, an important place is occupied by the development of such a branch as translation of scientific and technical texts, since in connection with the accelerating scientific and technical progress, this type of translation activity is becoming increasingly in demand. But, unfortunately, the degree of study of this topic is far from the desired completeness, in particular, the techniques and methods of translating accompanying technical documentation have not been

sufficiently studied. Based on the relevance, the purpose of the study carried out in this work was determined, which is to study the features of the translation of scientific and technical texts. In accordance with the purpose of the work, the following tasks were formulated, the solution of which is aimed at a comprehensive disclosure of the topic and the achievement of the set goal.

Therefore, the **relevance of the research** is determined by the need for a study of the English-Ukrainian translation main aspects. Such professional approach of translation. The research on translating and editing English-language popular science texts is highly relevant in today's globalized world.

Focusing on translating and editing popular science texts ensures the accurate and engaging communication of scientific knowledge, fostering a more informed and connected global society.

The purpose of the Master's Paper is to study the peculiarities of translating and editing English-language popular science texts focus on training professional translator and to confirm the need to apply these approach into account during the training of a field translation specialist.

The purpose of the study provided for solving the following **tasks**:

1. to analyze the stylistic features of the English-language popular science texts translation;

2. to consider the lexical features of the English-language popular science texts translation;

3. to identify the main difficulties in translating English-language popular science texts;

4. to study the requirements necessary to achieve the adequacy of the English-language popular science texts.

5) to describe the main translation and editing English-language popular science texts aspects;

The object of the Master's thesis is the English-language popular science texts.

The subject of research is methods and techniques of English-language popular science texts translation.

The source of factual material is international professional literature on translation and editing.

The purpose and tasks of the research led to the use of the following methods and techniques: In the process of research, the comparative, contrastive translation method and component analysis were used.

The scientific novelty of the work The relevance and necessity of studying the features of the English-language popular science texts translation explain the theoretical significance of the study conducted in this work.

The theoretical significance of the work on Problems of translating and editing English-language popular science texts lies in several key areas of linguistic, cultural, and disciplinary study. By addressing these areas, the theoretical exploration of translating and editing English-language popular science texts enriches our understanding of how language mediates the dissemination of knowledge and fosters cross-cultural scientific literacy

The practical significance of the Diploma Paper is explained by the possibility of practical use of the research results in the work of translators engaged in the translation of English-language popular science texts.

Approbation of the research results was performed by taking part in International scientific and practical conference "Innovative technologies in the context of foreign language training of a specialist" (Poltava 2023,2024); International Scientific and Practical Conference "Actual Issues of Germanic Philology and Translation" (Poltava, 2023, 2024).

Structure of work. The Master Paper includes an introduction, two chapters, conclusions to every chapter and References list and 2 appendices.

The introduction defines the relevance of the Paper, theoretical goals and task set in Master's work first chapter includes detailed translating English-language popular science texts main aspects analyses which is made on the base of foreign literature on translating. The first chapter of the thesis is devoted to the consideration of the main characteristics and features of the translation of a popular science text, including stylistic, lexical, grammatical, and graphic ones. The concept of "style" is disclosed, the most well-known classifications of scientific texts are listed, stylistic features of

scientific and technical texts are given, and terminology in a scientific and technical style is examined.

Second chapter offers editing English-language popular science texts main aspects. The research material includes scientific and technical monographs, articles from scientific and technical printed publications, as well as electronic English terminological technical dictionaries. The second chapter considers the difficulties in correcting popular science texts, and analyzes the requirements for translation adequacy and equivalence of the translation and the original.

The conclusion summarizes the results of the study and formulates brief findings.

The total volume of work is 95 pages, the bibliographic description contains 38 References, 3 Appendices.

CHAPTER 1. TRANSLATING ENGLISH-LANGUAGE POPULAR SCIENCE TEXTS MAIN ASPECTS

The phrase "text stylistics" has been known for a long time, but its content evokes only the most general, vague ideas. The fact is that the name of the science appeared before the science itself, which is only just beginning to form. Rapidly developing text linguistics has shown that along with grammar, semantics of the text and other aspects and areas of its study, text stylistics is also necessary. It seems that both of its components - stylistics and text - are very important in the name of this science. The first assumes a stylistic approach to all text phenomena, the second denotes the subject of study and, accordingly, the specifics of stylistic study (not traditional linguistic units are studied, but texts. The stylistic approach assumes the study of the functioning (methods of use) of the text and its units - prose stanzas (complex syntactic wholes), fragments, chapters, parts; stylistic specifics of text types (speech); conditions and means of expressiveness of texts. Each text has its own individual functional style. Language style is a combination of two factors - "what is said" and "how it is said", i.e. it is a purposeful set of linguistic means. "The concept of language style is based on an assessment of the relationship of the means of expression to the expressed content." The emergence and development of scientific style is associated with the development of different areas of scientific knowledge, different spheres of human activity. At first, the style of scientific presentation was close to the style of artistic narration. The style of modern English scientific and technical literature is based on the norms of written English with certain specific characteristics, namely:

1) vocabulary. A large number of special terms and words of non-Anglo-Saxon origin are used. Words are selected with great care to convey thoughts as accurately as possible. A large proportion of service (functional) words (prepositions and conjunctions) and words that provide logical connections between individual elements of statements (adverbs) have a large specific weight.

2) grammar. Only grammatical norms that are firmly established in written speech are used. Passive, impersonal and indefinite-personal constructions are widespread.

Compound and complex sentences are mostly used, in which nouns, adjectives and impersonal forms of the verb predominate. Logical emphasis is often achieved by deviating from the fixed word order (inversion). 3) the method of presenting the material. The main task of scientific and technical literature is to convey certain information to readers in an extremely clear and precise manner. This is achieved by a logically sound presentation of factual material, without the use of emotionally charged words, expressions and grammatical constructions. This method of presentation can be called formal-logical. Scientific and technical literature, in turn, has several gradations. Scientific and technical texts differ from each other not only in the field of science or technology to which they relate, but also in the degree of their specialization. The above characteristics fully apply to scientific monographs and articles, abstracts and textbooks. However, the text of technical reference books, catalogs, descriptions of supplies, technical reports, specifications and instructions. In technical reference books, there are entire sections consisting of lists. Descriptions of supplies, specifications, technical reports and catalogs are usually compiled according to a rigid template and loaded with special terminology. The lexical and grammatical pattern is also inherent in the language of patent literature. It is generally accepted that technical literature is characterized by a neutral way of presenting material, or a neutral style. Since technical literature is characterized by a formal, logical, almost mathematically rigorous presentation of material, it is probably legitimate to call such a presentation formal-logical. As already mentioned, the style of a language is understood as a complex interweaving of two factors - what is said and how it is said. Therefore, using the term "style" in this section to describe the way of presenting material in English technical literature, we will simultaneously consider the lexical and grammatical features of this literature, described in the previous section. Thus, the main requirement for the language of technical literature is an accurate and clear presentation, description and explanation of facts. The main emphasis is on the logical, not the emotional side of information. The author seeks to exclude the possibility of arbitrary interpretation of the essence of the subject. Therefore, in technical literature, such expressive means as metaphor, metonymy, etc. are almost never used, and the presentation is somewhat dry and formal. When discussing the method of presentation

of technical literature, it must be taken into account that this literature has a limited circle of readers, for whom it is the formal-logical style that provides the most complete and effective information. The formal-logical style appeared as a result of the urgent need for such a style among a large group of people. It is a natural consequence of the development of the language of technical literature. Those who criticize this style forget that technical texts are intended for specialists who have the relevant knowledge and for whom a deviation from their usual method of presenting the material makes it difficult to understand the facts. The main stylistic feature of a technical text is a precise and clear presentation of the material with an almost complete absence of those expressive elements that give the speech emotional richness, the main emphasis is on the logical, and not on the emotional-sensory side of the presented. The author of a technical article strives to exclude the possibility of arbitrary interpretation of the essence of the treated subject, as a result of which such expressive means as metaphors, metonymies and other stylistic figures, which are widely used in works of art to give speech a lively, figurative character, are almost never found in scientific literature. Authors of scientific works avoid using these expressive means so as not to violate the main principle of technical language - the accuracy and clarity of the presentation of thoughts. This leads to the fact that the technical text seems somewhat dry, devoid of elements of emotional coloring. Thus, studying the stylistic features of scientific and technical texts, it is important to note that their main characteristic is the desire for clarity and rigor of presentation, the rejection of indirect, descriptive designations of objects, the widespread use of clichés and stereotypes of specialized vocabulary A comparative analysis of translations shows that translators regularly make stylistic adaptations of the translated text, omitting emotional and stylistic elements of the original that seem inappropriate to them. In conclusion of this sub-clause, it can be concluded that, despite its stylistic remoteness from the living spoken language, rich in various expressive means, a technical text still includes a certain number of more or less neutral phraseological combinations of a technical nature. The characteristic features of the scientific and technical style are its informativeness (content), logic (strict consistency, clear connection between the main idea and details), accuracy and objectivity and the clarity

and intelligibility that follow from these features. Individual texts belonging to this style may have these features to a greater or lesser extent. However, all such texts show a predominant use of linguistic means that help to satisfy the needs of this sphere of communication. The scope of application of the scientific style is very broad. This is one of the styles that has a strong and diverse influence on the literary language. The scientific and technical revolution taking place before our eyes is introducing a huge number of terms into general use. While dictionaries used to be based on the language of fiction and, to a lesser extent, journalism, it is now impossible to describe the developed languages of the world without taking into account the scientific style and its role in the life of society. Here are some key aspects to consider when translating speech styles between languages:

Formality levels

- Languages often have distinct levels of politeness and formality expressed through pronouns, verb forms, honorifics, and word choice
- The appropriate level depends on the relationship between speakers, social context, and cultural norms
- Some languages like Japanese and Korean have very complex honorific systems
- The translator needs to map formality levels appropriately between languages

Register and tone

- Whether the speech is casual, formal, academic, poetic, etc.
- Slang, idioms, and colloquialisms require special consideration
- Technical vs. everyday vocabulary
- Emotional tone and level of directness

Cultural context

- References, metaphors, and humor often need cultural adaptation
- Forms of address and titles vary across cultures
- Some concepts or expressions may not have direct equivalents

Discourse markers and fillers

- Words like "well," "you know," "like" that structure conversation
- These serve different functions across languages
- Need to find natural equivalents rather than literal translation

In the modern world of scientific research, where English is the lingua franca, publishing scientific articles in English is crucial. It opens the door to global communication, knowledge sharing, and collaboration between researchers from all over the world. However, the process of writing a scientific article in English can be fraught with difficulties, especially for those for whom English is not their native language. The notion Scientific style refers to a specific writing style used in scientific literature, particularly in research papers and academic publications. Here are the key characteristics:

Purpose and Structure

Emphasizes precision, objectivity, and logical flow of ideas

Uses clear, unambiguous language to present methods, data, and conclusions

Follows a standardized structure (introduction, methods, results, discussion)

Language Features

Uses technical terminology specific to the field

Employs passive voice when describing procedures ("The samples were analyzed")

Avoids emotive language or personal opinions

Prioritizes concise, direct statements over flowery prose

Data Presentation

Incorporates quantitative evidence and statistical analysis

Uses formal citations to reference previous work

Presents findings through tables, figures, and graphs

Explicitly states limitations and potential sources of error

Writing Conventions

Maintains third-person perspective

Uses present tense for established facts and past tense for specific experiments

Defines specialized terms and abbreviations upon first use

Avoids colloquialisms and informal language

The challenges authors face can range from language barriers, such as difficulties with grammar and choosing appropriate terminology, to more specific academic requirements, such as adhering to formatting standards and article structure. In

addition, it is important to consider cultural differences in the scientific community and understand the publication process and communication with international publishers.

In this article, we examine the most common problems authors face when writing scientific articles in English and offer practical tips and recommendations on how to overcome these problems. The aim of the paper is to help researchers effectively communicate their ideas and research results in an international context while ensuring high quality and accuracy of scientific communication. Language barrier

1. Knowledge Dissemination

- Popular science texts make complex scientific ideas accessible to non-experts. Translating these texts expands their reach, allowing people from non-English-speaking regions to access cutting-edge information.
- Editing ensures the material remains engaging, accurate, and culturally appropriate.

2. Bridging the Language Gap

- English is often the dominant language in scientific research. Translating such texts into other languages helps democratize access to scientific knowledge.
- This can inspire innovation and contribute to global education, particularly in countries with limited access to English-language resources.

3. Cultural Sensitivity

- Effective translation requires adapting content to align with the cultural norms and values of the target audience.
- Research in this field ensures the essence of the text is preserved while making it relatable to diverse audiences.

4. Precision and Clarity

- Scientific concepts require precise language. Poor translations can lead to misinformation or misunderstanding.
- Research into the editing process ensures translations maintain scientific integrity and clarity.

5. Interdisciplinary Significance

- This research sits at the intersection of linguistics, science communication, and cultural studies, fostering collaboration among diverse disciplines.
- It highlights the importance of both linguistic fluency and scientific literacy for translators and editors.

6. Market and Media Impacts

- Popular science texts are often part of educational materials, media content, or commercial publications. High-quality translations contribute to their market success and educational value.

7. Digital and Global Contexts

- With the rise of digital platforms, the demand for translated and edited scientific content has surged.
- Research helps develop guidelines and tools for adapting texts for digital consumption, ensuring accessibility for wider audiences.

1.1. Peculiarities of professional translation

There are a number of significant differences in the terminology of even similar areas. When performing a technical translation of a text, the translator must not only know both languages well, but also understand the subject, terminology and be able to use it correctly in the translation, using catchy and simple language.

Use the correct terminology and your translations will be flawless. By using the correct terminology, you will receive a consistent and technically accurate translation. The translator must also be proficient in the technical jargon of both languages.

Most technical translations are carried out in writing, so a good technical translator must be able to write well. The main problem of the translator is that, in most cases, the style of writing technical texts differs significantly from language to language even in the same region or, on the contrary, in one or another region, standard rules for drafting technical documentation apply.

Technical translation differs from literary translation. There is no need to convey cultural nuances and there is no need to transform literary techniques into concrete rules. When translating technical documentation, it is only necessary to correctly convey the technical aspects of the text.

Technical texts include such documents as manuals, product descriptions, user manuals, installation instructions, operating manuals, system requirements documents, pre-sale booklets, patents, operating and maintenance instructions, training manuals, technical brochures, technical documentation, user manuals , drawings, technical data, textbooks for distance learning, tender documentation, lists of materials, catalogs, stickers, presentations, safety manuals (for printed and interactive media), software and hardware interfaces, training materials, technical proposals, websites, other marketing materials, magazines, periodicals, scientific journals and much more.

Most technical texts are provided in MS Word format. In some cases, at the request of the client, technical documents are provided in such formats as Adobe Frame Maker, In Design, XML or any other. If the text contains drawings and illustrations, the translation is carried out in the form of footnotes or signatures.

The translator of technical texts must combine experience, technical accuracy, knowledge of the language and quality, as well as guarantee that the translated text meets all established standards. A technical translator must meet strict quality standards. Translation of special texts is a field of translation activity in which professional performance of work is possible only by highly qualified (technical) specialists who are well versed in the subject area and its specific terminology, have a sufficient command of a foreign language and are able to competently express their thoughts in the language of translation. A rather serious problem when translating scientific and technical texts is the problem of non-equivalence of terms. In this case, the translator selects the most appropriate term from the translated language. The translation analysis showed the frequent use of translation transformations in the process of translation of scientific and technical texts (substitutions, omissions, permutations, and additions). Many general characteristics of scientific and technical translation noted in the English language are also present in scientific and technical materials. This, first of all, refers to the informativeness of the text and the associated saturation with terms and definitions of terms. This also applies to the standard and consistent manner of presentation, its nominal character, the relatively wider use of abstract and general concepts, the prevalence of phraseological equivalents of words and semi-terminological stamps. Regarding the syntactic structure, English texts are rich in participial, infinitive and gerundial turns, as well as some other purely book constructions, which sometimes make it difficult to understand the text and pose additional tasks to the translator. Present time prevails in verbs, complex subordinate sentences are found much more often than complex ones, various means of logical connection are widely used. Nominative constructions with a word order uncharacteristic for other regions are widespread. Scientific and technical English texts are characterized by the predominance of simple sentences. A more detailed

analysis shows that strictness in the use of terms and familiar formulations. In English scientific and technical texts, there are emotional epithets, figurative and figurative expressions, rhetorical questions and similar stylistic devices that enliven the narrative and are more typical of a colloquial style or artistic speech. Scientific presentation in English is generally characterized by the sign of nominativeness. The tendency to nominativeness also leads to the replacement of adverbs with prepositional-nominal combinations. Therefore, similar additional clarifications, absent in the original, are often found in the translation. Term saturation is one of the defining characteristics of a scientific and technical text. However, when describing a specific subject situation, a specific scientific and technical sphere, the terms do not allow their incorrect interpretation. In this case, the conscious choice of an analogue can be dictated only by a good knowledge of the given subject. In English scientific and technical texts, a significant place is occupied by various types of abbreviations. It is also possible to note numerous cases of omission of an article, especially a specific one, in special materials. The article is often absent before the names of specific details in technical descriptions and instructions. Personal forms of the verb prevail in the English text.

Below are some key problems associated with this process:

1. Maintaining Scientific Accuracy

- Terminology: Scientific terms often lack direct equivalents in other languages, requiring careful adaptation or explanation to preserve their meaning.
- Nuances: Subtle nuances in English expressions might be misinterpreted or lost during translation, potentially leading to inaccuracies in the scientific explanation.

2. Balancing Simplicity and Precision

- Popular science texts aim to make complex topics understandable to a lay audience. Translators and editors must ensure that the simplification does not compromise scientific precision.
- Finding an equivalent "accessible tone" in another language can be difficult, as some languages may have fewer established conventions for simplifying scientific jargon.

3. Cultural Adaptation

- References and Analogies: Cultural or regional references (e.g., comparisons, idioms, or examples) in the original text may not resonate with the target audience and need to be localized.
- Educational Background: Readers in different cultures may have varying levels of scientific literacy, which can influence the amount of detail or explanation required.

4. Preserving the Author's Voice

- Popular science texts often have a distinctive tone or style, such as humor or a conversational approach, which might be difficult to replicate naturally in another language.
- Translators must strike a balance between preserving the author's voice and ensuring readability for the target audience.

5. Handling Visual and Supplemental Elements

- Many popular science texts include charts, graphs, or illustrations that need localization. Units of measurement, date formats, or symbols might need adjustment for the target audience.
- Captions, labels, or supplemental explanations may need rewriting to align with the translated text.

6. Navigating Lexical and Structural Differences

- English often allows concise phrasing, which may not have a direct equivalent in other languages, leading to longer or more complex sentences.
- Wordplay, metaphors, or double meanings frequently used in popular science to engage readers can be hard to translate effectively.

7. Ensuring Consistency

- Consistency in terminology and style is crucial, particularly in longer texts or when multiple translators/editors work on the same project.
- Maintaining coherence between translated sections and ensuring alignment with established conventions in the target language can be time-consuming.

8. Legal and Ethical Considerations

- Some countries or audiences may have specific views on scientific topics (e.g., evolution, climate change, or genetically modified organisms). Translators and

editors must handle these issues sensitively to avoid controversy while staying true to the original text.

Strategies to Address These Challenges

- Collaborative Efforts: Engage subject-matter experts to verify accuracy and ensure proper adaptation of scientific content.

- Cultural Consultation: Involve native speakers of the target language familiar with popular science to ensure the text resonates with the audience.

- Quality Assurance: Implement rigorous review processes, including proofreading, consistency checks, and audience testing.

- Localization Tools: Use specialized glossaries and translation memory tools to maintain consistency and accuracy in terminology.

Translation requires a deep understanding of both grammar and culture. Translators must know the principles of the language and the habits of the people who use it. And even for the most experienced professionals, uncertainty and resentment are just familiar feelings they often experience. Now let's look at some of the most common obstacles to translation and their characteristics. A figure of speech is a word or phrase that has a different meaning than the literal meaning. So, it is important to remember that being creative and being accurate are not the same thing. If a translator uses metaphors, personification, puns, sarcasm, hyperbole and other forms of figures of speech, but does not have a command of the native language or cultural principles, the translation may miss the mark, or, as may happen in some cases, be offensive. Using a metaphor such as "call" can be ambiguous for your target audience in most languages. This is where the saying "hard to translate" could really apply. In addition to having a native speaker who understands exactly how to successfully translate figures of speech, it is very important that your translator is well versed in the culture. Sarcasm is a bitter, harsh, or blunt expression that usually means the opposite of any literal meaning. Sarcasm usually loses its meaning when literally translated into another language. Translations have been known to cause serious misunderstandings and misinterpretations. This cannot always be done, as the tone, nuance, and style of the content may incorporate sarcasm to convey the desired message. Sometimes, a

translator may suggest using a local idiom that may be more appropriate and useful when used in the target language they wish to convey the message into. Syntactic issues may arise from syntactic parallels, the way the passive voice is rendered, focus (from what point of view the story is told), or rhetorical figures of speech such as hyperbaton (an inversion of the natural organization of words) or anaphora. – repetition of a word or part at the beginning of a line or sentence. Lexical-semantic problems can be solved by referring to dictionaries, glossaries and professionals. These problems include terminological alternatives, neologisms, semantic gaps or lexical networks. Contextual synonyms and antonyms affecting polysemous units: synonyms and antonyms aim at acceptance, which depends on the context to determine which meaning is correct.

What types of translations are there and what are their features

Few people know that translation studies is an independent scientific discipline that, as a separate subject, examines the features of translating texts of various styles. We will not delve into the theory and will try to briefly formulate what the institute allocates dozens of hours for - the main types of translation and the features of each of them.

Types of translation

The main difference is oral and written translation. There is also machine translation, which we have already talked about. But, since the computer does not care what text it translates, and our agency does not do such work, we will get by with simply mentioning it. Oral and written translations have more differences than it might seem.

Classifications of oral translation

Oral translations are divided into the following types:

Consecutive translation - the translator conveys the text heard in parts, phrases or paragraphs, and the speaker pauses so that the linguist translates what was said;

Simultaneous translation - if in the first case the translator has time to comprehend what he heard and formulate phrases, with simultaneous translation he works in a time crunch mode, the translation is done simultaneously with how the words were spoken;

Parallel translation - if both previous types of translation have one direction from one language to another, then with simultaneous translation the translator first translates the source language into the target language, and then the same thing, but back.

There are two more types of translations, which are usually distinguished separately:

• written translation of what was heard (most often this is only an exercise or a recorded translation of an audio recording);

• sight translation - the translator reads what is written in one language and translates it out loud into another

Types of text translation

Professional translators can work with any type of translation, but in order not only to fully convey the meaning of the content of the source, but also to take into account many nuances, it is necessary to understand the specifics and be able to reflect it in the translated text. For example, almost all translators will be able to make a literal translation of a poem. But, in order to reflect the meaning, to convey what the poet wanted to express, and even more so to make the finished text no less a good poetic work, poetic talent is required.

Therefore, real professionals specialize in specific types of texts: And all of them can be divided into several main groups:

• literary translation;

• scientific and technical translation;

• socio-publicistic.

Features of literary translation

This type of translation includes all fiction (poetry, prose, folklore), journalism and literary criticism. In order to work in this direction, the translator should ideally have literary talent. At a minimum, he is required to be able to clothe the translated meaning in a literary form that matches the writing style of the translated author. The complexity of this type of translation is in the many phrases inherent in the original language, images that are understandable to native speakers and mean nothing to those who are not familiar with them. The translator is required to create so-called

semasiological connections, which are impossible under time constraints. Therefore, literary translation can only be written.

Scientific and technical translations

Scientific and technical translations are in turn divided into several separate groups:

• technical - a category that includes translations of documentation for technological equipment, instructions, textbooks on exact disciplines, technical articles and reports, and other texts filled with specialized terms;

• economic – translations of accounting documents, international agreements and acts, tax documentation, financial reports and other documentation related to finance;

• legal – translation of regulations, laws, contracts and agreements, books and articles on jurisprudence, other legal texts;

• automotive – vehicle operating manuals, descriptions of electrical circuits for cars and other equipment, instructions for repair or use of technical equipment and fluids;

• medical – translation of medical histories, medical reports, medical scientific and popular science articles, results of analysis of instructions for medical equipment and machinery, surgery protocols.

To work with scientific and technical translations, a specialist must have knowledge in a specific field related to the original text. Naturally, it is impossible to be an expert in all fields, so translators specialize in certain areas. So, within the framework of the listed specializations, there are also separate types of translation: radio engineering, military, chemical, etc. Knowledge is necessary not only for understanding the meaning of the translated text, but also for the correct application of terms and concepts.

Socio-political translation

Differs from all steel ones, if only because such texts mix informational and propaganda texts with scientific ones. In addition, unlike fiction, texts related to politics or social movements use linguistic cliches. Most often, socio-political documents, magazines, newspapers, radio and television broadcasts require translation. The main function of this type of translation is informational. At the same time, the original texts can be designed to influence the public, to perform the task of processing public opinion. To be able to do this type of translation, you need the

appropriate political knowledge, understanding of the processes and the environment in which they are written or spoken.

We have listed the main types of translation, but there are also those that do not fall into the listed types, for example, translations of religious texts or oral everyday speech. But for our clients, it is important that our agency employs specialists who have both the experience and knowledge that allow them to perform any type of translation without any exceptions.

1.2. Translation English-language popular science texts general characteristics

Outlining the key characteristics of effective popular science writing is the necessary part of translation and editing study.

Popular science writing makes complex scientific concepts accessible and engaging for a general audience, while maintaining accuracy. Here are the essential elements:

Clear, jargon-free language: Technical terms are either avoided or carefully explained using familiar analogies and examples. For instance, instead of saying "mitochondrial DNA undergoes oxidative phosphorylation," a science writer might say "the cell's power plants convert nutrients into energy."

Narrative structure: Science is presented as a story, often including:

- The process of discovery
- The personalities and motivations of researchers
- Challenges and setbacks faced
- The broader implications for society

Strong hooks and leads: Opening paragraphs grab attention by connecting to readers' everyday experiences or highlighting surprising findings. For example, "Every time you remember your first kiss, your brain rewrites that memory slightly differently."

Human interest: The writing connects scientific concepts to human experiences, emotions, and real-world applications. It might describe how a discovery affects people's lives or include quotes from scientists about their personal journey.

Visual language: Abstract concepts are made concrete through vivid metaphors and descriptive imagery. For example, describing DNA replication as "a biological photocopy machine that makes slight errors with each copy" helps readers grasp the concept of genetic mutation.

Context and relevance: The writing explains why the science matters and how it fits into the bigger picture of human knowledge and society. This might include historical background, current applications, and future implications.

Active voice and present tense: These create immediacy and engagement, making the science feel current and dynamic rather than static facts in textbooks.

Reader engagement: The writing anticipates and addresses readers' questions and potential confusion points. It might pose questions directly to readers or invite them to imagine scenarios that illustrate scientific principles.

Balance of depth and accessibility: While concepts are simplified, the writing doesn't oversimplify to the point of inaccuracy. Key nuances and uncertainties in the science are acknowledged when relevant. It is important to outline the key characteristics of translating English-language popular science texts:

Terminology Management:

- Balance between technical accuracy and accessibility - scientific terms need precise translation while maintaining readability for a general audience
- Careful handling of specialized vocabulary, often keeping English terms when they're commonly used in the target language
- Consistency in terminology throughout the text

Adapting Style:

- Popular science typically uses engaging, conversational language that should be preserved in translation
- Metaphors and analogies may need cultural adaptation while maintaining their explanatory function
- Active voice is common and should generally be maintained when possible
- Short, clear sentences are preferred over complex structures

Content Considerations:

- Cultural references may need localization or additional explanation
- Units of measurement might need conversion depending on target audience
- Visuals and diagrams often require translated captions and labels
- Citations and references should follow target language conventions

Common Challenges:

- Finding the right register between academic and casual language
- Maintaining clarity while accurately conveying complex concepts
- Adapting English-specific wordplay or science puns appropriately
- Handling neologisms and emerging scientific terminology

Translating English-language popular science texts comes with unique characteristics and challenges. These texts aim to make complex scientific concepts accessible to a general audience while maintaining accuracy and engaging the reader. Below are some general characteristics to consider when translating such texts:

1. Clarity and Simplicity

Popular science texts prioritize clear and straightforward language. Translators should:

- Avoid overly technical jargon unless it's explained.
- Use simple sentence structures that mirror the original tone.
- Replace complex terms with their layperson-friendly equivalents, where possible.

2. Accessibility

The goal is to engage a broad audience, so translators must:

- Adapt idiomatic expressions and cultural references for the target audience.
- Ensure any scientific concepts are explained in a way that matches the readers' assumed level of understanding.

3. Engaging Style

Popular science texts often employ storytelling, humor, or analogies to maintain reader interest. Translators should:

- Preserve the narrative flow and stylistic elements of the original.
- Ensure analogies and humor translate appropriately into the target culture.

4. Accuracy

While simplifying content, the text must remain scientifically accurate. Translators need to:

- Research terms or concepts unfamiliar in the target language.
- Work closely with subject matter experts if necessary.

5. Adaptation of Cultural Elements

Popular science texts written for English-speaking audiences often reference cultural phenomena (e.g., movies, sports, historical events). Translators should:

- Substitute references with equivalent ones familiar to the target audience, if applicable.
- Provide brief explanations if substitution isn't feasible.

6. Visual Elements

Charts, diagrams, and other visuals often accompany these texts. Translators must:

- Translate captions and labels accurately.
- Collaborate with designers to ensure visual coherence in the translated version.

7. Tone

These texts usually adopt an informal yet authoritative tone. Translators should:

- Match the tone of the original, whether it's conversational, humorous, or explanatory.
- Ensure the tone resonates with the cultural norms of the target audience.

Common Challenges in Translation:

- Retaining Scientific Accuracy: Striking a balance between simplification and accuracy is often difficult.
- Cultural Contexts: Adapting culture-specific metaphors and idioms while retaining the original text's intent.
- Linguistic Constraints: English is often more concise than other languages, potentially requiring restructuring.
- Specialized Vocabulary: Identifying terms with equivalents or crafting new terms when none exist in the target language.

Tips for Success:

- Familiarize with both the scientific subject and popular science conventions in the target language.
- Focus on the intended purpose of the text: to inform and entertain.
- Test translations on non-experts in the target audience to assess accessibility and engagement.

Translation of scientific texts plays a unique role in the lives of people all over the world. This type of text is different from any other, as scientific work covers different genres and styles, and pursues different goals. In any field, these texts -

both theoretical and technical - are intended to shape thinking and develop the imagination.

Given their nature, scientific texts can be difficult to translate. Differences in style and content must be taken into account. Their concepts are mostly universal and do not depend on region or language. In the field of literature, figurative expressions and colloquial units are often difficult to translate into another language. The social sciences are even more complex: they explore ideologies and concepts that have different meanings depending on the historical period and place of application.

Challenges of scientific translation

• What style is the text written in?

• What format is it in?

• What is its purpose?

• Does the text contain graphs, pictures, etc.?

• What audience is the document intended for?

• What degree of cultural assimilation is required? and others.

Based on the answers, you can develop a translation strategy and determine whether it is appropriate to use translation software. The more technical and universal the text is by nature, the more effective the use of CAT tools is — as opposed to lexically heterogeneous documents.

Let's pay special attention to humanitarian texts: they often use terms and concepts that are understood within a certain region, were understood during a certain period, or have different interpretations in cultures that conflict with each other. Accordingly, standard settings are not suitable for localization and cultural adaptation of such documents.

Everyone also need to be careful not to allow inappropriate modernization. If the text is about history and past periods, the use of modern concepts, ideas, beliefs, and even lexical or grammatical forms can have an anachronistic effect.

Most translators strive to ensure that the translated documents are perceived as if they were created in the target language. This is not always possible with scientific texts, because the target audience reads a scientific text to learn something.

Accordingly, the audience adapts to the document, and not the other way around. That is, a scientific translation may well sound like a translation.

What to pay attention to

Before translating a scientific text, pay attention to several aspects.

1. Terminology. You should immediately decide whether localization of lexical units, phrases and concepts is necessary. Or, on the contrary, it is worth leaving them in their original form.

2. Technical jargon, abbreviations, etc. How to deal with such units? They can be explained in notes, translated by transcreation or transliteration.

3. Topic. If the text is specialized, its translation should be performed by specialists in the relevant subject. Knowing the "language" of the industry, the translator will appropriately use the corresponding lexical units and ensure a competent, professional result. For example, the term "vector" has different meanings in biology and physics, and even more so in sociology.

4. Syntax. In most subjects, translators independently correct the text for the purpose of localization, but in scientific works this can harm the content. Many authors convey their emotions and intentions not only through the choice of vocabulary and terminology, but also through syntax. For example, sometimes it is not worth breaking long complex sentences in translation into several simple ones - this can completely change the "mood" of the article.

1.3. Popular science texts translation main aspects

When translating content into English, it's essential to match the language style to the purpose, audience, and context of the original text. Here are some common English language styles you might consider, along with their characteristics:

1. Formal English

Purpose: Academic papers, official documents, business communication.

Features:

Complex sentence structures.

Precise and advanced vocabulary.

Avoids contractions and colloquialisms.

Examples:

Original: "We need to solve this quickly."

Translation: "It is imperative that we resolve this matter promptly."

2. Informal English

Purpose: Casual conversations, social media, personal emails.

Features:

Simple and conversational language.

Frequent use of contractions, idioms, and slang.

Examples:

Original: "We need to solve this quickly."

Translation: "We've gotta sort this out fast."

3. Literary/Creative English

Purpose: Poetry, novels, creative writing.

Features:

Use of vivid imagery, metaphors, and varied sentence rhythms.

May include archaic or artistic expressions.

Examples:

Original: "The sun set over the mountains."

Translation: "The fiery orb dipped behind the jagged peaks, painting the sky in hues of amber and crimson."

4. Technical English

Purpose: Manuals, scientific documents, instructions.

Features:

Objective tone, precise terminology.

Short, clear sentences, avoiding ambiguity.

Examples:

Original: "Turn the machine off and clean the filter."

Translation: "Power off the device and remove debris from the filter compartment."

5. Business English

Purpose: Corporate communications, emails, reports.

Features:

Professional tone, clarity, and conciseness.

Avoids overly technical or informal language.

Examples:

Original: "Let's meet to discuss the project."

Translation: "I propose scheduling a meeting to discuss the project in further detail."

6. Journalistic English

Purpose: News articles, editorials.

Features:

Informative, concise, and fact-focused.

May use a mix of formal and engaging tones, depending on the audience.

Examples:

Original: "Many people are upset about the changes."

Translation: "The recent changes have sparked widespread discontent among the community."

7. Academic English

Purpose: Research papers, scholarly articles.

Features:

Analytical and evidence-based language.

Formal tone with discipline-specific vocabulary.

Examples:

Original: "This theory needs more research."

Translation: "Further empirical investigation is required to substantiate this theoretical framework."

8. Legal English

Purpose: Contracts, laws, legal briefs.

Features:

Formal, precise, and often verbose.

Legal jargon and specific phrasing.

Examples:

Original: "You have to follow the rules."

Translation: "The aforementioned party is obligated to adhere to the stipulated regulations."

Tips for Translating Styles:

Understand Context: Identify the original text's purpose and audience.

Adapt Tone: Match the tone and register of the source text while adhering to English conventions.

Preserve Nuances: Translate idiomatic expressions into equivalent English idioms or rephrase them for clarity.

Cultural Sensitivity: Adapt cultural references or provide explanatory context when necessary. To outline the key aspects of translating popular science texts is important to stress main aspects. This requires balancing scientific accuracy with accessibility.

Key aspects to consider:

1. Terminology Management
   - Maintain consistent scientific terms throughout the translation
   - Consider whether to keep technical terms in their original form or translate them
   - Provide clear explanations for complex concepts while preserving scientific accuracy
   - Create glossaries to ensure consistency across larger projects
2. Audience Adaptation
   - Adjust the language level to match the target audience's scientific literacy
   - Consider cultural differences in how science is communicated in different regions

- Preserve engaging and accessible tone while maintaining credibility
- Ensure examples and analogies resonate with the target culture

3. Visual Elements

- Pay attention to captions, labels, and diagrams
- Ensure measurements and units are properly converted when necessary
- Maintain consistency between text references and visual elements
- Consider cultural differences in data visualization preferences

4. Stylistic Considerations

- Preserve the engaging narrative style typical of popular science
- Balance colloquial language with scientific precision
- Maintain the author's voice while adapting to target language conventions
- Handle metaphors and analogies appropriately for the target culture

Tips for translating popular science texts into English:

- Prioritize clarity over literal translation - focus on conveying the key scientific concepts accurately while making them accessible
- Research field-specific terminology carefully to use the accepted English terms
- Maintain an engaging, conversational tone while preserving scientific accuracy
- Consider your target audience's background knowledge when deciding how much to explain technical concepts
- Use analogies and examples that will resonate with English-speaking audiences
- Break down complex sentences into simpler structures while preserving meaning

2. Guidance on editing English popular science content:

- Ensure consistency in terminology throughout the piece
- Remove jargon or explain it clearly when it's necessary
- Check that metaphors and analogies actually clarify rather than confuse
- Verify that scientific facts and concepts are accurately represented
- Create smooth transitions between ideas
- Break up dense paragraphs into more digestible chunks

- Use active voice where possible to improve readability

- Include relevant context for scientific concepts

- Fact-check all scientific claims and statistics

3. Combined translation and editing considerations:

- Always aim for accuracy first, then improve readability

- Maintain a consistent voice throughout the piece

- Consider cultural context when translating examples or analogies

- Pay special attention to units of measurement and their conversions

- Be careful with scientific humor or wordplay - it may need cultural adaptation

- Watch for false friends (words that look similar but have different meanings)

- Use reliable scientific reference materials in both languages

- Consider consulting subject matter experts for technical verification

Conclusions to Chapter 1

Translating English-language popular science texts involves a delicate balance between accuracy, readability, and the preservation of scientific integrity. Here are some key conclusions on the main aspects of this process:

1. Clarity and Accessibility: Popular science texts aim to engage a broad audience, including non-specialists. Translators must simplify complex scientific jargon without diluting the essence of the content. They need to ensure the translation is clear and accessible to readers with varying levels of scientific knowledge.

2. Cultural Adaptation: Certain scientific concepts or references may be deeply rooted in the cultural or academic context of the source language. A translator must adapt these references for the target audience, taking into account local scientific traditions and familiar terms. This may require research and creative solutions to bridge cultural and linguistic gaps.

3. Scientific Accuracy: Translators must maintain the precision and accuracy of the scientific content. A thorough understanding of both the subject matter and the terminology used is crucial. Mistranslations can lead to misunderstandings or misrepresentation of scientific facts, potentially undermining the credibility of the text.

4. Tone and Style: Popular science texts often strike a conversational or engaging tone to maintain reader interest. Translators must capture the voice and style of the original author while making the text resonate with the target audience. This includes ensuring that the tone is neither too formal nor overly simplistic, preserving the author's intent.

5. Localization of Examples: Examples, metaphors, and analogies used in popular science texts often relate to the culture of the source language. Translators should adapt these examples to reflect local realities, ensuring they remain relatable and effective in conveying the scientific concept.

6. Flow and Cohesion: Maintaining the flow and logical structure of the text is essential. Scientific content, even when simplified, should not lose its coherence in translation. A well-structured translation helps the reader follow the argument and concepts without confusion.

7. Ethical Considerations: The translation of popular science texts carries the responsibility of conveying truth and not distorting scientific facts. This means ensuring that the nuances of the original text, including disclaimers, hypotheses, and evidence-based arguments, are preserved accurately.

In conclusion, translating English-language popular science texts requires a deep understanding of both the scientific content and the cultural context of the target audience. Balancing clarity, accuracy, and engagement is key to producing a translation that is both informative and enjoyable for readers.

CHAPTER 2. EDITING ENGLISH-LANGUAGE POPULAR SCIENCE TEXTS MAIN ASPECTS

One of the main problems that non-English speaking authors face when writing scientific articles is the language barrier. This barrier can manifest itself in difficulties with grammar, punctuation, and the choice of precise scientific terminology. It is important to look at each of these aspects in more detail:

Grammar and punctuation in English can be especially confusing for those who are just learning the language. Incorrect use of tenses, sentence structure, and punctuation marks can significantly change the meaning of what is stated. To minimize errors, it is recommended to use specialized text checking programs such as Grammarly or ProWritingAid. It is also useful to involve native speakers or professional editors in editing. An important aspect of writing scientific articles is the use of specific terminology. Incorrect choice of words can lead to misunderstandings or distortion of scientific concepts. To improve their skills in this area, authors can help by reading academic texts in English, participating in international conferences and seminars, and using professional dictionaries and databases.

Continuously improving language skills is key to successful research writing. Online courses, such as those offered on Coursera or EdX, can be a great way to improve both your written and spoken skills. It is also helpful to practice the language in everyday life, such as by talking to native speakers or watching academic lectures in English. Adhering to academic standards is a critical element in the process of writing a research paper in English. These standards help ensure that your research communication is clear, accurate, and professional. Here are some key aspects to consider: Academic style is formal and precise. It is important to avoid slang, informal expressions, and common phrases that can diminish the scientific significance of the text. It is also important to use an objective tone and avoid subjective statements unless they are supported by relevant data or research. A research paper should follow a clear structure, typically including an introduction, methodology, results, discussion, and conclusion. Each section should logically follow from the previous one and contribute to the overall study. Clearly delineating sections helps the reader follow your research more easily.Plagiarism is a serious ethical issue in the academic world. To avoid

unintentional plagiarism, it is necessary to carefully cite all sources and use programs to check for the uniqueness of the text. It is also important to respect the intellectual property of other researchers and correctly handle confidential information.

Adherence to academic standards not only improves the quality of a research paper, but also facilitates its acceptance in reputable scientific journals. Authors should constantly be aware of current trends in academic writing and follow generally accepted norms and standards in their field of research. This will help them succeed in the international scientific community.

Editing English-language popular science texts involves several key aspects to ensure the content is accurate, engaging, and accessible to a broad audience. Here's an overview of the main steps in the process:

1. Understanding the Audience

- Identify Target Audience: Understand the education level, interests, and background of the intended readers. For popular science, the audience is often non-specialists.
- Tone and Language: Use conversational yet informative language, avoiding jargon unless necessary and defining complex terms.

2. Content Evaluation

- Accuracy: Verify the scientific facts, theories, and data presented.
- Relevance: Ensure the content focuses on topics that are timely, intriguing, or have practical applications for the audience.
- Clarity: Break down complex ideas into understandable concepts using analogies, examples, and visuals where appropriate.

3. Structure and Flow

- Logical Organization: Arrange content in a clear, logical progression, starting with basic concepts and building to more complex ideas.
- Sections and Headings: Divide text into manageable sections with descriptive headings to guide the reader.
- Transitions: Ensure smooth transitions between paragraphs and sections to maintain readability.
-

4. Language and Style

- Active Voice: Prefer active voice to make the text more dynamic and engaging.

- Conciseness: Eliminate redundancy and avoid lengthy, convoluted sentences.

- Engagement: Use storytelling, humor, or surprising facts to capture interest.

5. Editing for Precision and Consistency

- Terminology: Maintain consistent use of terms and units throughout the text.

- Grammar and Syntax: Check for grammatical accuracy and refine sentence structure.

- Style Guide: Adhere to a specific style guide (e.g., APA, Chicago, or in-house guidelines) as required.

6. Visual and Supplementary Elements

- Illustrations and Graphs: Include visuals to complement the text and clarify complex concepts.

- Footnotes and References: Provide citations for scientific claims or further reading without overwhelming the narrative.

- Captions: Add concise, explanatory captions for visuals.

7. Feedback and Review

- Peer Review: Collaborate with experts in the field for fact-checking and accuracy.

- Audience Testing: Conduct reviews with representative readers to ensure the text is comprehensible and engaging.

8. Final Proofreading

- Typographical Errors: Identify and fix spelling, punctuation, or formatting issues.

- Readability: Perform a final read-through to confirm the text flows smoothly and maintains audience interest.

2.1. Peculiarities of editing popular science texts while translation

Proper formatting and structure of an article play a key role in the process of writing and publishing a scientific paper in English. These elements ensure ease of reading, understanding, and ensure compliance with the standards of scientific publications. Let's take a closer look at what you should pay attention to:

The formatting of the article should comply with the requirements of the selected scientific journal. This includes the rules for formatting headings, paragraphs, lists, tables, and figures. For example, it is important to consider the citation style (APA, MLA, Chicago, etc.), line spacing, font size, and margins. Journal websites usually have detailed guidelines for authors, following which you can avoid many mistakes.

The formatting of the list of references and citations is a critical aspect, as it demonstrates scientific integrity and the depth of the research. It is important to strictly follow the chosen citation style, make sure that the sources used are relevant and reliable. Each citation in the text should have a corresponding reference in the list of references.

There are various tools and programs that can help in formatting a scientific article. Word processing programs such as Microsoft Word or Google Docs offer features that automate the formatting process (e.g., heading styles, automatic bibliography formatting). There are also specialized programs such as EndNote or Zotero that make it easier to manage citations and bibliographies. It is important to remember that neat and correct formatting not only improves the appearance of the article, but also emphasizes the professionalism of the author. It facilitates the peer review process and increases the chances of successful publication. Careful adherence to journal guidelines and the use of appropriate tools will help achieve these goals. Publishing a research article and interacting with publishers in English can be a significant challenge, especially for researchers whose first language is not English. Let's look at the main issues that may arise at this stage and how to effectively address them.

Choosing the right journal for publication is a critical step. It is necessary to consider the reputation of the journal, its specialization, target audience, and citation index. It is recommended to study the last few issues of the journal to understand how your

work meets its scope and standards. It is also important to check whether the journal has a history of pseudoscientific publications or a poor level of peer review.

Communication with journal editors and responses to reviews require clarity, brevity, and professionalism. In a letter to the editor, you should briefly outline the essence of the research, its novelty, and its significance for the readers of the journal. When responding to reviews, it is important to carefully consider all comments, correctly and reasonably respond to them, even if you do not agree with some of them. Interaction with international publishers may involve correspondence, negotiations on publication terms, and possibly participation in conferences. It is important to maintain a professional and respectful tone of communication, and to formulate your thoughts and requests clearly and concisely. Remember that effective communication often takes time and patience, especially when working with publishers from different cultural and linguistic contexts.

In general, successful publication in an international scientific journal requires not only scientific competence, but also the ability to communicate effectively in English, as well as an understanding of the processes and requirements of a modern academic publishing house. Knowledge of these nuances and appropriate preparation will significantly increase chances of successful publication.

Editing popular science texts during translation involves a unique set of challenges and considerations. Here are some peculiarities to keep in mind:

1. Balancing Accuracy and Accessibility
- Scientific Accuracy: It is essential to preserve the accuracy of the original scientific content, ensuring that facts, figures, and terminologies are correctly translated.
- Clarity for Non-Specialists: The target audience is often lay readers. The language must simplify complex ideas without distorting their meaning.

2. Adapting to Cultural Context
- Localized Examples: References to specific examples, idioms, or cultural phenomena may need to be adapted to resonate with the target audience.

- Units and Standards: Measurements, units, and technical conventions should align with local norms (e.g., converting miles to kilometers).

3. Preserving the Author's Voice

- Tone and Style: Popular science often uses a conversational, engaging tone to captivate readers. The translation must maintain this tone while ensuring readability in the target language.

- Humor and Wordplay: Jokes, puns, or linguistic nuances might require creative reinterpretation rather than direct translation.

4. Specialized Vocabulary

- Terminology Consistency: Using correct scientific terms and ensuring their consistency throughout the text is crucial. This might involve consulting glossaries or domain experts.

- Avoiding Jargon Overload: Strike a balance between technical precision and reader-friendliness, often simplifying terms without losing essential meaning.

5. Visual and Structural Elements

- Figures, Graphs, and Charts: Captions and annotations often need rephrasing or localization.

- Footnotes and References: Check that citations and references are accessible in the target language or provide equivalent resources if the original is unavailable.

6. Addressing Implicit Knowledge

- Assumed Background: What the original audience may find familiar might not be known to the target audience. Adding brief explanations or glosses can help bridge the knowledge gap.

- Contextualizing Advances: Recent scientific developments mentioned in the text might require additional context for clarity.

7. Legal and Ethical Considerations

- Copyright and Permissions: Ensure permissions are in place for translating copyrighted materials, especially visuals and quoted texts.

- Accuracy and Responsibility: Translators and editors bear a responsibility to avoid errors that could mislead readers or distort scientific understanding.

Tips for Effective Editing

1. Collaborate with Experts: Work with subject-matter experts to ensure content accuracy.

2. Use Parallel Texts: Reference similar texts in the target language to maintain consistency in style and terminology.

3. Prioritize Reader Experience: Always review the text from the perspective of the intended audience, ensuring it is engaging and comprehensible.

Technical translation refers to the process of converting specialized content, such as manuals, technical documents, and engineering specifications, from one language to another. It is a demanding task due to the complexity of technical language and the need for accuracy. Below are the key features, problems, and rules associated with technical translation:

Features of Technical Translation

Specialized Vocabulary

Technical documents often contain industry-specific terminology that requires deep knowledge of the subject matter.

Terms may not have direct equivalents in the target language.

Consistency

Repeated use of terms and phrases must be consistent to ensure clarity and coherence.

Glossaries and translation memory tools are often used to maintain uniformity.

Precision and Accuracy

Even minor errors can lead to significant consequences, especially in fields like medicine, engineering, or law.

Ambiguity must be avoided.

Target Audience

The level of technical knowledge of the intended readers influences the choice of language and detail.

Culture and Localization

Measurements, dates, units, and symbols may need to be adapted for the target audience.

Cultural nuances can impact the interpretation of technical concepts.

Problems in Technical Translation

Ambiguity in the Source Text

Poorly written or ambiguous source material can make it challenging to interpret the original meaning.

Lack of Equivalents

Some terms or concepts might not exist in the target language, requiring creative solutions or explanatory translations.

Rapid Evolution of Terminology

Fields like IT and biotechnology frequently introduce new terms, making it difficult to stay up-to-date.

Overlapping Meanings

Some technical terms may have multiple meanings depending on context.

Cultural and Linguistic Barriers

Misunderstanding cultural differences can lead to inappropriate translations.

Formatting and Visual Elements

Diagrams, tables, and charts in technical documents often require adaptation, which can complicate the translation process.

Rules for Effective Technical Translation

Understand the Subject Matter

Translators should have a strong grasp of the technical field or collaborate with subject-matter experts.

Use Standardized Terminology

Utilize industry-standard glossaries, dictionaries, and termbases to ensure consistency and accuracy.

Maintain Clarity and Simplicity

Avoid overly complex sentence structures and strive for straightforward communication.

Preserve Original Format

Adhere to the structure, style, and format of the source document unless localization adjustments are necessary.

Validate with Experts

Have the translation reviewed by a technical professional in the field to confirm its accuracy.

Adapt for Localization

Consider cultural and regional factors, such as units of measurement, technical standards, and legal requirements.

Use Translation Tools Wisely

Employ Computer-Assisted Translation (CAT) tools for consistency but rely on human oversight for nuanced or complex texts.

Technical translation is a nuanced and specialized field requiring expertise in both linguistics and the relevant technical domain. Overcoming its challenges involves careful planning, collaboration with experts, and adherence to industry standards. By addressing potential problems proactively and following established rules, technical translators can produce precise, reliable, and user-friendly translations.

The algorithm of genre-stylistic analysis of a popular science text aims to systematically examine the characteristics of the text to identify its genre-specific and stylistic features. Below is a structured algorithm for such an analysis:

- Preliminary Analysis

Identify the Purpose of the Text:

Determine if the text aims to inform, explain, popularize, or persuade regarding scientific concepts.

Assess its intended audience (e.g., general public, students, or specialists).

Determine the Domain of Knowledge:

Identify the scientific field (e.g., physics, biology, or psychology) to contextualize the language and concepts used.

- Structural Analysis

Examine the Text's Organization:

Identify sections such as introduction, body, conclusion, and supplementary materials (e.g., diagrams, charts).

Check for clear headings and subheadings.

Analyze the Narrative Structure:

Determine if the text follows a logical progression (e.g., problem-solution, cause-effect, chronological order).

- Lexical Analysis

Identify Vocabulary Usage:

Distinguish between specialized scientific terms and layperson-friendly explanations.

Look for metaphorical language, analogies, or simplifications to make complex ideas accessible.

Assess Lexical Density:

Evaluate the balance between technical jargon and everyday language.

- Syntactic Analysis

Sentence Structure:

Check for the use of short, simple sentences versus complex, compound sentences.

Note the use of passive versus active voice.

Punctuation and Emphasis:

Identify rhetorical devices such as colons, dashes, and italics used for emphasis or clarity.

- Stylistic Features

Tone and Style:

Determine if the tone is formal, semi-formal, or informal.

Look for features such as enthusiasm, curiosity, or a sense of wonder in the tone.

Engagement Techniques:

Identify rhetorical questions, direct address to the reader, or storytelling elements.

Note the use of humor, anecdotes, or examples to engage the audience.

Intertextuality:

Check for references to other scientific works, historical contexts, or cultural analogies.

- Visual and Non-Textual Elements

Incorporation of Visuals:

Analyze diagrams, graphs, tables, or illustrations for clarity and relevance.

Multimodal Features:

Assess the interplay between text and visuals (e.g., captions explaining diagrams).

- Pragmatic Analysis

Author's Intent:

Infer the author's purpose: Is it to educate, simplify, or entertain?

Reader's Perspective:

Consider how the text might be perceived by the intended audience.

- Evaluation and Conclusion

Genre Adherence:

Determine how well the text conforms to the conventions of popular science writing.

Effectiveness:

Assess whether the text achieves its goals of accessibility, clarity, and engagement while maintaining scientific accuracy.

Stylistic Uniqueness:

Identify any distinctive stylistic features that set the text apart from others in the genre.

This algorithm can be refined and adjusted based on the specific features of the text and the scope of the analysis.

2.2. Editing English language popular science texts key approaches

To improve the quality and facilitate the process of writing a research article in English, authors can use various auxiliary resources and tools. Their use contributes to the efficiency of research work and simplifies the task of adhering to academic and language standards.

There are many online tools that can assist in the process of writing and editing research articles:

• Grammar and spell checkers, such as Grammarly or Ginger, help correct language errors.

• Plagiarism checkers, such as Turnitin or Copyscape, help ensure the originality of the text.

• Bibliography formatting tools, such as Zotero or EndNote, facilitate the process of formatting references and bibliography.

Translators and language services can be useful for the initial translation of the text or for understanding complex scientific literature. However, it is important to remember that automatic translators, such as Google Translate, may not always accurately convey scientific terms and concepts. Therefore, it is recommended to use them as an auxiliary tool, and check and correct the final version of the text manually or with the help of professional translators.

In case of difficulties with independent writing or translation of the article, authors can seek help from professional editors or translators. They will not only help with linguistic aspects, but can also give valuable advice on the structure and content of the article. It is important to choose specialists with experience in the academic field and, if possible, with knowledge of the specifics of your field of research. Effective use of these resources and tools significantly simplifies the process of writing scientific articles in English and contributes to their quality. This allows researchers to focus on the most important thing - developing and communicating their scientific ideas to the international academic community. Translation of scientific and technical literature is not just working with text, it is a process that requires deep knowledge in various fields of science and technology. Scientific and technical translation includes not only linguistic, but also specific technical aspects that must be accurately and correctly

conveyed into another language. Errors and inaccuracies in translation can lead to serious consequences, including man-made disasters, so the quality of such a translation must be at the highest level. Scientific and technical translation is an area of activity in which the object of the translator's attention is various types of scientific-style texts: research papers, articles, reports, textbooks, reviews, etc. We will tell you about the specifics of this area of translation activity and what a specialist needs to work in this area.

Main types of scientific texts

A scientific text as an object of translation can be presented in a variety of forms. First of all, scientific and technical articles come to mind, but in addition to them, you will have to work with:

• operating instructions,

• certificates of conformity,

• textbooks.

Any text written in a characteristic scientific style will be the object of scientific and technical translation.

Features of the scientific style of speech

Scientific style is a language that is used in the field of scientific, educational, scientific and technical activities. Features of the translation of scientific texts are determined by the features of the style of presentation itself.

Content

The text should provide the most complete information on the topic under consideration, each of its elements should have a clearly defined semantic load.

Logicality of presentation

The narration is conducted in a strict logical order, the connection between individual elements of the text is easily traced.

Accuracy and objectivity

The text should be completely unambiguous, transparent for perception.

In its pure form, scientific style is most often found in fundamental literature: monographs, dissertations, research reports.

In a more applied sphere – for example, in articles for scientific and technical journals, production or patent documents – we are talking about scientific and technical style: it is distinguished by a more concise presentation and, often, an informative and reference nature.

Separately, it is necessary to take into account the peculiarities of translating popular science texts – for example, articles, reviews and feedback for popular science publications.

In such materials, characteristic elements of scientific and technical and journalistic styles of presentation are closely intertwined, so the translator must be versed in both of these areas.

Features of translating scientific and technical texts

Features of translating scientific and technical literature are dictated by the features of the scientific style of speech, which we discussed above.

High saturation of the text with terms

Often, the material provided for translation consists almost entirely of general scientific and highly specialized terms, abbreviations, as well as specialized vocabulary - derivatives of terms or commonly used words that change their meaning within the context and become terms.

Moreover, some terms can be "false friends of the translator", changing their meaning when switching between languages.

Large sentences

The richness of scientific and technical texts often leads the author to the need to make multiple clarifications. The result is the active use of participial and adverbial participial phrases, complex sentences.

Characteristic stylistics

For example, "the author's we", cliched structures, predominantly nominal character of sentence morphology, etc.

All features of the original text must be preserved in the translation, which creates special requirements for the translator's competencies.

Scientific and technical translator skills

The main criteria for the quality of scientific and technical translation are accuracy, completeness and compliance with the style.

Therefore, in order to cope with the above-mentioned stylistic and lexical features of the translation of scientific and technical texts, the translator must:

• be extremely careful, preserving the meaning of the text as accurately as possible,

• understand the subject matter of the text – or have the opportunity to consult with a specialist in the field,

• be able to work with sources, dictionaries, translation and scientific databases,

• perform high-quality pre- and post-translation analysis,

• have a high level of written proficiency in the target and source languages.

Often, scientific and technical translators have a specialized education in the relevant scientific or technical field – or simply specialize in a certain area, maintaining deep immersion in the subject matter.

Editing popular science texts requires a careful balance between accuracy, clarity, and engagement. Below are key approaches to editing such texts:

1. Simplify Complex Concepts

- Avoid Jargon: Replace technical terms with simpler language or explain them in context.
    - Example: Replace "photosynthesis" with "the process plants use to make food from sunlight, water, and carbon dioxide."
- Use Analogies: Relate complex ideas to everyday experiences to aid understanding.
    - Example: Comparing DNA to a blueprint for building an organism.

2. Maintain Accuracy

- Verify Information: Ensure all facts, figures, and claims are up-to-date and cited from reputable sources.
- Avoid Oversimplification: While simplifying, ensure the explanation does not distort the scientific truth.

3. Structure for Clarity

- Logical Flow: Organize information logically, often moving from general concepts to specific details.
- Short Sentences and Paragraphs: Break content into digestible chunks for easier reading.
- Subheadings and Bullet Points: Use these to guide readers through the text and emphasize key points.

4. Engage the Reader

- Use Storytelling: Incorporate anecdotes or real-world examples to illustrate concepts.
- Pose Questions: Encourage curiosity by asking rhetorical or guiding questions.
- Address the Audience Directly: Use "you" or "we" to create a conversational tone.

5. Enhance Visual and Textual Appeal

- Incorporate Visuals: Use charts, diagrams, and images to complement explanations.
- Highlight Key Terms: Use bold or italicized text to draw attention to critical points.

6. Adjust Tone for Audience

- Match Audience Knowledge Level: Adapt language to suit readers' expertise, whether they are laypersons or science enthusiasts.
- Balance Formality: Maintain an approachable tone while respecting the subject's seriousness.

7. Test Readability

- Read Aloud: Ensure the text flows naturally and is easy to understand when spoken.

- Seek Feedback: Have a non-expert read the text to ensure clarity and engagement.

The author's style in popular science texts is typically characterized by a blend of accessibility, clarity, and engagement. Here are the key elements of such a style:

1. Clarity

Simple Language: Avoids jargon or technical terms unless necessary, and explains them when used.

Logical Flow: Presents ideas in a clear and logical sequence, often building from basic concepts to more complex ones.

Analogies and Metaphors: Uses relatable comparisons to explain complex ideas.

2. Engagement

Conversational Tone: Mimics everyday speech to create a friendly and approachable narrative.

Storytelling: Incorporates anecdotes, historical contexts, or real-world applications to make the material more compelling.

Humor and Wit: Often includes light humor or clever phrasing to keep readers entertained.

3. Educational Appeal

Illustrative Examples: Uses real-world examples or case studies to ground abstract concepts in reality.

Visual Aids: Relies on diagrams, charts, and illustrations to complement the text and enhance understanding.

Questions and Rhetorical Devices: Poses questions to provoke curiosity and encourage readers to think critically.

4. Precision

Accuracy: Ensures all scientific information is factually correct and up-to-date.

Balanced Detail: Includes enough detail to inform without overwhelming the reader.

5. Audience Awareness

Accessibility: Tailors content to a general audience, avoiding assumptions about prior knowledge.

Relevance: Connects scientific concepts to everyday life or current events to maintain reader interest. It's necessary to outline the key challenges in translating scientific texts for a general audience:

1. Balancing technical accuracy with accessibility. The translator must preserve scientific precision while making concepts understandable to non-experts. This often requires careful judgment about which technical terms to keep, which to simplify, and how to explain complex ideas without oversimplification.

2. Cultural adaptation. Scientific metaphors and examples that work well in one culture may not resonate with another. The translator needs to find culturally appropriate alternatives while maintaining the scientific meaning.

3. Terminology challenges. While scientific terms often have standardized translations, popularized science frequently uses creative analogies and everyday language to explain concepts. These can be particularly challenging to translate while preserving both meaning and engagement.

4. Maintaining the engaging style. Popular science texts often use humor, wordplay, and creative language to make science accessible and interesting. Translating these elements while preserving both scientific accuracy and reader engagement requires significant skill.

5. Different levels of scientific literacy across cultures. What counts as "general knowledge" varies between countries due to differences in education systems and cultural emphasis on science. Translators must gauge their target audience's likely background knowledge.

6. Handling scientific jargon. While academic translations might keep technical terms unchanged, popular science requires decisions about which terms to translate, which to explain, and which to replace with simpler alternatives.

    The genre and stylistic features of popular science texts play a significant role in translation, as the translator must balance accuracy, accessibility, and the engaging qualities that make such texts appealing to a general audience. Below are key points to consider regarding the genre, stylistic features, and their implications in translation:

1. Genre Features of Popular Science Style

Popular science texts aim to communicate complex scientific concepts to a non-specialist audience. Key features include:

Purpose:

To inform and educate while being accessible and engaging.

To bridge the gap between specialized scientific literature and general public understanding.

Audience:

Typically laypeople with little or no prior knowledge of the topic.

Texts are often designed to spark curiosity and interest in science.

Structure:

Logical organization with clear introductions, explanations, and conclusions.

Often includes analogies, examples, and anecdotes to simplify complex ideas.

2. Stylistic Features of Popular Science Texts

Stylistic elements are crucial in making the text both understandable and engaging:

Lexical Features:

Use of everyday language with limited technical jargon.

When specialized terms are necessary, they are often accompanied by explanations.

Incorporation of vivid imagery and metaphors to clarify abstract concepts.

Syntactic Features:

Preference for shorter, simpler sentences for readability.

Use of rhetorical questions and exclamatory sentences to maintain reader interest.

Varied sentence structures to create a dynamic and engaging tone.

Tone and Style:

Conversational and approachable tone.

Engaging and sometimes humorous or informal to sustain reader interest.

Balances authority (scientific accuracy) with relatability (reader-friendly language).

Visual Elements:

Diagrams, charts, and images often accompany the text to enhance comprehension.

Layouts are visually appealing and easy to navigate.

3. Challenges and Strategies in Translation

Translating popular science texts involves preserving their purpose and style while adapting to the linguistic and cultural norms of the target audience:

a. Preserving Accessibility and Engagement

Challenge: Conveying scientific accuracy while maintaining readability.

Strategy: Simplify complex sentences without losing meaning and adapt idiomatic expressions or metaphors to the cultural context.

b. Handling Terminology

Challenge: Dealing with specialized terms that may not have direct equivalents in the target language.

Strategy: Use glossaries or explanatory phrases and ensure consistency in terminology.

c. Adapting Cultural References

Challenge: Popular science texts often include culturally specific examples, humor, or idioms.

Strategy: Replace or adapt cultural references to make them relevant and understandable for the target audience.

d. Maintaining the Author's Voice

Challenge: Retaining the original author's tone and intent while adapting for stylistic norms of the target language.

Strategy: Analyze the source text's tone and style, and reflect these in the translation using appropriate linguistic techniques.

e. Visual and Formatting Considerations

Challenge: Maintaining the integrity of visual aids and layout design during translation.

Strategy: Collaborate with graphic designers or editors to ensure the translated text integrates smoothly with visuals.

The translation of popular science texts is a nuanced task requiring the translator to be both a communicator and an interpreter. Understanding the genre's stylistic features ensures that the translation maintains the original text's balance between scientific rigor and accessibility, while cultural and linguistic adaptations make it equally engaging and relevant for the target audience.

2.3 Main problems of scientific popular texts translation and editing

Scientific popular texts are an essential bridge between the complex world of scientific research and the broader audience eager to understand and appreciate scientific advancements. Translating these texts, however, is no small feat. The process is fraught with numerous challenges, ranging from maintaining accuracy and preserving the intended meaning to ensuring accessibility and readability for the target audience. This essay explores the key difficulties encountered in translating scientific popular texts and the strategies employed to overcome them.

1. Maintaining Terminological Precision

One of the primary challenges in translating scientific texts is dealing with specialized terminology. Scientific disciplines often use precise terms that may not have direct equivalents in the target language. Translators must carefully select terms that convey the exact meaning while considering the cultural and linguistic nuances of the audience. For example, translating terms in physics, biology, or medicine requires not only linguistic expertise but also a deep understanding of the subject matter.

2. Balancing Accuracy with Simplicity

Scientific popular texts aim to make complex ideas understandable to non-specialists. Translators face the challenge of simplifying content without compromising its accuracy. Over-simplification can lead to misinterpretation, while excessive technicality may alienate the audience. Achieving this balance requires skillful paraphrasing and a thorough grasp of both the source material and the needs of the target audience.

3. Cultural Adaptation

Scientific communication often includes cultural references, idiomatic expressions, or examples tailored to the source audience. Translators must adapt these elements to resonate with the target audience while preserving the intended impact. For instance, references to specific measurement units, historical milestones, or societal norms may need to be localized to ensure relatability.

4. Handling Metaphors and Analogies

Metaphors and analogies are commonly used in scientific popular texts to explain abstract or complex concepts. These rhetorical devices often rely on cultural or linguistic contexts that may not translate directly. Translators must find equivalent expressions in the target language or devise new ones that retain the original intent and clarity.

5. Preserving the Author's Style and Tone

Scientific popular texts often have a distinct narrative style designed to engage readers and convey enthusiasm for the subject matter. Translators must preserve this style while ensuring the text remains coherent and appealing in the target language. This task is particularly challenging when the source and target languages differ significantly in their syntactic and stylistic conventions.

6. Ensuring Readability

The ultimate goal of scientific popular texts is to inform and educate. Translations must be readable and engaging, which involves careful attention to sentence structure, vocabulary, and flow. Translators must avoid overly complex or lengthy sentences that could deter readers, opting instead for clarity and conciseness.

Strategies to Overcome Translation Challenges

To address these challenges, translators employ several strategies:

Collaborating with Subject Matter Experts: Working closely with experts ensures accurate interpretation of technical content and terminology.

Using Specialized Resources: Glossaries, dictionaries, and databases specific to scientific fields can help maintain consistency and precision.

Engaging in Cultural Research: Understanding the cultural background of the target audience aids in effective localization.

Revising and Testing: Iterative revisions and feedback from native speakers or target readers help refine translations and enhance readability.

Translating scientific popular texts is a complex but rewarding endeavor that requires a delicate balance of linguistic skill, subject matter expertise, and cultural sensitivity. By overcoming these challenges, translators play a vital role in making science accessible and fostering a deeper appreciation for knowledge among diverse

audiences. Their work not only bridges language barriers but also contributes to global scientific literacy and understanding.

Conclusions to Chapter 2

Editing English-language popular science texts involves a balance of clarity, accuracy, and engagement. Here are some key conclusions and main aspects to consider when editing such texts:

1. Clarity and Simplicity

- Avoid jargon: Popular science texts should be accessible to a broad audience, which means minimizing specialized vocabulary or explaining it clearly when necessary.
- Conciseness: Eliminate redundancies and avoid long-winded explanations. Aim for brevity without sacrificing essential details.
- Structure: Organize the text logically. Use short paragraphs, clear subheadings, and bullet points to break down complex ideas.

2. Accuracy

- Scientific integrity: Ensure that the information is scientifically sound and up-to-date. Any claims made should be backed by credible sources.
- Avoid oversimplification: While simplicity is key, it's important not to distort or oversimplify complex concepts. Misleading simplifications can undermine the text's reliability.

3. Engagement

- Storytelling: Good popular science writing often incorporates storytelling elements to engage readers, whether through anecdotes, historical context, or vivid descriptions of scientific processes.
- Analogies and metaphors: These tools can help clarify abstract concepts but must be used carefully to avoid inaccuracies or misunderstandings.

4. Tone and Style

- Conversational yet authoritative: The tone should be accessible and inviting, but also convey the credibility of the scientific content.
- Active voice: Where possible, use the active voice to create more dynamic and direct prose.

5. Audience Awareness

- Target audience: Understand the knowledge level of the audience. Adjust the complexity of the text accordingly (e.g., writing for general readers vs. an informed audience).

- Cultural sensitivity: Ensure that language and examples are culturally neutral and inclusive.

6. Visual Aids

- Graphs, charts, and images: These can complement the text and help clarify complex ideas. Ensure they are clearly labeled and easy to interpret.

- Captions and annotations: These should be informative, offering further explanation without overwhelming the reader.

7. Consistency

- Terminology: Ensure consistent use of terminology throughout the text to avoid confusion.

- Units of measurement: Use the appropriate units and, when necessary, provide conversions to common systems (e.g., metric vs. imperial).

8. Pacing

- Flow: Maintain a good rhythm in the text, moving smoothly between sections and concepts. Avoid overwhelming the reader with too much technical detail in one go.

- Breaks and pauses: Use headings and paragraph breaks to allow readers to process information.

Editing popular science requires a careful balance between making the content engaging and maintaining scientific accuracy and integrity. Successful editing will ensure that the text is both educational and enjoyable for the intended audience.

CONCLUSIONS

Translating and editing English-language popular science texts presents several challenges and considerations. Below is an outline of key conclusions on this topic:

1. Complexity of Terminology

- Challenge: Popular science texts often include technical terms that must be accurately translated to preserve meaning.
- Conclusion: Translators must balance technical precision with accessibility, ensuring terms are neither oversimplified nor overly technical for the target audience.

2. Cultural and Linguistic Adaptation

- Challenge: English-language texts often reference cultural or scientific norms that may not resonate with the target audience.
- Conclusion: Effective translation requires localization, adapting idiomatic expressions, examples, and references to align with the cultural and intellectual context of the new audience.

3. Maintaining the Author's Voice

- Challenge: Popular science authors often use a specific tone, style, or humor to engage readers, which can be difficult to replicate in another language.
- Conclusion: Translators and editors should strive to preserve the author's voice while ensuring clarity and readability in the target language.

4. Simplification Without Oversimplification

- Challenge: Translating scientific concepts for a general audience involves simplifying complex ideas without losing accuracy or nuance.
- Conclusion: Close collaboration with subject matter experts can help ensure the integrity of the science while making it comprehensible.

5. Ambiguity and Nuance

- Challenge: Popular science texts often use metaphors or analogies to explain concepts, which may not directly translate.
- Conclusion: Translators should find equivalent analogies or explanations in the target language, ensuring the intended message is conveyed effectively.

6. Visual and Structural Elements

- Challenge: English-language popular science texts may rely on graphs, tables, or specific layouts to communicate ideas, which may need adaptation.
- Conclusion: Editors should ensure that these elements are appropriately adapted to fit the conventions and expectations of the target audience.

7. Audience Expectations

- Challenge: The target audience for popular science texts can vary widely in educational background and familiarity with scientific concepts.
- Conclusion: Translators and editors should clearly identify the target demographic and tailor the language, tone, and complexity accordingly.

8. Time Sensitivity and Scientific Accuracy

- Challenge: Scientific knowledge evolves rapidly, and translations might lag behind new discoveries or updates.
- Conclusion: Translators and editors should work to ensure the text reflects current understanding, potentially updating references or providing context for outdated material.

Collaboration between translators, editors, and subject matter experts is essential to overcoming these challenges. Investing time in understanding both the source material and the cultural nuances of the target audience ensures a successful translation and editing process.

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   Offers insights and resources for translators working with scientific and technical texts.
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This paper examines how integrating translation into language learning activities can enhance students' English language skills.

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This study explores how English as a Foreign Language (EFL) teachers in Libya utilize translation in their classrooms, providing insights into its practical application.

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This research examines the extent to which EFL teachers in Libya employ translation in their teaching practices and the reasons behind its use.

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INTERNATIONAL TRANSLATORS' UNITS:

International translators' unions and organizations exist to represent and support professional translators, interpreters, and language service providers globally. These unions focus on promoting fair labor practices, advocating for the recognition of translation and interpretation as skilled professions, and offering resources for professional development. Below are some key unions and organizations operating internationally:

1. International Federation of Translators (FIT)

- **Founded:** 1953
- **Headquarters:** Paris, France
- **Overview:** FIT is a global federation of national associations of translators, interpreters, and terminologists. It works to promote the profession, improve working conditions, and enhance quality standards in language services.
- **Website:** www.fit-ift.org

2. World Association of Sign Language Interpreters (WASLI)

- **Founded:** 2003
- **Headquarters:** London, UK
- **Overview:** WASLI supports professional development and networking for sign language interpreters around the world. It aims to improve access to high-quality interpreting for deaf communities.
- **Website:** www.wasli.org

3. International Association of Conference Interpreters (AIIC)

- **Founded:** 1953
- **Headquarters:** Geneva, Switzerland
- **Overview:** AIIC focuses on the professional interests of conference interpreters. It establishes codes of ethics, promotes training, and advocates for high standards in conference interpreting.
- **Website:** www.aiic.org

4. Translators Without Borders (TWB)

- **Founded:** 1993
- **Headquarters:** Danbury, USA
- **Overview:** Although not a union, TWB is a nonprofit organization that provides language services for humanitarian efforts. It focuses on making critical information accessible to people in need, particularly during crises.
- **Website:** www.translatorswithoutborders.org

5. European Language Industry Association (ELIA)

- **Founded:** 2005
- **Headquarters:** Brussels, Belgium
- **Overview:** ELIA supports European language service companies, but it also offers resources and networking opportunities for individual professionals.
- **Website:** www.elia-association.org

6. American Translators Association (ATA)

- **Founded:** 1959
- **Headquarters:** Alexandria, Virginia, USA
- **Overview:** While focused on the U.S., ATA has an international membership. It provides certification, resources, and advocacy for translators and interpreters worldwide.
- **Website:** www.atanet.org

7. European Union of Associations of Translation Companies (EUATC)

- **Founded:** 1994
- **Headquarters:** Brussels, Belgium
- **Overview:** The EUATC promotes best practices in the language industry and fosters cooperation among translation companies across Europe.
- **Website:** www.euatc.org

These organizations often work in tandem with national and regional unions to create a cohesive network for language professionals. Many also host conferences, publish research, and provide opportunities for continued professional education.

International interpreters' associations are organizations that promote the interests of interpreters worldwide. They often work to establish professional standards, provide training, and advocate for the recognition of interpretation as a skilled profession. Here are some prominent international interpreters' associations:

1. **International Association of Conference Interpreters (AIIC)**: Founded in 1953, AIIC is the global professional association for conference interpreters. It sets high standards for the profession and works to ensure the rights and professional development of interpreters.

2. **International Federation of Translators (FIT)**: FIT is a worldwide federation of translators' and interpreters' associations. It promotes the interests of professional translators and interpreters, providing a network for collaboration and the development of industry standards.

3. **American Translators Association (ATA)**: Although primarily U.S.-focused, the ATA is one of the largest and most respected organizations in the world for translators and interpreters. It offers certification programs and advocates for the professional recognition of interpreters.

4. **European Union of Associations of Translation and Interpretation (EUATIS)**: This organization aims to strengthen collaboration between associations of translators and interpreters across Europe. It advocates for professional recognition and the improvement of working conditions for interpreters.

5. **International Association of Professional Translators and Interpreters (IAPTI)**: IAPTI is an international non-profit organization that brings together professional translators and interpreters worldwide to foster collaboration and advance the profession.

6. **National Association of Judiciary Interpreters and Translators (NAJIT)**: Although U.S.-based, NAJIT is a key player in advocating for legal

interpreters and translators, promoting ethical standards and providing professional resources.

These associations help interpreters network, share knowledge, access training, and advocate for fair wages and working conditions within the industry.

PROFESSIONAL WEBSITES

1. Asociación Profesional Española de Traductores e Intérpretes

http://www.apeti.org.es/html/ic_info.htm

2. Association de l'industrie de la langue/Language Industry Association – AILIA www.ailia.ca

3. Asociación española de normalización y certificación - AENOR

http://www.aenor.es/desarrollo/inicio/home/home.asp?cambioidioma=s&pag=0

4. Association of Translators and Interpreters of Ontario - ATIO

www.atio.on.ca

5. Association Internationale des Interprètes de Conférence - AIIC

http://www.aiic.net/

6. Australian Institute of Interpreters and Translators - AUSIT

www.ausit.org/ethics

7. Bow Valley College

http://www.bowvalleycollege.ca/courses_programs/continuing_ed/interpreting.htm

8. California Healthcare Interpreting Association - CHIA

http://cms.chiaonline.org/

9. CHOATE, Denise Look. Labour Issues and Interpreters in the California Trial Courts: An Exchange. Proteus 8:3&4. 1999

www.najit.org/proteus/v8n3-4/exchange_v8n3-4.htm

10. Colegio mexicano de intérpretes de conferencia CMIC

http://www.interpretacion.org/index.php?option=com_content&task=view&id=29&Itemid=73

11. Cross Cultural Communications

http://www.culturecrossroads.net/resources.htm#code

12. Cross Cultural Healthcare Program. Bridging the Gap: A Basic Training for Medical Interpreters. Seattle, Washington. 1996.

http://www.xculture.org/interpreter/overview/ethics.html

Diversity Rx. http://www.diversityrx.org/html/MOIP.htm

13. Healthcare Interpretation Network - HIN

www.healthcareinterpretationnetwork.ca

14. National Standard Guide for Community Interpreting Services

Healthcare Interpretation Network

International Association of Conference Interpreters - AIIC

http://www.aiic.net/ViewPage.cfm/article24.htm

15. International Association for Translation and Intercultural Studies - IATIS

http://www.iatis.org/index.php

16. Institute of Linguists. Code of Conduct of the National Register of Public
    Service Interpreters. United Kingdom. www.nrpsi.co.uk
17. International Medical Interpreters Association

http://www.imiaweb.org

18. Mirta Vidal Orrantia Interpreting and Translating Institute

http://www.orgsites.com/ny/mvoiti/

19. Michigan University Interpreter Services

http://www.mgh.harvard.edu/interpreters/afr.asp

20. National Association of Judiciary Interpreters and Translators - NAJIT

http://www.najit.org/ethics.html

21. National Accreditation Authority for Translators and Interpreters - NAATI

http://www.naati.com.au/

22. National Council on Interpreting in Healthcare - NCIHC

www.ncihc.org/

23. Registry for Interpreters for the Deaf. Code of Ethics

http://www.rid.org/coe03.pdf

24. The Critical Link

http://www.criticallink.org/English/index2.htm

25. Utah Code of Ethics

http://www.aslterps.utah.gov/policy_code.jsp

26. Vancouver Community College

http://www.continuinged.vcc.ca/interpreting/index.htm

27. ProZ.com
A popular platform for translators and translation job seekers. It offers job postings, forums, and a directory of freelancers.

28. TranslatorsCafe
A community of language professionals offering freelance opportunities, a translator directory, and forums for networking.

29. Gengo
A translation service that connects clients with freelance translators. Translators can apply to work on translation jobs across various languages.

30. Smartling
A translation management platform with a global community of translators. It focuses on enterprise translation needs.

31. Freelancer
A freelance job site that includes translation opportunities among many other categories of work.

32. TransPerfect
A large translation company that offers a variety of translation services. Translators can apply to become part of their global team.

33. One Hour Translation
A platform offering quick translation services with a large network of professional translators.

34. Upwork
A well-known freelancing platform that allows translators to find clients, create profiles, and bid on projects.

35. LanguageLine Solutions
A company providing interpretation and translation services. They offer opportunities for translators in various languages.

36. The American Translators Association (ATA)
An association for translation professionals, offering certification, directories, and job listings.

GUIDELINES FOR USING ABBREVIATIONS IN SCIENTIFIC LITERATURE

Using abbreviations in scientific literature can improve clarity and conciseness, but they must be used carefully to ensure readability and understanding. Here are some key guidelines to follow:

1. Define Abbreviations

First Use: Always spell out the full term the first time it appears in the text, followed by the abbreviation in parentheses. For example, "Polymerase Chain Reaction (PCR)".

Consistency: After the initial definition, use the abbreviation consistently throughout the rest of the document.

Exception: Some very common abbreviations, such as DNA, RNA, or ATP, do not need to be spelled out as they are widely understood.

2. Avoid Overuse

Use abbreviations sparingly. Overusing them can make the text harder to read, especially if the document is complex.

If an abbreviation is used only a few times, it's better to avoid it altogether.

3. Context Matters

Consider your audience. If you're writing for a specialized audience, you can use more abbreviations. For a general audience, limit abbreviations to only the most common and well-known terms.

4. Standard Abbreviations

Use standard and widely accepted abbreviations, such as "mg" for milligrams, "ml" for milliliters, or "s" for seconds.

Refer to style guides like the International System of Units (SI) for scientific abbreviations to ensure you're following the standard.

5. List of Abbreviations

For lengthy papers with many abbreviations, consider providing a list of abbreviations and their meanings at the beginning or end of the document for easy reference.

6. Punctuation

Do not use periods after abbreviations for units of measurement (e.g., "mL" not "m.l").

For acronyms (e.g., PCR, DNA), do not use periods unless the abbreviation contains periods by convention (e.g., "U.S.A.").

7. Abbreviation in Figures and Tables

Abbreviations should also be defined in figure legends or table captions if they appear there.

Make sure that the figure or table is understandable even without the full text.

8. Scientific Journals

Always consult the specific guidelines of the journal or conference you're submitting to. Some journals may have specific rules for using abbreviations, including a recommended list or restrictions on their usage.

9. Avoid Redundancy

If the full term is mentioned frequently, consider using the abbreviation even earlier in the document to avoid repetition of the same lengthy term.

By following these guidelines, you can ensure that your scientific writing remains clear, concise, and professional.

Abbreviations are frequently used in scientific literature to simplify writing and improve readability. Here's a list of common abbreviations found across various scientific disciplines:

General Scientific Abbreviations:

- **e.g.**: exempli gratia (for example)
- **i.e.**: id est (that is)
- **etc.**: et cetera (and so on)
- **vs.**: versus (against)
- **et al.**: et alii (and others)

- **cf.**: confer (compare)
- **NB**: nota bene (note well)
- **ca.**: circa (approximately)
- **deg.**: degree (e.g., temperature, angles)

Measurement and Units:

- **m**: meter
- **cm**: centimeter
- **mm**: millimeter
- **nm**: nanometer
- **μm**: micrometer
- **kg**: kilogram
- **g**: gram
- **mg**: milligram
- **L**: liter
- **mL**: milliliter
- **s**: second
- **min**: minute
- **h**: hour
- **K**: kelvin (temperature)
- **atm**: atmosphere (pressure)
- **Pa**: pascal (pressure)
- **Hz**: hertz (frequency)
- **ppm**: parts per million

Biology and Medicine:

- **DNA**: deoxyribonucleic acid
- **RNA**: ribonucleic acid
- **ATP**: adenosine triphosphate
- **PCR**: polymerase chain reaction
- **mRNA**: messenger RNA
- **BPA**: bisphenol A

- **HDL**: high-density lipoprotein
- **LDL**: low-density lipoprotein
- **BP**: blood pressure
- **HR**: heart rate
- **TCA**: tricarboxylic acid
- **HIV**: human immunodeficiency virus
- **COVID-19**: coronavirus disease 2019

Physics and Chemistry:

- **UV**: ultraviolet
- **IR**: infrared
- **X-ray**: X-radiation
- **NMR**: nuclear magnetic resonance
- **SEM**: scanning electron microscope
- **TEM**: transmission electron microscope
- **pH**: potential of hydrogen (acidity or alkalinity)
- **CO_2**: carbon dioxide
- **O_2**: oxygen
- **H_2O**: water

Statistics and Research:

- **CI**: confidence interval
- **p-value**: probability value
- **SD**: standard deviation
- **SE**: standard error
- **ANOVA**: analysis of variance
- **t-test**: Student's t-test
- **RCT**: randomized controlled trial

Mathematical Abbreviations:

- $\sum$: summation
- Δ: delta (change)
- π: pi (mathematical constant)

- **log**: logarithm
- **sin**, **cos**, **tan**: sine, cosine, tangent
- √: square root
- ∫: integral

Technology and Computing:

- **CPU**: central processing unit
- **RAM**: random access memory
- **GPU**: graphics processing unit
- **API**: application programming interface
- **URL**: uniform resource locator
- **HTML**: hypertext markup language
- **AI**: artificial intelligence
- **IoT**: Internet of Things

Geography and Geology:

- **GPS**: global positioning system
- **e.g.**: east greenwich (used in geodesy)
- **N/S/E/W**: North/South/East/West
- **km**: kilometer
- **mi**: mile

These abbreviations are commonly used in scientific research papers, and their specific meaning often depends on the field of study.

Here is a list of some common abbreviations that appear in popular texts, along with their full forms:

General Abbreviations:

1. **etc.** - et cetera (and other things)
2. **i.e.** - id est (that is)
3. **e.g.** - exempli gratia (for example)
4. **vs.** - versus (against)
5. **Dr.** - Doctor
6. **Mr.** - Mister

7. **Mrs.** - Mistress (commonly used for married women)

8. **Ms.** - Miss (used for women regardless of marital status)

9. **Prof.** - Professor

10. **Jr.** - Junior (used after a name to distinguish it from the father's name)

11. **Sr.** - Senior (used after a name to distinguish it from the son's name)

12. **p.m.** - post meridiem (after noon)

13. **a.m.** - ante meridiem (before noon)

Academic Abbreviations:

1. **Ph.D.** - Doctor of Philosophy

2. **B.A.** - Bachelor of Arts

3. **M.A.** - Master of Arts

4. **M.Sc.** - Master of Science

5. **GPA** - Grade Point Average

6. **E.g.,** - example given

Social Media/Internet:

1. **lol** - laughing out loud

2. **brb** - be right back

3. **ttyl** - talk to you later

4. **omg** - oh my God

5. **bff** - best friends forever

6. **idk** - I don't know

7. **dm** - direct message

8. **lmao** - laughing my ass off

9. **smh** - shaking my head

Business/Legal:

1. **CEO** - Chief Executive Officer

2. **CFO** - Chief Financial Officer

3. **VIP** - Very Important Person

4. **RSVP** - Répondez s'il vous plaît (Please respond)

5. **TBD** - To be determined

6. **TBA** - To be announced

7. **NDA** - Non-disclosure agreement

Medical Abbreviations:

1. **ICU** - Intensive Care Unit

2. **MRI** - Magnetic Resonance Imaging

3. **BP** - Blood Pressure

4. **OTC** - Over-the-counter

5. **ER** - Emergency Room

6. **RX** - Prescription

7. **ADHD** - Attention Deficit Hyperactivity Disorder

Miscellaneous:

1. **ATM** - Automated Teller Machine

2. **FYI** - For your information

3. **DIY** - Do it yourself

4. **ASAP** - As soon as possible

5. **FAQ** - Frequently Asked Questions

6. **ETA** - Estimated Time of Arrival

This list represents common abbreviations, but the usage of abbreviations can vary depending on context and region

Here is a list of common abbreviations found in technical translation, divided by categories. These abbreviations can appear across various fields like engineering, IT, science, and others:

General Technical Abbreviations:

- **API**: Application Programming Interface
- **CPU**: Central Processing Unit
- **RAM**: Random Access Memory
- **USB**: Universal Serial Bus
- **UI**: User Interface
- **UX**: User Experience
- **Wi-Fi**: Wireless Fidelity
- **OS**: Operating System
- **URL**: Uniform Resource Locator
- **HTML**: HyperText Markup Language
- **CSS**: Cascading Style Sheets

Engineering and Manufacturing:

- **CAD**: Computer-Aided Design
- **CAM**: Computer-Aided Manufacturing
- **PLC**: Programmable Logic Controller
- **SCADA**: Supervisory Control and Data Acquisition
- **VFD**: Variable Frequency Drive
- **BOM**: Bill of Materials
- **P&ID**: Piping and Instrumentation Diagram
- **HVAC**: Heating, Ventilation, and Air Conditioning
- **OEM**: Original Equipment Manufacturer
- **MRO**: Maintenance, Repair, and Overhaul

Scientific and Medical:

- **DNA**: Deoxyribonucleic Acid
- **MRI**: Magnetic Resonance Imaging
- **CT**: Computed Tomography

- **PET**: Positron Emission Tomography

- **ICU**: Intensive Care Unit

- **ECG**: Electrocardiogram

- **FDA**: Food and Drug Administration

- **CDC**: Centers for Disease Control and Prevention

- **HIV**: Human Immunodeficiency Virus

- **AIDS**: Acquired Immune Deficiency Syndrome

  IT & Software Development:

- **SQL**: Structured Query Language

- **JSON**: JavaScript Object Notation

- **XML**: Extensible Markup Language

- **VPN**: Virtual Private Network

- **DNS**: Domain Name System

- **IDE**: Integrated Development Environment

- **Git**: Distributed Version Control System

- **SaaS**: Software as a Service

- **IaaS**: Infrastructure as a Service

- **PaaS**: Platform as a Service

  Telecommunications and Networking:

- **LAN**: Local Area Network

- **WAN**: Wide Area Network

- **VPN**: Virtual Private Network

- **HTTP**: HyperText Transfer Protocol

- **FTP**: File Transfer Protocol

- **IP**: Internet Protocol

- **DNS**: Domain Name System

- **VoIP**: Voice over Internet Protocol

  Business and Finance:

- **ROI**: Return on Investment

- **KPI**: Key Performance Indicator

- **B2B**: Business to Business
- **B2C**: Business to Consumer
- **GDP**: Gross Domestic Product
- **MVP**: Minimum Viable Product
- **R&D**: Research and Development
- **CEO**: Chief Executive Officer
- **CFO**: Chief Financial Officer
- **CIO**: Chief Information Officer

Legal:

- **NDA**: Non-Disclosure Agreement
- **IPR**: Intellectual Property Rights
- **LLC**: Limited Liability Company
- **CPA**: Certified Public Accountant
- **ADR**: Alternative Dispute Resolution
- **D&O**: Directors and Officers (insurance)

SUMMATION

The qualification paper is dedicated to the study of translating and editing English-language popular science texts and several challenges, as these texts need to balance accessibility, accuracy, and engagement while addressing linguistic and cultural differences.

At present, there is a need to distinguish popular science texts of editing and translation as a special type of translation activity and a special theory that studies this type of activity. From the point of view of linguistics, the characteristic features of scientific and technical literature extend to its style, grammar and vocabulary. The most typical lexical feature of scientific and technical literature is the saturation of the text with terms and terminological phrases, as well as the presence of lexical constructions and abbreviations. The main task of scientific and technical translation is to convey the information communicated in an extremely clear and precise manner. This is achieved by a logically sound presentation of factual material, without explicitly expressed emotionality. The style of scientific and technical literature can be defined as formal-logical. It should be noted that the wide and intensive development of the scientific style has led to the formation of numerous genres within its framework, such as: article, monograph, textbook, patent description (description of invention), abstract, annotation, documentation, catalog, reference book, specification, instruction, advertising (having features of a journalistic style). Each genre has its own individual stylistic features, but they do not violate the unity of the scientific style, inheriting its general features and characteristics. Among the current problems of modern translation studies, an important place is occupied by the development of such a branch as translation of scientific and technical texts, since in connection with the accelerating scientific and technical progress, this type of translation activity is becoming increasingly in demand. But, unfortunately, the degree of study of this topic is far from the desired completeness, in particular, the techniques and methods of translating accompanying technical documentation have not been sufficiently studied. Based on the relevance,

the purpose of the study carried out in this work was determined, which is to study the features of the translation of scientific and technical texts. In accordance with the purpose of the work, the following tasks were formulated, the solution of which is aimed at a comprehensive disclosure of the topic and the achievement of the set goal.

Therefore, the **relevance of the research** is determined by the need for a study of the English-Ukrainian translation main aspects. Such professional approach of translation. The research on translating and editing English-language popular science texts is highly relevant in today's globalized world.

Focusing on translating and editing popular science texts ensures the accurate and engaging communication of scientific knowledge, fostering a more informed and connected global society.

The purpose of the Master's Paper is to study the peculiarities of translating and editing English-language popular science texts focus on training professional translator and to confirm the need to apply these approach into account during the training of a field translation specialist.

The purpose of the study provided for solving the following **tasks**:

1. to analyze the stylistic features of the English-language popular science texts translation;

2. to consider the lexical features of the English-language popular science texts translation;

3. to identify the main difficulties in translating English-language popular science texts;

4. to study the requirements necessary to achieve the adequacy of the English-language popular science texts.

5) to describe the main translation and editing English-language popular science texts aspects;

The object of the Master's thesis is the English-language popular science texts.

The subject of research is methods and techniques of English-language popular science texts translation.

The source of factual material is international professional literature on translation and editing.

The purpose and tasks of the research led to the use of the following methods and techniques: In the process of research, the comparative, contrastive translation method and component analysis were used.

The scientific novelty of the work The relevance and necessity of studying the features of the English-language popular science texts translation explain the theoretical significance of the study conducted in this work.

The theoretical significance of the work on Problems of translating and editing English-language popular science texts lies in several key areas of linguistic, cultural, and disciplinary study. By addressing these areas, the theoretical exploration of translating and editing English-language popular science texts enriches our understanding of how language mediates the dissemination of knowledge and fosters cross-cultural scientific literacy

The practical significance of the Diploma Paper is explained by the possibility of practical use of the research results in the work of translators engaged in the translation of English-language popular science texts.

Approbation of the research results was performed by taking part in International scientific and practical conference "Innovative technologies in the context of foreign language training of a specialist" (Poltava 2023,2024); International Scientific and Practical Conference "Actual Issues of Germanic Philology and Translation" (Poltava, 2023, 2024).

Structure of work. The Master Paper includes an introduction, two chapters, conclusions to every chapter and References list and 2 appendices.

The introduction defines the relevance of the Paper, theoretical goals and task set in Master's work first chapter includes detailed translating English-language popular science texts main aspects analyses which is made on the base of foreign literature on translating. The first chapter of the thesis is devoted to the consideration of the main characteristics and features of the translation of a popular science text, including stylistic, lexical, grammatical, and graphic ones. The concept of "style" is

disclosed, the most well-known classifications of scientific texts are listed, stylistic features of scientific and technical texts are given, and terminology in a scientific and technical style is examined.

Second chapter offers editing English-language popular science texts main aspects. The research material includes scientific and technical monographs, articles from scientific and technical printed publications, as well as electronic English terminological technical dictionaries. The second chapter considers the difficulties in correcting popular science texts, and analyzes the requirements for translation adequacy and equivalence of the translation and the original.