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(англійською мовою)»

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Методичні рекомендації з дисципліни «Теорія і практика науково-технічного перекладу (англійською мовою)» для студентів спеціальності 035 Філологія / Укладач: І. Ф. Шилінська. Тернопіль: ФО-П Шпак В. Б. 2022. 83 с.

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Затверджено рішенням кафедри іноземних мов та інформаційно-комунікаційних технологій (протокол № 2 від 5 вересня 2022 р.).

У методичних рекомендаціях висвітлюються загальнотеоретичні питання науково-технічного перекладу; наведено інформацію щодо граматичних та лексичних аспектів перекладу. Запропоновано практичні завдання, виконання яких сприятиме розвитку і формуванню навичок перекладу та інтерпретації науково-технічних текстів. Методичні рекомендації можуть бути використані студентами спеціальності 035 Філологія як у процесі проведення практичних занять, так і під час самостійної роботи.

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Introduction

Science and technology are often paired together in general language usage, as well as when we talk about translation. However, science and technology designate different, though related knowledge domains.

A simple indication of this is found in dictionary definitions, for example in the online Oxford Dictionaries, where *science* is defined as “the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment” and *technology* as “the application of scientific knowledge for practical purposes, especially in industry” (www.oxforddictionaries.com).

Bringing them together implies that they share some features, challenges or approaches. *Scientific and Technical Translation* focuses on texts that are typically translated in scientific and technical domains, such as technical instructions, data sheets and brochures, patents, academic papers and abstracts, popular science press releases and news reports or more specifically, texts which relate to particular subject area.

THIS COURSE:

- introduces students to the typical contexts in which scientific and technical translators work;
- explains how to overcome lexical and grammatical difficulties when translating scientific and technical texts;
- considers how translation techniques are used when translating scientific and technical texts.

MAIN PECULIARITIES OF TRANSLATING SCIENTIFIC AND TECHNICAL TEXTS

Scientific texts are written not for all SL speakers but for representatives of a certain professional group with specialized learning. Profound knowledge of the science to which the texts belong helps the translator to achieve the adequacy in translation.

Scientific style falls into several substyles: *genuine scientific* (monographs, research papers, abstracts, reviews); *educational scientific* (textbooks, manuals, lectures); *popular scientific* (essays, articles). All genres of the scientific style are aimed to clearly and consistently convey scientific information or prove the truth of the already existing knowledge.

The main communicative function of this style is an informative one. The features of scientific texts are: precision, clarity, objectivity, logical order, generalization, argumentation, and explanation of cause and effect relationships, conclusions.

Scientific texts use a special kind of language rich in symbols, schemes, tables, graphs, foreign words, terminological phrases, quotations, references and they are without any indicators to the author's personality.

While the presence of subject-field terminology is a feature of technical texts, terminology alone is not sufficient for classifying the text into "technical" since numerous disciplines and courses which are not "technical" are characterized by the use of subject-field terminology. Technical translation involves the translation of many kinds of specialized texts and requires a high level of subject-field knowledge, relevant terminology and writing rules.

Academic Vocabulary is defined as words that are traditionally used in academic text, writing, e.g., the final project for a master's degree, research papers. These types of words are used to explain concepts; to present research, etc., and they are not common in informal conversation.

In general, academic vocabulary can be considered to consist of three types:

- *general words* which are acceptable for academic/scientific use (*загальнонаукова лексика*);
- *academic words* (*наукова лексика*);
- *technical words* (terms) specific to a particular subject area (*термінологічна лексика*).

The importance of the consistent terminology in technical translation, for example, in patents, as well as the highly formulaic and repetitive nature of technical writing makes computer-assisted translation (CAT) using translation memories and terminology databases especially appropriate.

Selection of lexical units also complies with the requirement for precise transmitting of thoughts and ideas. Scientific style is conceptual, typical word classes are nouns, possibly adjectives, and mainly technical expressions (terms). Terms are carefully chosen in order to be unequivocal. Subjective and expressive phrases generally do not occur in this style. The more scientific the style is, the more specific the terms are. In the particular scientific branches we can get by with low lexical variety, therefore the index of repetition is quite high. Vocabulary is also stereotyped as well as syntax is.

The syntax of scientific texts should serve as a means to achieve accuracy, clarity, and brevity. The essential characteristics of this style are the use of compound sentences with different types of subordination, the infinitival and participial constructions. Passive constructions, impersonal and indefinite-personal sentences are used to show impersonality and objectivity of the text. The word order is strict. Academic science and technology are also characterized by a high degree of nominalization, which can be seen in the abundant use of nominal groups. Nominalization of scientific texts may be explained as the predominant use of nouns and adjectives over verbs and adverbs and prepositions over conjunctions.

Scientific texts are logically divided into parts, units, sections and paragraphs. Other characteristics of the scientific texts are the use of acronyms, footnotes, names of companies, corporations; brand names.

While translating scientific texts the following requirements must be met: the content of the text must be rendered exactly and clearly without distortions; the

translated text must have the structure that is considered natural for the scientific style of the TL. Very often the word order is different from the original. The logical word order of the sentences is one of the key features of scientific and technical style. If the principle of logical word order in the sentence is not respected by a translator, and the English word order is preserved in the TL text, we might be introducing such a translation to a recipient that would not comply with the object of communication intended in the ST. The principle of logical word ordering is equally applicable for ordering clauses within a complex sentence.

That and *which* are not omitted in the English subordinate nominal clauses. One of the most frequent expressive means that indicate relations between clauses are conditional relative conjunctions (*if, unless*), other linking elements are: *providing, provided, on condition*. Another frequent prepositions are those of **temporal nature** (*before, as, while, as soon as, when, until, once, after*), **consequence** (*so that, with the result that, as a result of, in consequence of, consequently, therefore, whence*) and those of **cause** (*because, since, as, because of, on account of, owing to, due to*).

Literary expressions and words are not a rare phenomenon in this style, e.g., *negligible, obviate, propagate*. Typical words are even those of everyday usage such as: *use, show, call, write, consider, treat, maintain*, etc. Preferring more typical expressions is aimed at achieving plain English. This characteristic feature is used in case when long expressions are evasive or highly confusing.

The translator should first read the whole text to understand it. Then it is recommended to analyze each sentence; find the main and subordinate clauses in each compound sentence and simple sentences in each complex sentence and determine the type of connection between these components. While analyzing structurally different sentences, it is expedient to determine the predicate of each simple sentence, then the group of predicate and the subject and object groups. It is recommended to start translation of each sentence from the group of subject, and then the translator should translate the groups of predicate, object, and adverbial modifier. After that the translator proceeds to translating all words in the text, looking up unknown words in the dictionary. While doing this, it is necessary to define the part of speech of the unknown word and look through all the meanings of the lexical unit.

When selecting the appropriate meaning, the translator must take into consideration the context and the branch of science that the terminology of the text belongs to. One and the same term may have different meanings in different branches of science.

The translator may use the following algorithm for rendering scientific texts:

1. Read the text and define what specific issues it deals with. Read, think, consult, and search to reach full understanding of the original.
2. Write out all the terms and find their translation equivalents. Be careful with misleading and polysemantic terms. Use SL and TL specialized literature in this branch of science if necessary.
3. Translate the text, and then translate the headline.
4. Make a break for some time. Then have a fresh look at the translation (without consulting the original) paying attention to its style. Make necessary corrections.
5. Compare the original and the translation and evaluate how fully and precisely the meaning was preserved.

1. Translate thematic groups of academic vocabulary into Ukrainian:

Further aim of research is, the purpose of the chapter is to consider/to test, to serve the same purpose, a great number of interesting problems, to conduct the research of, to present a fundamental problem, to work on an analytical framework to help people, to establish new understandings of methods, to extend knowledge base in these areas, to investigate and inform, to provide /to further develop criteria for the definition and evaluation, to contribute to the development;

to observe the effects, to be easily observed in this investigation, to conduct carefully controlled experiments, to make experiments more effective;

classification of models, to fall into categories, to classify procedures, the complexity of the system, a purely statistical correlation, to differ in function, to consist of /contain elements, a comparison between, in comparison with, to compare with, as compared to, differences and similarities between, distinction between different forms;

this fact (these data) is (are) illustrated in Fig.7; the data can be plotted on a ternary diagram; to display different values on the same bar in a bar graph; the methods should be mentioned in the following list; the results can be presented in the form of...; a schematic representation; to be used as illustration; the diagram shows (reflects);

to draw appropriate conclusions, to lead to a conclusion, the conclusion of great importance, the conclusions that can be drawn from the experiment; as a consequence, to result in important consequence; the generalization of the computation methods; to outline some of the problems, the work outlined above ...,

phenomena outlined in the paper to estimate the proper data; to estimate the parameters; to sum up/to summarise/in summary; from these comparisons we can draw the following conclusions.

2. Read the text about different types of electronic commerce and match the headings with each of the paragraphs (1 – 3).

1. Business-to-Business Applications
2. Business-to-Consumer Commerce
3. Internal Business Processes

Electronic commerce

1. In this form of electronic commerce, business must develop attractive electronic marketplaces to entice and sell products and services to consumers. For, example, companies may offer multimedia Web sites that provide virtual storefronts and virtual shopping malls, interactive order processing and secure electronic payment systems.

2. This category of electronic commerce involves both electronic business marketplaces and direct market links between businesses. Many companies offer the business community a variety of marketing and product information on the World Wide Web. Others also relay on electronic data interchange via the Internet for direct computer-to-computer exchange of business transaction documents with their business customers and suppliers.

3. All business functions and many business processes are affected by electronic commerce activities. Many internetworked enterprises are customer-driven and market-driven. They continually monitor and evaluate online information about their customers, suppliers and competitors from their Web sites and discussion groups. This information is available via intranets to all business functions and is used to shape a company's product development, marketing programs, customer service and competitive strategies.

GRAMMATICAL ASPECTS OF TRANSLATING SCIENTIFIC AND TECHNICAL TEXTS

Grammatical difficulties in translation of scientific and technical texts

The functioning of grammatical elements is of primary importance when translating scientific and technical texts. In English, word relationships in a sentence are also revealed by articles, prepositions, conjunctions, pronouns, numerals, auxiliary and modal verbs, and grammatical endings.

One of the most notable grammatical features of scientific and technical texts is the use of a large number of compound and complex sentences to show logical relationships between objects, actions, events and facts typical for scientific presentation.

In the English subject-field texts much more often than in Ukrainian, passive voice and impersonal forms of verbs are used as well as participial constructions and specific syntactic constructions, personal pronouns (the first person singular) and infinitival and nominative constructions, etc.

The frequent use of passive constructions reveals the impersonality of scientific speech, which is also considered a typical feature of this style. For instance, scientific experiments are generally described using passive voice.

Information is entered into the database via fields. Інформація вводиться у базу даних через поля.

Macs were designed to facilitate interaction with the computer. Комп'ютери Макінтош були розроблені щоб полегшити взаємодію з комп'ютером.

Impersonal passive constructions are often used with the verbs such as *suppose, assume, presume, conclude, infer, point out*, etc., as in:

It should be pointed out; It must not be assumed; It must be emphasized; It can be inferred, etc.

Some English grammatical forms and constructions are absent in the Ukrainian language: modal words, perfect infinitive, gerund, articles, extended tense forms, formal subject *it*. So, when translating into Ukrainian, different substitutions can be used.

*It is important not to confuse programming languages with markup languages.
Важливо розрізняти мови програмування і мови розмітки.*

*If you need to make a presentation I suggest **using** a PowerPoint. Якщо вам потрібно зробити презентацію, я пропоную використати PowerPoint.*

In many cases indefinite article is not translated. When it has an additional semantic meaning it is translated as a numeral **один** in case it is placed before the noun denoting a measurement unit, device or before the agents of chemical or physical processes, e.g., *a molecule, an atom*.

The division of translation difficulties into grammatical and lexical ones is rather nominal, because in each language grammatical phenomena are closely connected with lexical ones and the way of translating grammatical forms and structures often depends on the lexical content and one and the same grammatical phenomenon can be translated in different ways due to this content.

The language of scientific and technical literature differs from the everyday language or belles-lettres in certain lexical, grammatical and stylistic aspects. If lexical differences are obvious even to a non-specialist (a significant amount of terms), grammatical peculiarities are less obvious, but not less diverse.

When translating, it is necessary to understand the semantic meanings of the sentences, the semantic relationships between sentences and the meanings of metatextual elements involved in the text structure. The largest amount of grammatical problems in translation is related to understanding the syntactic structure and morphological structure of the sentences as language elements that convey the information.

As it is known, English and Ukrainian languages belong not only to different branches of the Indo-European family of languages (the first - to German, the second - to Slavic), but also to different structural types of languages: the first is mostly *analytical language*, where grammatical relations are revealed due to free grammatical morphemes, and the second one is *inflectional language*, where grammatical meanings and relations are conveyed with the help of related grammatical morphemes – inflections. Thus, in the Ukrainian language there are no articles, gerund, Grammar Tenses of the Continuous and Perfect groups, complex

subjective and objective infinitival constructions, and in English, there are no gender categories relating to nouns and adjectives, etc. There are some differences in the sentence structure: in contrast to the Ukrainian language, where the subject group can be often placed after the predicate group, in English the order of the main members of the sentence is much more fixed, which may require restructuring the sentence in translation.

The second group of grammatical difficulties in translating refers to a different amount of similar forms and constructions in two languages. Thus, the Present Tense form of the verb predicate in the Ukrainian language corresponds to the English forms of the Present Indefinite, Present Continuous and partly Present Perfect, and the genitive case of the Ukrainian noun may correspond due to its grammatical meaning to the English preposition-noun construction "of + N" or the form of the general case of a noun in relation to another noun.

The third group of grammatical difficulties in translating is presented by grammatical phenomena of the SL text that have different functional characteristics in comparison with the corresponding grammatical phenomena of the target language, for example, singular and plural nouns are available in both Ukrainian and English, but the forms of certain nouns may be different (English *evidence* is used only as singular, but can be translated into Ukrainian as singular and plural: *доказ, докази*).

Another group of grammatical difficulties in translating involves grammatical phenomena that have different frequency characteristics in English and Ukrainian scientific and technical texts. So, in English the frequency of using passive forms of verbs is much higher than in Ukrainian and when translating such forms are often replaced by the forms of the active voice. These difficulties are caused by the differences in the linguistic and stylistic norms of the source and target languages.

There are also difficulties in translating the subject and predicate in a sentence, for example, in English there is so-called "formal subject" and "formal object", which are not used in the structure of the Ukrainian sentence. Only a small part of English and Ukrainian sentences and phrases have the same syntactic structure and the order of their components, and only in this case English phrases can be translated into

Ukrainian without the use of grammatical transformations. Such translation is called *literal* or *word for word*. It should be distinguished from *grammatically literal translation*, which is a literal translation of a grammatical form or syntactic structure that violates the grammatical norms of the target language and / or genre and stylistic norms of scientific and technical literature.

Grammatically literal translation leads not only to the violation of the language norms in translating, but also to the distortion of the content of the source language text, for example: *A new element will be discovered sooner or later* / *Новий елемент буде відкрито раніше чи пізніше*. In grammatically literal translation of the Ukrainian sentence, rules of functioning of the comparison forms of the adverbs are not observed. According to the rules and norms of the Ukrainian language, in this case the form of positive but not comparative degree of the adverbs must be used: *рано чи пізно*.

In the following example: *While taking part in the discussion he advanced his famous theory.* / *Коли, беручи участь у дискусії, він висунув його відому теорію* grammatically literal translation leads to the distortion of the content and violates grammatical norms of the Ukrainian language according to which participial construction cannot be introduced by the conjunction and the anaphoric possessive pronoun must have the form *свій* but not *його*. Translation is as follows: *Саме під час цієї дискусії він висунув свою знану тепер теорію*.

Literal translation is performed sequentially from the first word of the sentence to the last. Articles are not translated and certain lexical transformations can be applied, if the structure and order of the members of the sentence being translated do not change:

This is the phenomenon of diffraction. Це – явище дифракції.

It is one of the basic questions of any science. Це є одним з головних питань будь-якої науки.

1. Complete the sentences with the present simple or present continuous form of the verbs and translate them into Ukrainian

1. The difference engine (to be) a mechanical device that (carry) out a sequence of computations specified by the setting of levers, gears and cams.

2. No, computer devices (begin) to change very rapidly.
3. We now (witness) the development of fifth-generation systems.
4. Techniques of artificial intelligence (simulate) some aspects of human thought.
5. What languages expert systems (communicate) with users and programmers?
6. We (expect) to make extensive use of the artificial intelligence techniques in the nearest future.
7. What the fourth-generation computes (rely) on?
8. We (live) in the digital age now.
9. What a computer (allow) you to do?

2. Put the words in brackets into the correct form (present perfect or present perfect continuous) and translate them into Ukrainian:

1. Our company (to use) different types of information systems for 3 years.
2. A lot of information about customers, sales, products, and inventory levels already (collect) due to the use of a sales management system.
3. How many information systems (develop) recently?
4. Some organizations (interact) with external entities for a long time.
5. Integration across organizational boundaries (lead) to the increasing of the speed and efficiency of business transactions.
6. Geographically distributed personnel (collaborate) on the projects since January.

3. Use the correct past tense and translate the sentences into Ukrainian:

1. They (develop) guidelines for conducting every operation long before they (start) research.
2. Systems professionals (develop) some methodologies based on their experience in the company.
3. New model for information systems (develop) by the end of the year.
4. The methodology used by the organization (determine) the approach, which was applied.
5. This device (use) by many people long before the scientist (invent) the term for it.
6. The research council (not approve) the technique, which they (develop).

4. Write these sentences in Passive Voice and translate them into Ukrainian:

- a) He connected his computer to the Internet over telephone lines.
- b) We use the mouse to move a cursor on the screen of the monitor.
- c) Sometimes we refer to the CPU as the processor.
- d) High-capacity discs provide greater storage capacities than floppy discs.
- e) Computers can perform four general operations.
- f) Higher-level languages allowed programmers to give more attention to solving problems.
- g) Assembly language made programming less cumbersome.

- h) Texas Instruments and Fairchild Semiconductor announced in 1959 that they had each independently produced chips containing several complete electronic circuits.
- i) Scientists all over the world associated Japan with chip technology.
- j) In 1962 the developers marketed the first removable disc pack.

5. Write these sentences in the correct passive form and translate them into Ukrainian

1. Home networks (*use*) commonly to allow home computers to share a single printer and Internet connection, as well as to exchange files.
2. My laptop (*fix*), so I had to use my PC.
3. The early generation of computers (*use*) primarily to do mathematical and scientific calculations.
4. WANs may (*construct*) with the use of purchased equipment and leased long-distance transmission lines.
5. Private network resources (*organize*) and (*deliver*) through one and more Web protocols via a network.
6. Access can (*restrict*) in various ways.
7. An extranet (*extend*) to share directly related business resources outside the organization.
8. Biometric fingerprint devices now (*to embed*) in such components as a computer mouse, computer keyboard, and small touch pads.

6. Translate the following passage into Ukrainian paying attention to passive voice.

The name of the individual or organization is typically reflected by the domain name and the different parts of a domain name are separated by a period. The far right part of the domain name (which begins with the rightmost period) is called the top-level domain (TLD) and traditionally identifies the type of organization or its location. The part of the domain name that precedes the TLD is called the second-level domain name and typically reflects the name of a company or an organization, a product, or an individual. There were seven original TLDs used in the United States; additional TLDs and numerous two-letter country code TLDs since then have been created. A great amount of domain names are registered throughout the world.

7. Convert these sentences from active voice into passive and translate them into Ukrainian

1. Large corporate networks often connect all of the offices or retail stores in the corporation, creating a network that covers cities or states.
2. Public wireless networks provide Internet access to individuals via their portable computers and mobile devices.
3. The term *wide area network* (WAN) can describe any network over one kilometer.
4. A router scans messages on the LAN and copies them to the WAN.
5. A single network can simultaneously provide different services with appropriate hardware and sufficient transmission capacity.
6. A VPN sends encrypted messages through public Internet service providers.

TRANSLATION OF THE INFINITIVE AND INFINITIVAL COMPLEXES

1. The Infinitive functioning as a *subject* can be translated in the following ways:

1) Using the infinitive form of a verb:

*To affirm the superiority of one approach over another, in God's truth fashion, is to take an extreme position. Безапелятивно **стверджувати** зверхність одного підходу над іншим -- означає займати крайню позицію.*

2) Using the noun functioning as a subject, especially when a simple or compound verb predicate is used in an English sentence:

*To violate this integrity in analyzing such elements would gravely weaken the theory. **Порушення** такої цілісності аналізу подібних елементів серйозно послабило б теорію.*

*But **to do so** quite undermines the program of giving patterns in other terms. Але такий **крок** повністю руйнує програму опрацювання моделей на інших засадах.*

3) Using the infinitival construction functioning as the adverbial modifier of purpose, especially when the predicate of an English sentence is expressed by a verb of necessity, requirement, etc.:

*To make these arguments valid requires an extra premise in each case. **Для того, аби зробити** цей аргумент дійсним, у кожному з випадків потрібні додаткові засновки.*

*Unfortunately, **to tie** the various parts of the work together would have required a much better grasp of abstracting than Hallender demonstrates. На жаль, **для того, щоб зв'язати** різні частини цієї праці в одне ціле, потрібно було б краще, ніж це демонструє Голлендер, володіти процесом абстрагування.*

In sentences with the formal subject *it* and the infinitival subject, the latter is usually translated with the help of the infinitive:

It is easy to see why such a method is attractive. Неважко зрозуміти, чому такий метод приваблює.

It seems reasonable to assume that this tendency will continue. Слушно припустити, що така тенденція збережеться.

2. Prepositional Infinitival Construction (for + NP + Inf.)

2.1 Sentences with such a construction can be translated using the following lexical and grammatical transformations: a noun, used after the preposition *for*, is placed first, the impersonal construction (*it is* + *Adj.*) is transformed into an adverb, and the infinitive is transformed into the personal form of the verb predicate:

Thus, it is erroneous for Cooperman 1992 to refer to the construction as complex. Куперман (1992) помилково називає цю конструкцію складною. / Куперман помиляється, коли називає цю конструкцію складною).

2.2. In case of the introductory impersonal construction *it is (im) possible* with the prepositional infinitival construction after it, the following translation transformations can be used: the noun after preposition *for* becomes the subject, and the impersonal construction and the infinitive constitute a modal verb predicate:

Suppose, however, it is possible for matter to become very dense. Припустимо, однак, що матерія може стати дуже щільною.

Another way of translating is to transform an English sentence with such a construction into a compound sentence with an explanatory subordinate clause, introduced by the conjunction *щоб*, where the impersonal introductory construction becomes the main clause and the infinitival construction becomes the subordinate clause, while the infinitive is transformed into the verb predicate in the conditional mood (especially in case of such introductory constructions as *it is important, it is necessary*, etc.):

It is important for a theory to be well-grounded. Важливо, щоб теорія була достатньо обґрунтованою.

3. The infinitive functioning as an *object* can be translated as follows:

3.1. Using the infinitive form of a verb:

But O. Tosi also takes care to avoid the extreme positions and exaggerated claims that have sometimes been associated with the techniques. Але О. Тосі разом з тим намагається уникати крайнощів і гіперболічних тверджень, що іноді пов'язуються із цими методичними прийомами.

In Ukrainian the predicative adjective is converted into an adverb:

Such an analysis is particularly hard to justify. Такий аналіз особливо важко виправдати.

Although the distinction is difficult to make precise, it is impossible to deny. Хоча це розрізнення важко зробити точнішим, однак із ним неможливо не погодитися.

3.2. The infinitive can be translated using a personal form of the verb predicate or a combination of the word *можна* with the infinitive of a verb in the explanatory subordinate clause, introduced by the conjunction *що*:

Very few publications do not pretend to contribute to a theory or to a change of theory. Досить мало публікацій не претендує на те, що вони становлять внесок до теорії або якимось змінюють теорію.

One should not, however, expect to find a major theoretical contribution here. Не варто, однак, очікувати, що тут можна знайти значний теоретичний внесок.

3.3. The passive infinitive can be translated using the conditional mood of the verb predicate as part of an explanatory subordinate clause, which is introduced by the conjunction *щоб*:

Nevertheless, Durie has plenty of data and good arguments, and his account deserves to be taken seriously. Втім, у праці Д'юрі багато даних та солідних аргументів, і його аналіз заслуговує на те, щоб до нього ставилися серйозно.

*The researcher cannot afford **to be too narrowly specialized**. Дослідник не може дозволити собі **мати** надто вузьку **спеціалізацію**.*

3.4. The perfect infinitive is translated using the past tense of the verb predicate as part of the explanatory subordinate clause, which is introduced by the conjunction **що**:

*We do not claim yet **to have found** the ideal social class model. Однак ми не стверджуємо, **що знайшли** ідеальну модель суспільного класу.*

*We hope **to have contributed** to solving the problem. Сподіваємося, **що ми зробили** свій скромний внесок у вирішення цієї проблеми.*

*Farelli believes **to have proved** the point. Фареллі вважає, **що він довів** цю тезу.*

*I hope in the above discussion **to have made** the point that the author provides a novel, thought-provoking account. Сподіваюсь, у викладеному вище аналізі мені **вдалося показати**, що автор (рецензованої книги) пропонує новий підхід, який стимулює думку.*

4. Objective Predicative Construction with the Infinitive

Such constructions are very widely used in the English scientific and technical literature. They are translated mainly in the following five ways.

1. When such a construction is a *complex object* used after the verb in the imperative mood or when the predicate of an English sentence is expressed by such verbs as *show, find, expect, consider, establish, assume, believe, estimate, know, etc.*, they are translated using compound sentences with the explanatory subordinate clause, where the English infinitive corresponds to the personal form of the verb predicate:

*Assume the hypothesis **to be correct**. **Припустимо**, що гіпотеза вірна.*

*One cannot expect a complicated problem like that **to be solved** in a year or so. **Не варто сподіватися, що така складна проблема вирішиться** вже **десь** через рік.*

Both experiments revealed the rated dimensions to be highly interrelated. Обидва експерименти показали, що розрахункові параметри дуже сильно пов'язані між собою.

2. When a *complex object* with the infinitive is used in a sentence with a verb predicate expressing a *wish, requirement, recommendation*, etc., the infinitive is translated using the conditional mood of the verb as a part of an explanatory subordinate clause, introduced by the conjunction **щоб**:

*I do not want **this criticism to be misunderstood**. Я не хочу, щоб цю критику інтерпретували не так, як я її виклав.*

*Indras clearly wants **this book to serve** as a contribution not only to metatheory, but also to the general philosophical study of the nature of causality and causal explanation. Індрас, певно, хоче, щоб ця книга стала внеском не тільки до метатеорії, а й до загальнофілософського вивчення природи причинності і методології причинного пояснення.*

In some cases the infinitive can be translated as a noun:

*This may require **a series of experiments to be carried out**. Це може потребувати проведення серії експериментів.*

3. When the infinitive is presented by the verb **to be** followed by a noun, adjective or participle, it may not be translated:

*Some researchers **will find the article to be densely packed** with theoretical concepts. Деяким дослідникам може здатися, що стаття занадто переобтяжена теоретичними поняттями.*

*I believe the following **generalization to be valid** for other objects. Я вважаю наступні узагальнення вірними й для інших об'єктів.*

4. Infinitival complex **have (get, force, etc.) + Object + Infinitive** is translated either by a causative structure, where the verb **have** corresponds to the verb **примусити**, and the infinitive corresponds to the infinitive of the Ukrainian verb, or it can be translated using an explanatory subordinate clause with the conjunction

щоб. In this case the verb *have* is not translated or can be translated using the infinitive phrase *зробити так* and the infinitive is translated with the help of the conditional mood of a verb:

The researcher wants to have the apparatus work under any conditions.
Дослідник хоче (зробити так), щоб апарат працював за будь-яких умов /
Дослідник хоче примусити апарат працювати за будь-яких умов.

5. Infinitival complex *for + Object + Infinitive* (*Prepositional Infinitive Construction*) used with a predicate expressing a requirement or permission, is translated in such a way that the infinitive corresponds to the noun:

The current instruction calls for the results to be sent to the third storage register. *Поточна команда вимагає передачі результатів до третього регістру пам'яті.*

1. Translate the following sentences paying attention to the Infinitive functioning as a subject:

1. It is more important for us to understand the basic issue. 2. Such examples are so frequent that it becomes difficult to follow the discussion. 3. To understand why Newton may have done this is of importance if we want to understand the cost of having so long been the philosophical heirs of the victorious side in the seventeenth-century quarrel concerning what science should be like. 4. To call light either a wave phenomenon or a particle phenomenon is impossible: in either case, too much is left out. To call light both a wave phenomenon and a particle phenomenon is to oversimplify matters. 5. To produce bold hypotheses is not the same as to present equations which are as far as possible true and quantitatively correct correspondents of the phenomenal world. 6. For a mature scientist to find in his work the need for abandoning his cherished and ingrained preconceptions, the very basis of his previous work, in order to fulfill the dictates of quantitative experience was perhaps one of the greatest sacrificial acts of modern science, equivalent in recent scientific history to the agony of Max Planck.

2. Choose the most suitable way of translating the Infinitive

1. He therefore did not need to know of Lorenz's paper of 1904. 2. Nowe has managed to provide a full-bodied logical system that accomplishes all of the following objectives. 3. Debate over this and other issues has been slow to get off the ground. 4. Put like this, the notion is not difficult to grasp. 5. Factors 4-5 are more difficult to interpret than the first three. 6. The results of this integrated research are hard to find. 7. So many topics are covered that the main thread is very hard to follow. 8. But the direct link between theory and analysis is difficult to substantiate. 9. However, such differences are difficult for a scientist to accept. 10. Limitations of space make it impossible for a comprehensive survey to be offered here, but three examples will be adduced below. 11. Furthermore, she offers an explanation for these problems that seems reasonable and easy to accept. 12. Forbes does not claim to have achieved the goal of banishing relativism, but claims rather to have laid out a series of challenges, empirical or otherwise, to have clarified a number of issues, and to have presented a serious alternative.

3. Translate the following sentences paying attention to the Objective Infinitive Construction:

1. The United Nations General Assembly declared the use of unclear weapons to be a direct violation of the UN Charter. 2. I have never heard him deny this fact. 3. Space does not permit all the various factors to be illustrated here. 4. We cannot expect such empirical observations to greatly advance our knowledge of fundamental physical processes. 5. I find all these accounts to be lacking in crucial respects, and suggest that only a theory-driven approach is likely to be satisfactory. 6. One must either explain the generalization or, as I have tried to do, show it to be a false generalization. 7. Thus, we do not consider this alternative interpretation of the data to constitute a serious problem for our position. 8. Whereas I would never advocate that we simplify and therefore misconstrue the complexity of the situation, I think experts need to consider clear, straightforward ways of presenting the issues if they want others to benefit from their understanding.

TRANSLATION OF THE GERUND AND GERUNDIAL COMPLEXES

A *gerund* as a **subject** is usually placed at the beginning of the sentence and is often accompanied by the dependent words (in particular, nouns, which are objects) forming a gerundial subjective construction. Gerundial subjective constructions, in contrast to the adverbial complexes with Participle I, are not separated from the rest of the sentence by a comma.

In such cases a gerund is usually translated as a noun (often as a verbal noun) or as the indefinite form of a verb:

Describing such structures is thus essential to a comprehensive program of research. Таким чином, опис цих структур є суттєвою складовою програми всебічного дослідження.

Accumulating data is obviously not an aim in itself. Накопичення даних — це, зрозуміло, не самоціль.

Mere listing eleven properties is, of course, only a step towards an analysis. Простий перелік одинадцяти властивостей — це, звичайно, лише один крок на шляху здійснення аналізу.

Reading the book is pleasure esthetic and intellectual, so brilliantly does it interpret Leibniz's opinion. Читати цю книгу — задоволення і естетичне, і інтелектуальне, адже в ній так блискуче роз'яснюється думка Лейбніца.

Meeting this restriction may involve a not insignificant change in the position. Для того, аби виконати цю вимогу, потрібні будуть, можливо, значні зміни у зайнятій позиції.

Sometimes the gerund is not translated:

Providing an unequivocal definition of the notion is not easy. Чимке визначення цього поняття — справа нелегка.

There is every reason to believe that taking such a radical position was necessary in a pioneering publication meant to proclaim the advantages of the new theory. Є всі підстави вважати, що подібна радикальна позиція була необхідна у такому новаторському виданні, призначеному проголосити переваги цієї нової теорії.

The gerund functioning as the **object** is translated:

1) as a prepositional phrase with a noun or as a (verbal) noun:

*She is right to say that this is a topic that needs **discussing** in greater detail.*

Вона має рацію, стверджуючи, що ця тема заслуговує на докладніше обговорення.

*This hypothesis seems to me particularly worth **exploring**. Ця гіпотеза, мені здається, безперечно заслуговує на дослідження.*

2) as an Infinitive verb:

*Space limitations prevent me from **commenting** on the other papers. Брак місця не дозволяє мені **прокоментувати** інші статті.*

*This article has succeeded in **demonstrating** the relationship of the three major types of comparative work. Автору цієї статті вдалося **продемонструвати** зв'язок цих трьох типів порівняльних праць.*

*His arguments are worth **considering**. Варто **розглянути** його аргументи.*

3) As the personal form of the verb in the subordinate explanatory clause:

*I have to confess to not **understanding** this. Я мушу визнати, що **не розумію** цього.*

*We wish to thank both these scholars for **sharing** with us their expertise. Ми хочемо подякувати цим двом ученим за те, що вони **поділилися** з нами своїми вміннями і знаннями.*

*Still, it would hardly be fair to criticize him for **not doing** what he never intended. Проте навряд чи було б справедливим критикувати його, що він **не робить** того, чого ніколи не мав на меті зробити.*

As an **adverbial modifier**, the gerund with the dependent words is usually placed before a preposition or prepositional phrase (*on, upon, after, before, beyond, for, apart from, instead of toward, in without, etc.*). There are several ways to translate such combinations with a simple gerund, regardless of the preposition that introduces it:

a) as prepositional phrases with nouns:

*The problem for a theory is to allow this possibility **without violating** basic principles.Проблемою для теорії є врахування цієї можливості **без порушення** головних принципів.*

*This is an important point, to which we will return **after considering** the papers individually.Це важливий момент, до якого ми повернемося **після окремого розгляду** кожної статті.*

*Two basic methods exist **for achieving** a positive result. Для досягнення позитивного результату існує два основних методи.*

*This may be achieved **by applying** another procedure. Цього можна досягти **шляхом застосування** іншого методу.*

***Instead of using** the Clark method they employed a more complex methodology. **Замість застосування** методу Кларка вони використали складніші методи.*

*A committee has been established **for the purpose of coordinating** research efforts. **З метою координації** дослідницьких зусиль було створено комітет.*

*They have discussed this problem **with a view to elucidating** controversial issues. Для **з'ясування** спірних питань вони провели обговорення цієї проблеми.*

b) as perfect or imperfect participle:

***In discussing** these changes, she inevitably focuses on the question of methodological validity.**Обговорюючи** ці зміни, вона кожного разу зосереджує свою увагу на питанні адекватності методології.*

*We may simply note that this is so, **without going** into details. **Не вдаючись** у подробиці, можна просто констатувати, що це саме так.*

*This can be achieved **by making** the equipment more durable. Цього можна домогтися, **зробивши** устаткування витривалішим.*

***On finding** that the apparatus was working badly, they discontinued their experiment.**З'ясувавши**, що прилад працює погано, вони припинили дослід.*

***In deciding** whether to accept a manuscript for publication, the member of the Academy may overrule a negative review.**Вирішуючи** питання про прийняття*

рукопису, член Академії може рекомендувати її до друку навіть за наявності неохвального відгуку про рукопис.

In writing this review, I profited from correspondence with Robert Randall.
Готуючи цю рецензію, я скористався листуванням з Робертом Рендоллом.

This may be obtained only **by applying** novel methods. Цього можна досягти тільки **застосовуючи** новітні методи.

The *prepositional gerund complexes* can also be translated using subordinate clauses, where the gerund corresponds to the personal form of the verb-predicate:

There are certain rules that we all follow, **without normally being** conscious of them. Існують певні правила, яких дотримуються всі, **хоч звичайно не усвідомлюють їх**.

Without writing a book at least as long as Penfield's, I cannot deal with every bit of argumentation. Всю аргументацію Пенфілда можна розглянути, **якщо тільки написати** таку ж за обсягом книгу, як його.

In choosing between these two approaches, we need to have available other facts. Для того, **щоб вибрати** один з цих двох підходів, потрібно мати в розпорядженні й інші факти.

Moreover, **by dropping** that requirement, we strengthen our explanation. Більше того, **якщо ми відмовимося** від цієї вимоги, то тільки підсилимо наше пояснення.

Besides being very involved, this procedure is very costly. **Окрім того, що ця методика дуже складна**, вона ще й вимагає великих коштів.

Before proceeding with this problem it is desirable to consider the following equations. **Перед тим, як продовжити** розгляд цієї проблеми, бажано розглянути наступні рівняння.

The gerund with the preposition *without* is translated using the Participial construction with the particle "не" before it or as the personal form of the verb-predicate with the dependent words and conjunction "і" preceded:

*Since then, I have identified myself loosely as a theorist, **without committing myself to any one particular model in that framework.** З того часу я вважаю себе теоретиком (у ширшому значенні терміну), **не приєднуючись до будь-якої конкретної моделі в цих теоретичних рамках** (або: "... **і не приєднуюсь до будь-якої конкретної моделі в цих теоретичних рамках**").*

The gerundial complex with the preposition *before* is translated mainly using the subordinate adverbial clause introduced by the phrase "*перед тим, як*", where the direct equivalent to the gerund is the personal form of the verb-predicate, or the prepositional phrase with a noun:

Before going on to consider the point, I consider some arguments against other treatments of the subject.** **Перед тим, як продовжити розгляд цієї тези, я розгляну деякі аргументи проти інших трактувань цього предмета.

Before considering this, I should perhaps make one or two comments on the above quotations.** **Перед розглядом цього питання слід, мабуть, зробити одне-два зауваження з приводу наведених вище цитат.

Sometimes the gerund with the preposition that precedes it can be translated as a noun in the indirect case without a preposition:

*The journal seeks to aid **in strengthening** international scholarship and cooperation in this field and from time to time will carry a set of articles reflecting the state and interest of research in a specific country or region.*

*Журнал має на меті допомогти **розвиткові** світової науки та міжнародного співробітництва в цій галузі і періодично публікувати серії статей, що відображають стан і характер досліджень у певній країні чи у певному регіоні світу.*

When prepositional gerundial complexes are used after a predicative adjective, the gerund can be translated as a personal form of a verb which corresponds to the grammatical tense form of the context:

Boretsky has been largely successful in achieving his goal. Борецький в основному досяг своєї мети.

Perfect gerundial constructions with prepositions *after, on, etc.* can be translated using participial constructions or subordinate adverbial clauses, which are introduced by the appropriate conjunctive words:

After having provided the background in Chs.2-4, he devotes the next five chapters to more specific problems. Описавши теоретичні підвалини дослідження у главах 2-4, наступні п'ять глав він присвячує розгляду більш конкретних проблем.

A notable feature of the presentation is the absence of reference to particular theories, even when dealing with data which have figured prominently in recent theoretical discussions. Помітною рисою викладу є відсутність посилань на конкретні теорії, навіть тоді, коли розглядаються дані, що займали важливе місце у нещодавніх теоретичних дискусіях.

1. Translate the following sentences paying attention to the Gerund

1. Heating the gas increases the speed of its molecules. 2. Translating from one language to another has been accomplished by computer. 3. Overheating an engine is prevented by providing a cooling system. 4. Launching a satellite is done by firing it from a multistage rocket. 5. Landing on Mars and getting home again is a problem which will be solved within the next ten years. 6. Landing on a celestial body that has no atmosphere can only be done by means of retrorockets. 7. Measuring any quantity means comparing it with an accepted unit for that quantity and finding out how many times larger or smaller it is than that standard unit. 8. Cutting back this newly unleashed excess of theoretical power would give rise to a crop of unsatisfying stipulations of the very phenomena that deserve clear and revealing explanation. 9. Such considerations deserve attention; however, passing over them now will not detract from our general exposition of the hypothesis.

2. Translate the following sentences paying attention to Gerundial Complexes

1. One might then elaborate the hypothesis by expanding the set of relevant characteristics. 2. In general, experimental evidence is surprisingly sparse, but Joklas adds to this evidence by presenting two experiments. 3. In fact, it is not clear whether by framing her research questions Liu was even testing for the same thing as Ford. 4. Before turning to this, I should perhaps make one or two comments on the above quotation. 5. Let me summarize those ideas by introducing the notational abbreviations of Figure 6. 6. But we can deduce the relevant principle by selecting one which is simple and not in conflict with the other. 7. I would like to conclude by emphasizing the methodological significance of such studies. 8. I shall begin by arguing against the strongest version of the hypothesis. 9. Most of the contributors are quite skillful in bringing us up to date on the classification issues. 10. Therefore, the analysis in its usual form is observationally inadequate, in predicting only two readings for (14). 11. Before doing this, however, I should make a few remarks about the sort of evidence I have been using. 12. Before discussing the numbers in these figures, let me clarify two points of presentation. 13. The considerations just given show that you can't really raise questions about frameworks without fixing analyses.

TRANSLATION OF THE PARTICIPLE AND PARTICIPIAL CONSTRUCTIONS

Participial I and Participial Constructions

1. Functioning as an adverbial modifier, Participle I is usually used with the dependent words, and is translated into Ukrainian as a personal form of a verb or the infinitive of the predicate verb in the subordinate clause (which is connected by the conjunctions *коли, якщо, оскільки*, etc.), or as an active Participle and prepositional-noun phrase.

Putting these points together, we are confronted with the following problem. Якщо брати всі ці пропозиції разом, то виникає наступна проблема.

Drawing on Elworthy 1987, Ikalainen 1989, and other sources, he argues that this is not true. Спираючись на Елворті (1987), Ікалайнен (1989) та інші джерела, він намагається довести, що це неправильно.

Bearing these rather obvious principles in mind, we can now eliminate the first of our four analyses. Маючи на увазі ці досить очевидні принципи, ми можемо тепер відмовитися від першого з чотирьох запропонованих аналізів.

Some of the other articles are much shorter, being originally conference papers. Деякі інші статті значно коротші, оскільки спочатку вони були тезами конференції.

Sometimes Participle I is not translated, e.g.:

The theorem is proved using quite unusual methods. Теорема доводиться досить незвичними методами.

This theory is here formalized, expanded and then tested using data drawn from other sources. Тут ця теорія формалізується, розвивається і потім перевіряється даними з інших джерел.

2. In some cases, in particular, when the action described by Participle I is no less important than the action described by the verbal predicate, Participle I can be translated as the personal form of a verb in the subordinate attributive clause or with the use of a verb and conjunctions *і, а, та*:

*The nature of the solar particle radiation needs to be explored out to distances of many Earth radii, **calling for** the use of satellites in excentric orbits.* Природу випромінювання сонячних часток необхідно дослідити на відстанях, які дорівнюють багатьом радіусам Землі, **а це потребує** використання супутників на ексцентричних орбітах.

3. If Participial Construction is introduced by the conjunctions **when, while,** etc., it can be translated in the following way:

*When substituting the density (4) into (2), we arrive at the following expression. **Якщо підставити** щільність (4) у (2), то отримаємо наступний вираз / **Підставивши** щільність (4) у (2), отримаємо наступний вираз / **Шляхом підстановки** щільності (4) у (2) отримують наступний вираз*

*While working to isolate polonium, the Curies discovered a second radioactive element, calling it “radium”. **Працюючи** над виділенням полонію, подружжя Кюрі відкрило ще один радіоактивний елемент*

4.1. Participial Constructions, which are introduced by the conjunction **as** and follow the predicate, are translated with the help of a subordinate attributive clause connected by the phrase **як такий, що**, in which the equivalent to Participial I is the personal form of the verb-predicate:

*These constructions are traditionally analyzed as **involving** controlled deletion.* Традиційно ці конструкції аналізуються **як такі, що включають** контрольоване вилучення

4.2. Participial Constructions, which are introduced by linking phrase with conjunctions **other than**, are translated using the construction with the infinitive which is introduced by the phrase **замість того, щоб**:

*Other than dividing the book into 3 parts, the editor provides the reader with little help in using or interpreting it. **Замість того, щоб розділити** книгу на 3 частини, редактор мало чим допомагає читачеві у її використанні або розумінні.*

4.3. Participial Constructions with the conjunctions **while** and **thus** are translated using the constructions with linking phrases and conjunctions: **в той же**

час, таким чином, в свою чергу correspondingly, or the subordinate clause introduced by the conjunction **що**:

*These studies are all the more valuable for their inclusion of details of methodology and statistical procedures, **thus facilitating** replication in similar situations. Усі ці дослідження ще цінніші завдяки включенню до них методологічних подробиць і статистичних методик, **що в свою чергу сприяє** відтворенню експериментів у подібних обставинах.*

*The present study provides a framework that avoids the restrictions listed above, **while taking** advantage of the strengths of quantitative analysis. У цьому дослідженні подано теоретичну основу, де відсутні вказані вище обмеження і **в той же час використано** переваги кількісного аналізу.*

4.4. Participial Constructions, which are introduced by the phrase **far from** are usually translated using the construction preceded by the phrase: **зовсім не/аж ніяк не**:

*Not surprisingly, there is a lot of new machinery. **Far from being a shortcoming**, this is evidence of the breadth and depth of the undertaking. Не дивно, що тут є багато нових технічних рішень. **Аж ніяк не будучи** недоліком, це, навпаки, є свідченням широти і глибини цього проекту.*

5. Perfect Participle I with the dependent words is translated using the same equivalent in Ukrainian (дієприслівником доконаного виду):

***Having pointed to the phenomenon**, Darscal should not have contented himself with a partial description. **Вказавши на це явище**, Дарскал не повинен був задовольнитися його частковим описом.*

***Having defined the notions** of focusing and defocusing, I now repeat my claim. **Визначивши поняття** фокусування та дефокусування, я ще раз сформулюю тепер свою тезу.*

Participial II and Participial Constructions

1. Functioning as an adverbial modifier, Participle II is usually used with the dependent words making Participial Construction, which is separated from the main part of the sentence by a comma. These constructions can be translated as follows:

1) by means of the adverbial (or conditional) subordinate clause, where the direct equivalent to Participle II is the personal form of the verbal predicate:

Considered individually, the claims are not particularly convincing. Ці твердження, кожне окремо, не особливо переконливі.

2) by means of the Participial Construction (дієприкметниковим зворотом):

***Taken together**, these widespread instances of scholarly impropriety quash any impulse to scrutinize the book for redeeming qualities. Розглянуті разом, ці поширені випадки наукової недобросовісності пригнічують будь-яке бажання аналізувати книгу у спробах знайти позитивні моменти, які б могли компенсувати згадані вади.*

*She notes, **based on admitted guesswork**, that the modifications are about twice as frequent as the alterations. Вона зауважує, **спираючись, як сама визнає, на здогадки**, що модифікації вдвічі частіші за зміни.*

3) using a noun:

***When explored**, this subject turned out to have numerous representations. Дослідження виявило, що цей об'єкт має численних репрезентантів.*

2. When Participial Constructions are introduced by the conjunctions **when, if, although**, etc., they are usually translated using corresponding subordinate clauses, in which the direct equivalent to the Participle is the indefinite personal form of the verbal predicate:

***Although still not properly understood**, internal factors of this type have been more thoroughly explored than external constraints. Внутрішні чинники цього типу, **хоча вони все ще не зовсім зрозумілі**, досліджені глибше, ніж зовнішні обмеження.*

If asked to recommend a book which is up-to-date, sensitive to topical issues and well-edited**, I would suggest Sipple 1993. **Якби мене попросили

порекомендувати книгу сучасну, актуальну та гарно видану, я запропонував би монографію Сінпла (1993).

Participial Constructions with conjunction *as* are usually used for some references and Participle II is often translated with the use of the past form of the verbal predicate:

As discussed above, these constructions are not perfect. Як уже йшлося в обговоренні вище, ці конструкції не довершені. As previously seen, the external factor is not decisive here. Як ми бачили раніше, зовнішній чинник тут не вирішальний.

3. When translating Participial Constructions, especially those without conjunctions, it is necessary to accurately analyze the nature of their semantic relationship with the main part of the sentence, because the adequate choice of subordinate clause in translation depends on the accuracy of such analysis. Sometimes Participial Constructions may not be closely related to the main part of the sentence, and then it is better to translate them using coordinate clause, which is joined to the previous clause by the conjunction *i* or without any conjunctions:

Aimed mainly at newcomers to this area, the book is divided into three parts. Книга призначена переважно для новачків у цій галузі; вона поділена на три частини.

3.1. Participial Constructions with given and granted

Some Participles II refer to other lexical and grammatical categories. Among them there are conjunctions: *provided* – *за умови, якщо*; *granted* – *зважаючи на; враховуючи; за умови; якщо дійсно*; *given* – *за наявності; з урахуванням; з огляду (на те, що); беручи до уваги; зважаючи на; якщо враховувати, що*:

Granted this limitation, Guimier's bibliography must nevertheless be regarded as a welcome and useful resource. Зважаючи на це обмеження, бібліографію Гім'є все ж варто розглядати як потрібне і корисне джерело інформації.

Granted these notions, we can readily describe the objects as designating sets of interconnected entities. Беручи до уваги ці поняття, ми легко можемо

описати ці об'єкти як такі, що означають набори взаємопов'язаних сутностей.

Given the potential benefits of the principle, it would be unwise to reject hastily such attempts to restrict the theory. Враховуючи потенційні переваги принципу, було б нерозумним поспішно відкидати такі спроби обмеження теорії.

But, given the purpose of some analysts, this is no restriction at all. Але якщо враховувати мету деяких авторів аналізів, то це зовсім ніяке не обмеження.

Given assumption 5a above, negative data can provide the answer. Беручи до уваги наведене вище припущення 5a, на підставі негативних даних ми можемо отримати відповідь на це.

1. Translate the following sentences paying attention to Participial I and Participial Constructions:

1. Considering the breadth of the book's coverage, its treatment of detail is impressive. 2. Analyses were carried out using the procedures described earlier. 3. This is traditionally analyzed as containing two components. 4. These differences were explored further, using regression analysis. 5. But, lacking explanation, let us concede the fact, and seek an appropriate representation for it. 6. On the whole, B.Harley does well interpreting her findings in terms of existing hypotheses. 7. Then we will offer our own account, giving first a sketch of other traditional accounts which influenced our work. 8. Even granting that folk psychological accounts are theoretical, they are not candidates for elimination. 9. However, assuming that the remaining cases have generally been reported accurately, such criticisms can do little to damage the argument. 10. Taking into account these two impressive gaps, the volume of abstract discussion is out of all proportion with the arbitrary selection of the data.

2. Translate the following sentences paying attention to Participial II and Participial Constructions:

1. Looked at from this angle, the pieces are all seen to differ. 2. Taken on its own terms, the approach is a total failure. 3. Boiled down to essentials, Rohle's rule looks like this. 4. Forced to choose, Newton preferred God to Leibnitz. 5. When tested at 22 degrees, they exhibited maxima varying slightly from each other in height. 6. Impressed by the way in which the theory is underdetermined by his evidence, one will be led into rational speculation. 7. Taken together, the previous studies strongly suggest that the differences occurred in descriptions. 8. Having not quite found the mechanical gears of the Universe, he could at least give its equations of motion. 9. While not directly involved in the writing of my thesis or this book,

Carlos Yorio contributed significantly to my intellectual development. 10. Based on his results, Atteridge suggested that the Contractor could not make any changes in the nature of the work. 11. Taken collectively, the two curves were known as the Keele-Goodwin curves. 12. Taken together, they have in fact formed the dominant image of Jefferson as agrarian democrat. 13. Based on published accounts known to the present authors, a great deal of effort has been expended in developing a fundamental understanding of the factors responsible for enhanced formability.

3. Translate the following sentences with “given” and “granted”:

1. Given that, I believe that each of his specific claims is seriously flawed. 2. Given this, it can be easily resolved. 3. Given these problems, this book will not be on anyone's "must" list. 4. This coincidence of facts is predictable, given the analysis above. 5. Given this descriptive richness, we are left with a final question of validity. 6. Given that I believe that each of her specific claims is seriously flawed, my overall assessment might come as a surprise. 7. Otherwise, given any set of inferences, we can just invent an ad hoc maxim. 8. However, given our assumptions, it is clear that it is impossible to form a coherent idea. 9. Given what was said above, such tests are important, if the theoretical enterprise is to advance. 10. For, given the tendency of "conjunction buttressing" there will be a tendency to assume that they are coreferential. 11. Given the amount of extremely interesting formal work, it is difficult to accept Villiard's call for the change of methodology. 12. Given a choice between such a theory and the analysis of the type I have described, how would one choose between them? 13. Given the general direction of the principle, we can expect that compression will lead to stereotypes. 14. Given the potential implications of these findings, a replication study was conducted. 15. Granted that the relationship between theory and evidence is complicated, such a notion of pure inductive inquiry still seems self-deceptive or naive. 16. Given these considerations, it is possible to form the following hypothesis. 17. Given a choice between such a theory and an entailment analysis of the type I have described, how would one choose between them?

CONVEYING THE MEANINGS OF SYNTACTIC CONSTRUCTIONS

There are fixed patterns and structures that are different in SL and TL. A translator must be aware of them in order to achieve uniformity and proper comprehensibility of translation. Among widely used structures are causative structures. It is mainly the following one: MAKE + N + ADJ. E.g.: *This makes the problem easy.* – *This makes/renders the metal hard.*

The syntactic structures may have (mainly in mathematics and logic) the nature of terms, it does not mean that a translator is supposed to translate them literally. Precise and comprehensible transfer of relevant information is fundamental. Therefore, translators can break the sentence units and rebuild them, if it is on behalf of clarity.

Constructions of logical emphasis

In the English language, mainly three syntactic constructions are used for emphasizing certain word/words in the sentence, the emphatic meaning of which is conveyed in the Ukrainian language as follows:

1) The emphatic meaning of the construction "It is... that..." is conveyed with the help of such words as "саме ... (й/ї)", "якраз (і)", etc.:

It is this principle that will be the focus of our discussion. Саме цей принцип буде в центрі нашого обговорення.

And it is here that Fromm has exercised an unprecedented influence on all activities in the field. I саме тут Фромм здійснив безпрецедентний вплив на всі види діяльності у цій галузі.

It is just such an order that we have observed. Саме такий порядок ми й спостерігали.

It is here that he has perhaps made his most original contribution. Якраз у цьому напрямку він зробив, можливо, свій найоригінальніший внесок.

It is to this topic that we now turn. До розгляду саме цієї теми ми наразі й звернемося.

It is this central concept of Barth's, also adopted by Purdew, which is weak. Саме це головне поняття Барта, запозичене й Перд'ю, і є слабким.

2) The emphatic meaning of the construction "*This is what (where, when, why, how, etc.)*" is conveyed by the following lexical means: "*ось*", "*саме (ї/і)*", etc:

This is just what his and his colleague's studies have clearly shown. Саме це чітко показали його дослідження та дослідження його колеги.

This is where I find the first problem with this approach. Саме в цьому, мені здається, й полягає перша проблема з цим підходом.

This is why the results may be quite different. Ось чому ці результати можуть бути зовсім іншими.

This is precisely why the debate is important. Достеменно ось чому ця дискусія є важливою.

3) The emphatic meaning of the construction "*It was / did not... until... that...*" is conveyed with the help of such words as "*(і) лише*", "*(ї) тільки*", etc.:

It was not until 1960 that their suggestion has been substantiated. Лише в 1960 році було обгрунтовано їхню ідею.

It was not until very recently that the basic assumptions of this theory have been seriously called into question. Й тільки нещодавно основні постулати цієї теорії було піддано серйозному сумніву.

2. Word order

1. In English and Ukrainian sentences, the transmitted information can be syntactically presented in different ways. This is due to the language peculiarities in presenting thematic and rhematic elements of a sentence and the traditions of presenting information about agents and circumstances of the actions described in the sentences. For this and some other reasons, certain changes in the word order (permutations of sentence members) have to be made during translation:

1) subject permutation, when the subject comes after predicate:

In particular, two hypothesis are tested. Зокрема, перевіряються дві гіпотези. But several difficulties arise. Але виникає декілька ускладнень.

Independent motivation for such an analysis is necessary. Для такого аналізу необхідне окреме обгрунтування.

*Some additional **problems exist**. Існує ще кілька **додаткових проблем**. Two **general models** were discerned. Було виокремлено **дві загальні моделі**.*

Such a permutation often occurs when a predicate is at the end of the English sentence, and the subject is of indefinite nature. If an adverbial modifier is at the end of the sentence, then it can be transferred together with the predicate to the beginning of the Ukrainian sentence, before the subject:

*A number of arguments **can be given in support of this claim**. На підтримку **цієї тези можна навести** цілу низку аргументів.*

*The following variables **are discussed in this article**. В цій статті **розглядаються** такі змінні.*

2) adverbial modifier permutation, without permutation of the main members of the sentence (especially with the adverbs here "тут", only "лише", enough "достатньо", etc.):

*But some problems arise **here**. Але **тут** виникає кілька проблем. This argument is familiar **enough**. Цей аргумент **достатньо** відомий.*

3) attribute permutation:

*The data **above** are not, however, counterexamples. Однак **наведені вище** дані не є контрприкладом.*

*Another meaning of the term "model" is an ideal or perfectly suited example of the thing **modeled**. Ще одне значення терміну "модель" — це ідеальний образ або абсолютно адекватна подoba **модельованого** об'єкта.*

*To my knowledge, it is the most general solution **available** that fits the data. Наскільки мені відомо, це найбільш загальне **на цей час** рішення, яке добре узгоджується з даними. The papers are very much alike in the problems **raised** and the approach **taken**. Ці статті дуже схожі за **піднятими** в них питаннями та **застосованими** підходами.*

4) conjunction permutation:

*There are some points of disagreement, **however**. Однак у деяких питаннях згода відсутня. We see, **therefore**, that the generalization of the last paragraph requires supplementation. **Отже**, ми бачимо, що узагальнення в останньому абзаці потребує доповнення.*

2. Attention should be also paid to the position of the Ukrainian equivalent to "all"- "весь, всі", which in the English sentence usually comes before the predicate (and less often - after the predicate) and can take an emphatic role. Therefore, sometimes you need to add the adverb "абсолютно" in the Ukrainian sentence:

*The following examples are **all** from Frechette 1992. **Всі** наступні приклади взяті з праці Фрешетт (1992).*

*Correlation coefficients were **all** highly reliable. **Абсолютно всі** коефіцієнти кореляції були цілком надійні.*

*These functions are **all** basic, but there is no assumption that they are **all** universal. **Абсолютно всі** ці функції — базові, але при цьому не припускається, що всі вони — універсальні.*

3. When the compound nominal predicate of the English sentence includes a link-verb (*look, make, seem, etc.*), the predicate can be separated from such a verb by a group of words or even a subordinate clause. Such a word order in the translation should be changed, because in some cases an English compound nominal predicate is translated as a simple verbal predicate:

*Elimination of trade barriers **made** commercial relations between the countries **easier**. Усунення торговельних бар'єрів **полегшило** зовнішньоекономічні зв'язки між цими країнами.*

4. Sometimes the clauses of the compound sentences can change position in the translation. In particular, the permutation of the main and subordinate clauses in a compound sentence is common:

*This prediction is borne out, **I believe**. **Я вважаю**, що це передбачення підтверджується. What the explanation may be is **not clear**. **Не ясно**, яке пояснення тут можна дати.*

3. Comparative and pseudo-comparative constructions

1. Positive comparative construction "as + adjective + as" is translated as "такий же + adjective + як" or "настільки... наскільки":

*In other words, an analysis done within a particular framework is only **as good as** the facts it accounts for". Іншими словами, проведений на конкретних*

теоретичних засадах аналіз **настільки вдалиий, наскільки** такими є факти, що він їх описує.

*Read's data and observations are **as valuable as ever**. Дані й спостереження Ріда **такі ж цінні, як і завжди** у нього.*

The comparative construction can be used with the odd conjunction **as** and it can be translated as "такий же + noun phrase":

*Of course, we don't need quite **as strong a hypothesis** to get the same results. Звичайно, нам не потрібно **такої ж сильної гіпотези**, аби отримати ті ж результати.*

2. In parallel constructions with the adjectives of the comparative degree, which are preceded by the pair of definite article **the**, the first component of the pair is translated as "**що**", and the second - as "**то**":

***The greater the deviation, the more difficult the solution. Що більше відхилення, то важче** знайти рішення.*

***The further he progresses, the less accurately does he know his position. Що далі** він просувається, **то неточніше** він визначає своє місцезнаходження.*

***The greater is the rate of fall, the smaller is the maneuverability. Що більше швидкість падіння, то менше** маневреність.*

Such sentences can be with or without the verb-predicate (link-verb). When translating verbless sentences, the verb-predicate is restored due to the context:

***The more symbols at one's disposal, the easier it is to construct sets of rule. Що більше символів ви маєте** у своєму розпорядженні, **то легше** конструювати набори правил.*

3. Pseudo-comparative constructions are constructions that are formally similar to comparative ones, although they are not and have different grammatical meanings. Thus, the phrases **as high as** and **as low as** before numbers are translated as "**(аж) до**", and the phrases **as early as** and **as recently as** are translated as "**ще (у)**":

*The rate dropped to **as low as** 1:4. Співвідношення впало **аж до** 1:4. This element was discovered **as recently as** 1978. Цей елемент було відкрито **ще в** 1978 році.*

*Some birds can hear sounds **as high as** 25,000 cycles. Деякі птахи можуть сприймати звуки частотою до 25 тисяч герц.*

However, if the phrases ***as much as, as many as, as large as, as little as,*** etc. are used after "numeral + times", then they are translated accordingly as: ***у (стільки) разів більше (менше, вище)***", etc.:

*The speed of light is **million times as great as** that of sound waves. Швидкість світла у мільйони разів більша від швидкості звуку.*

The phrase *as long as (поки)* can act as a complex conjunction, not a comparative construction:

*The flight will continue **as long as** the power plant functions properly. Політ триватиме, **поки** працюватиме двигун.*

The phrase *as far as (smth.) is concerned* is translated as "що стосується" or "якщо йдеться про":

***As far as ionization is concerned,** gamma rays behave here like photons. **Що стосується іонізації,** то гамма-промені поведуться при цьому як фотони.*

The phrase *as well as* is translated as "також":

*We can mention several reasons **as well as** some strong arguments. Можна навести кілька підстав **та** сильних аргументів.*

4. Construction "as + Adj./ Adv. + as" possible is translated by a phrase consisting of the word "якомога" and an adverb or adjective of a comparative degree:

*This restriction must be removed **as soon as possible.** Це обмеження потрібно усунути **якомога раніше.***

*The importance of reducing the weight of spaceships **as far as possible** is generally appreciated. Загалом, велика увага приділяється **якомога більшому** зменшенню ваги космічних кораблів.*

4. Causative constructions

A causative construction is a three-component word combination with a persuasive semantics that forms a complex object. In particular, the following types of causative constructions are used in the English scientific and technical texts:

1) A construction "*transitive verb with causative semantics (force, make, cause, lead, compel, allow, permit, enable, etc.) + noun phrase + infinitive*" can be translated as a) a part of complex object sentence; b) a similar causative construction; c) a sentence, in which the noun group in the causative construction becomes a subject, and the infinitive becomes an indefinite form of the verb, and the causative verb is translated as "вимушений":

*The analytical and computed results **did not make the chance of finding gain experimentally seem more optimistic.** Одержання аналітичних і обрахованих результатів не призвело до того, що можливість знаходження підсилення експериментальним шляхом стала здаватися реальнішою.*

This causes the base of the transistor to go positive. Це робить базу транзистора позитивною.

The other extreme case forces Agent I to decide in advance on a suitable network. Через іншу крайність агент I вимушений заздалегідь вибрати придатну схему.

This causes the tube to oscillate. Це примушує лампу генерувати.

2) The construction "*have/get verb + noun phrase + infinitive*" is translated as part of a complex sentence, where the verbs "*домагатися*", "*зробити*" are the equivalents to *have* or *get*, etc. and the noun group and the infinitive form a subject-predicate phrase, and in Ukrainian translation, the predicate is used in the conditional mood:

You must get all the students to read this article. Вам необхідно домогтися того, аби всі студенти прочитали цю статтю.

I will not have only myself to blame for this absurd blunder. Я не дозволю, аби тільки мене звинувачували за цю безглузду помилку.

3) The construction "*verb have/get + noun phrase + Participle I/II*" is translated either by a transitive verb into which Participle I/II is transformed, or by the combination of the verb "*бути*" (чи "*мати*", "*отримати*") with an adjective-noun group:

You must get this identified immediately. Ви повинні негайно встановити це.

It is difficult to have this message transmitted. Передати це повідомлення важко. Such transmitters will have their individual stages carefully shielded. Такі передавачі будуть мати окремі ретельно захищені каскади.

Here we will have some errors occurring. Тут у нас будуть деякі помилки.

1. Translate the sentences, determining the type of emphatic construction and the adequate way of conveying the meaning of emphasis:

1. And this is where problems begin. 2. This is what I shall in fact argue. 3. This is what is generally called their "function". 4. It is this last claim that needs to be questioned. 5. It is mostly for this second case that we find disagreement. 6. It is observations of this kind that I addressed in Mithun (1993). 7. It is this last concept that most centrally fits Lewis' general program. 8. It is in articulating issues associated with that base that this paper is most valuable. 9. It is in the last chapter where her thesis is expounded powerfully and convincingly. 10. It is precisely for this reason that I have not adhered to DuBois' use of this term. 11. It is here that active cooperation with other scientists is most desirable. 12. It is precisely in this seemingly non-strategic form that normal strategies are elaborated. 13. It is with respect to this construal of his position that I am asking whether there are adequate grounds. 14. Second, it is only after establishing what those two different ways are that they can be seen as two aspects of a single principle.

2. Translate the sentences, paying attention to word order or permutation of clauses

1. Our proposal is in accord with the ideas just stated. 2. The remarks made below are based on that research. 3. The relevant data currently available are ambiguous. 4. A number of factors were taken into consideration. 5. Two broad hypotheses are advanced. 6. Then the next trial began. 7. Two logical possibilities exist. 8. Two points are essential. 9. In Table I representative examples of both kinds are given. 10. Some preliminary studies have now been carried out. 11. Some theoretical assumptions behind this approach should be explicated. 12. The following tables and discussions present the results of the analysis. 13. The role of such data and their relevance to the general theory are discussed. 14. More recently, a novel approach has come from McCarthy (1986). 15. Preliminary results now exist, however, which suggest that these effects may also be found in other processes.

3. Translate the sentences, determining whether you are dealing with a comparative construction or pseudo-comparative:

1. In the furnace the temperature of gases may be as high as 3,500 degrees Centigrade. 2. The first experiment was conducted as recently as 1939. 3. This can be accomplished mechanically as well as by pressure. 4. Their identification may prove to be as difficult as the actual processing itself. 5. Such lines were observed and reported as early as 1921 by Massey (10). 6. Hence, as far as possible, similar effects must be assigned to the same cause. 7. Book III of Newton's "Principia" opens with a

section that is as short as it is initially surprising. 8. To illustrate this point as concretely as possible, let us look at a case for which it has long been thought the last word had been said. 9. Attention to these criteria would seem to be as unimportant or fruitless as a discussion, say, of the reality of the final result. 10. Some imitations are present, but are not as severe as those imposed on other rules. 11. My attempt has been to take this commonplace beyond the visual in as rigorous a fashion as possible. 12. As soon as the piston meets the liquid, the liquid pressure can be raised to the required level. 13. The possibility of releasing large amounts of energy was demonstrated as early as 1919 by Rutherford.

LEXICAL DIFFICULTIES IN TRANSLATING SCIENTIFIC AND TECHNICAL TEXTS

In everyday English we use *begin, follow, keep* while in scientific texts their equivalents *start, succeed, maintain* are used more often.

The meaning of the word *досліджувати* is conveyed in English by means of the lexical units according to the context and intentions of the author: *to study* – expresses the most general meaning of the words *вивчати* і *досліджувати*; *to investigate* – emphasizes the thoroughness, versatility of the study; *to examine* – besides *вивчати, досліджувати* also means *розглядати, уважно оглядати, перевіряти*; *to analyze* – *досліджувати, вивчати* (using analysis); *to consider* – *вивчати, розглядати* (taking into account different parameters of the phenomenon or process under research).

When describing the results of the research, its methods, tools and devices must be mentioned. You should take into account that the word *метод* has several equivalents and is not always translated as *method*. Its meaning can be also conveyed by such words as: *technique* – *метод, спосіб, методика*; *approach* – *метод, підхід, розгляд*; *procedure* – *метод, прийом, процедура, операція*. E.g., in computer terminology: *метод доступу* – *access method*; *метод стандартних блоків* – *building-block approach*; *метод ущільнення* – *compression technique*.

In modern scientific texts, there is an exchange of words between different fields of science. It is a result of collaboration among specialists in related sciences and it has been proved successfully in many fields. Even common words in unusual collocation may define a technical style. The tendency nowadays may even lead to more frequent occurrence of common words in scientific and technical English. Technical terms may pass into everyday language. When this happens, a word used by a restricted group of people in a certain situation becomes used more widely by more people: e.g. *hardware, bug, firewall, hacker, cracker, wizard*.

Types of Equivalents and Ways of Rendering their Meanings

Many SL units have *regular* equivalents in TL which are used in numerous TT as substitutes to those units. Some of the SL units have *permanent* equivalents in TL, i.e., there is a one-to-one correspondence between such units and their equivalents. Thus, *logarithm* is always rendered into Ukrainian as *логіарифм*, *hydrogen* as *водень*. As a rule this type of correspondence is found with such words as scientific and technical terms, proper or geographical names and similar words whose meanings are more or less independent of the particular contextual situation.

Other SL units may have several equivalents. Such one-to-many correspondence between SL and TL units is characteristic of most regular equivalents. The existence of a number of *non-permanent* (or *variable*) equivalents to a SL unit implies the necessity of selecting one of them in each particular case, taking into account the way the unit is used in ST and the difference between the semantics of its equivalents in TL.

Antonymic Translation. This type of transformation means that a certain word is translated not by the corresponding word of the TL but by its antonym, with negation being added at the same time (or, if there is a negation in the original sentence, it is omitted in translation): *It wasn't too far.* – *Це виявилось досить близько.* *Far* is translated as “близько” and a negation in the predicate is omitted.

Antonymic translation is employed to achieve faithfulness in conveying the meaning or necessary expressiveness of lexical units. There are three types of antonymic translation: *negativation* - when an affirmative in the SL (word, word-combination or sentence) is conveyed via a negative in sense or structure but identical in meaning, e.g., *to fail* – *не впоратися*, *recently* - *недавно*, *safe* – *неушкоджений*; *positivation*, when negative meaning in SL is conveyed via positive, e.g., *unalloyed* - *чистий*, *unbroken* - *цілий*, *unkind* – *злий*; *annihilation* – a way of translating when two negative components make positive meaning, e.g., *not impossible* - *можливий*, *not improper* - *відповідний*, *not until*– *лише*.

*Large-scale structures of the universe **did not become** a preoccupation of cosmology **until** the mid-1980s.* Великі структури всесвіту **стали** об'єктом докладного дослідження **лише** в 1980-ті роки.

Descriptive Translation. The descriptive way of conveying the sense of language units implies their structural transformations which is necessary to explicate their meanings with the help of hierarchically different target language units. Depending on the notion expressed by the source language word, it may be conveyed in the target language sometimes through a word-combination or even through a sentence, i.e., descriptively: *infamous* – той, що має ганебну славу; *brain-drain* – відтік наукових кадрів.

Descriptive translating/interpreting is very often employed to render the sense of idioms/phraseologisms, which have no equivalents in the target language, e.g., in English: *like one (twelve) o'clock* / миттю, вмить.

Descriptive translation is employed when dealing with the notions of specific national lexicon: *Senate* – сенат (рада університету в Англії, складається переважно з професорів).

Descriptive translation is also employed in foot-notes to explain obscure places in narration. To employ correctly this way of translating, it is necessary to know the subject field of the written text to adequately convey the sense of the text.

Special Meanings of General Words in Scientific and Technical Texts

Common words can possess specific meanings in scientific and technical texts, which are not fixed in subject-field dictionaries. For example, in everyday language the noun *suggestion* is translated as *пропозиція* and *припущення*. But in addition to these meanings in scientific and technical texts, it can also be translated as (*ймовірне, раціональне*) *пояснення*:

*An early **suggestion** for the mechanism of this reaction was postulated in 1960. Одне з перших **раціональних пояснень** механізму цієї реакції було запропоновано у 1960 році.*

The verb *realize* in everyday language is usually translated as *уявляти собі, проводити у життя*, but in scientific and technical texts it is also translated as *чітко (ясно) розуміти сутність факту (справи)*:

*Slowly it **was realized**, however, that the characteristic properties of each functional group are markedly altered. Однак поступово **стало абсолютно ясно**,*

що характерні властивості кожної функціональної групи помітно змінюються.

The word *idea* is often used in scientific and technical texts and is translated as *погляд на природу явища (факту) та відповідне його:*

*A key step in this development was the establishment of the **idea** of radicals as the organic equivalent of atoms. Вирішальним моментом у еволюції поглядів стало утвердження **пояснення** радикалів як органічних еквівалентів атомів.*

Sometimes translation dictionaries do not even fix the general scientific and general technical meanings of such words. For example, the noun *candidate*, in particular, functioning as an attribute in scientific and technical literature, has the following meanings: 1) *варіант (structural candidate "структурний варіант", 2) тип, вид (candidate solutions "види можливих вирішень", 3) засіб (information candidate "засіб інформації"), 4) придатний, відповідний, слушний (candidate material "відповідний матеріал"), 5) можливий, ймовірний, вірогідний (three candidate definitions "три можливих визначення"), 6) доцільний, перспективний; цікавий (candidate option "цікавий варіант вирішення проблеми").*

Among other words whose general scientific/general technical meanings are usually not fixed in dictionaries, the following ones can be singled out:

attraction, attractiveness, beauty, usefulness, strength, bonus — перевага, позитивний бік, достоїнство;

strategy, treatment, scenario, avenue, concept — метод, спосіб;

advanced, advantageous, attractive, viable, challenging, ambitious, desirable — перспективний;

niche — галузь (сфера) застосування (specialized niche "вузька (спеціальна) сфера застосування");

world — вид, різновид; сукупність, система; техніка (the communications world "система зв'язку", the analogue world "аналогова техніка", real world problem "практична (прикладна) проблема";

paper — стаття, тези, виступ на конференції;

to claim — висувати положення, стверджувати, claim—теза, положення, твердження;

criticism—критичні зауваження;
entity —об'єкт;
to argue —стверджувати;
to examine —аналізувати;
to give an account —пояснювати;
orthodoxy —загальноприйнятні (загальновідомі) положення;
undefended —необґрунтований;
stipulation —положення, теза;
technical—спеціальний;
to maintain —стверджувати;
to capture —пояснити, встановити;
good —надійний, достатній (*good empirical evidence* "надійні емпіричні дані");
to fit —відповідати (критеріям);
ample—значний (*ample material* "значний за обсягом матеріал дослідження");
recent development(s) — нові досягнення;
concern —проблема;
challenge —складна проблема;
symptoms— ознаки;
reviewer —рецензент;
tool —засіб, інструментарій;
point—положення;
background— тло; підготовка;
abstract —тези, реферат;
proposal —вирішення, запропонована ідея;
contribution — стаття; наукова праця.

Identification of genuine internationalisms

There are words in the source and target languages which are more or less similar in form. The formal similarity is usually the result of the two words having

the common origin, mainly derived from either Greek or Latin. Since such words can be found in a number of languages, they are referred to as *international*.

So, internationalisms are such language units which are borrowed from one and the same source language by at least three genealogically different languages in the same or similar lingual form and identical meaning (e.g., *атом, гіпотеза, тенденція, фізика, etc.*). International, however, may be not only words and phrases, but also morphemes – prefixes, suffixes and even root morphemes as the English or Ukrainian words *fund фонд, gas таз, ohm ом, park парк, pound фунт, smog смог* and many others.

These morphemes are conveyed with the help of the translator's transcription. Among the most often occurring international affixes in English and Ukrainian are the following:

1. Prefixes: anti-/анти-, ex-/екс-, inter-інтер-, trans-/транс-, ultra-/ультра-; (antibody/ антитіло, export / експортувати, international / інтернаціональний, transmission / трансмісія, ultraviolet/ ультрафіолетовий)

2. Suffixes: -ar/-ар, -er/-ер, -ist/-ист/-іст, -ssion/-сія, -tion/-ція, etc. (computer/комп'ютер, volunteer/волонтер, humanist/гуманіст, constitution/конституція, aggression/агресія, etc.)

3. Inflexions: -um/-ум, (memorandum/меморандум). -us/-ус, (radius/ радіус), -a/-а (formula/формула), etc.

These lexical and syntactic units have been acquired by the borrowing languages to designate notions hitherto unknown in them. The bulk of these borrowed morphemes, lexemes and syntaxemes are found in many languages. They are used to designate notions belonging to different domains of human knowledge or activity:

a) the social and political terminology comprising the most commonly used political, economic, philosophical, historical, sociological units of lexicon (*audit, bank, constitution, parliament, party, president, barter, sophism, etc.*). Here also belong terms designating international law, diplomacy, numerous literary terms (e.g., *drama, poet, metaphor, epithet, hyperbole, etc.*);

b) natural history/sciences terminology (*physics, mathematics, genetics, chemistry*) used not only in special but also in scientific and popular works and in mass media (*chemical/physical reaction, genes, pneumonia, etc.*);

c) numerous technical words (names of machines and their parts: *motor, carter, starter, accelerator, battery*), as well as names of different means of transport (*bus, metro, taxi*) and communication (*computer, Internet, modulus, radio, e-mail*), etc.

These and other words and phrases are referred to as *internationalisms*, or more precisely *genuine internationalisms*. The latter never considerably change their lingual (orthographic or sounding) form nor their internationally established meanings (e.g., *motor мотор, audit аудум, therapeutic терапевтичний*).

Pseudo-international words or translator's false friends

There are also words in present-day English and Ukrainian which have an identical orthographic form but quite different lexical meaning: **accurate** *точний, правильний, влучний* but not *акуратний*; **compositor** *складач (друк.)* but not *комполитор*; **data** *дані* but not *дата*; **decade** *десятиріччя* but not *декада*; **decoration** *нагорода, прикраса* but not *декорація*; **Dutch** *голландський* but not *данський*; **intelligence** *розум, кмітливість* but not *інтелігенція*; **momentous** *важливий* but not *моментальний*; **matrass** *колба* but not *матрац (mattress)*; **obligation** *зобов'язання* but not *облігація*; **prospect** *перспектива* but not *проспект*; **production** *виробництво, випуск* but not *only продукція*; **replica** *точна копія* but not *репліка*; **spectre** *привид* but not *спектр, etc.*

These English words quite accidentally coincide in their lingual form with some other borrowed words in Ukrainian. These and the like *pseudo-international* words are often referred to as *false friends of the translator (удавані друзі перекладача)*.

The authors of research papers often make mistakes in the use of pseudo international words: *actual* instead of *relevant, topical*; *complex* instead of *comprehensive*.

More often the same genuine international lexemes in English and Ukrainian may have a different morphological structure. In Ukrainian they usually take derivational and often also inflexional affixes which are rarely observed in present-

day English. As a result, most of genuine international words in Ukrainian are structurally more complicated than in English (e.g., *apathy/анатія, dietic/дієтичний, form/форма, exploit /експлуатувати, economic/економічний, etc.*)

Some genuine international words, however, may be structurally more complicated in English than in Ukrainian, e.g., **Greek:** *analysis/аналіз, diagnosis/діагноз, academician/академік, geographer/географ, mathematician/математик, philosopher/філософ, geologist/геолог; Latin:* *appendicitis/апендицит, tuberculosis/туберкульоз, rheumatismus/ревматизм, etc.*

Translating genuine and loan internationalisms

1. *Literal Translating of Genuine Internationalisms* should not be regarded as a mechanical substitution of each letter of the SL lexeme for a corresponding letter of the TL. In many cases a letter may be dropped or added (substituted for another) in the TL when it is not in full conformity with its sound or spelling systems. Nevertheless, there are many letter-to-letter transliterated genuine internationalisms in English and Ukrainian. **Latin:** *symposium/симпозіум, microscope/мікроскоп, rector/ректор; Greek:* *poet/поет, electron/електрон, drama/ драма, theatre/театр; Italian:* *concerto/ концерт, duet/дует, solo/соло; Spanish:* *armada/армада, embargo/ембарго, etc.*

2. *Translating via Transcribing.* Many genuine internationalisms are also faithfully rendered into the TL in their sounding form, e.g., **English:** *boom/бум, box/бокс, knock-out/нокаут, leader/лідер, raid/рейд, round/ раунд, track/трек; French:* *boulevard/бульвар, bureau/бюро, prize/приз, etc.*

English international compounds can be rendered in the following ways:

a) with the help of corresponding compounds having the same international root morphemes as in the SL: *electro-biology / електробіологія, gas-meter / газометр, radio-active / радіоактивний, six-footer / шестифутовий, etc.*

b) by word-combinations consisting of the same componential parts as in the international English compound words but of different than in the SL morphological structure and nature of a componential part of speech: *gas-collector / газовий (adj.) колектор, nerve-centre / нервовий (adj.) центр, police-station / поліційне (adj.)*

відділення, radio-active element / радіоактивний (adj.) елемент, etc. Thus, only *radio-active* and *радіоактивний* are adjectives in both languages.

Mixed-type compounds consisting of international and common Ukrainian root morphemes are translated in accordance with their complex nature: *gas-mask* / *протигаз*, *taxi-cab* / *таксі*, *river-basin* / *басейн річки*, *torpedo-boat* / *торпедний катер*, *turning-point* / *поворотний пункт*, etc.

4. *Descriptive Translating of International Lexemes.* Many genuine international lexemes are semantically condensed and can be translated into the TL only in a descriptive way:

a) the lingual form of the SL lexemes can be retained as the main lexemes of the TL word-combination: *civilizable* той (те), що піддається цивілізації; *classifiable* той, що піддається класифікації; *energize* викликати енергію; *examinee* той, що екзаменується/складає іспит;

b) the lingual form of the internationalism can not be retained in the TL. It happens when the internationalism has not been adopted yet by the TL: *epilogue* is a genuine internationalism in many European languages but the adjective *epilogic* derived from it is unknown in Ukrainian. Besides, some internationalisms can be substituted in the process of translation with the aim of achieving expressiveness or explaining their denotative meanings: *deputize* (v) бути представником від когось; *epilogic* заключний, кінцевий; *park* (*parking*) ставити машину на стоянку; *twopenny* нікчемний/копійчаний (вартий двох пенні).

5. *Translating by Way of Synonymous Substitution* becomes possible due to the existence in the TL internationalisms borrowed by it at different previous historical periods. The faithfulness of translation may be usually established in a text only, though it may partly be traced at the word-group level: *diagram* схема and not діаграма, *phase* період and not фаза, *committee* комісія and not комітет; *bulvar* avenue and not boulevard, *party line* політичний курс and not партійна лінія, *national economy* народне господарство and not національна економіка.

Translating of Loan Internationalisms. Loan internationalisms are constantly appearing in different languages as a result of unceasing progress in various domains of science, technology and culture. They preserve in each national language the unity

of their componential parts, i.e., their structural peculiarities, an absolutely identical notional meaning and a common sphere of functioning: *loud-speaker*: Germ. *lautsprecher*, Ital. *altoparlante*, Ukr. *Гучномовець*; *steam-engine*: Germ. *Dampfmaschine*, Ital. *macchina a vapore*, Ukr. *парова машина*; *long/short waves (radio)*, Germ. *lange/kurze Wellen*, Ital. *onde lunghe/corte*, Ukr. *довгі/короткі хвилі* etc.

Depending on their nature, as well as on their denotative meaning and their sphere of functioning, international loan units can be rendered into Ukrainian in one of the following three ways:

a) by direct translation of the componential parts without changing considerably their structural form, e.g., *coefficient of efficiency* / *коефіцієнт корисної дії*; *genitive case* / *родовий відмінок*; *personal pronouns* / *особові займенник*; *literal translation* *буквальний / переклад*, etc.

b) with the help of componential translation and some replacements, omissions or substitutions arising from the national peculiarities of the TL, i.e., depending on its stylistic mode of usage. Thus, the equivalent of the English set expression *foreign trade* is not *іноземна торгівля* but *зовнішня торгівля*, and *living standard* is not *життєвий стандарт* but *життєвий рівень*.

c) with the help of descriptive translation: *digital computer* *цифрова обчислювальна машина*; *involution* (math.) *піднесення до ступеня*; *evolution* (mathem.) *винесення з-під радикала (витягнення кореня)*, *common fraction* (mathem.) *простий дріб*.

1. Translate the following sentences paying attention to the words in italic:

1. A new problem *is studied*.
2. The cause of the explosion *has been investigated*.
3. Old manuscripts *were examined*.
4. Over 100 patients *were examined*.
5. Several substances *were analyzed*.
6. Photoelectric emission *is considered*.
7. The membranes of Golgi apparatus *are described*.
8. The design and operating conditions of the device *are discussed*.
9. The rotation mechanism *is discussed*.
10. The main principles *were discussed*.
11. Temporal characteristics of photodetectors *have been discussed*.

12. The advantages of the method *are outlined*.
13. *The nature of changes* in plant cold-resistance *has been considered*.
14. Preliminary data *have been obtained*.
15. Diffusion coefficients *were determined*.
16. Rare documents *are found*.
17. The existence of two levels *has been established*.
18. The energy of Stark sublevels *has been calculated*.
19. The intensity of living organisms in the lake Ontario *was computed*.
20. The DNA content in the macronucleus *was measured*.
21. The pulse *intensity has been estimated*.
22. *The constants were estimated* by means of computer-calculated graphs.
23. The average *value of... was estimated*.
24. *The role of berilium action was evaluated*.
25. *The system performance was evaluated*.
26. *The grain size is evaluated*.

2. Translate the following genuine or pseudo-international words:

Actual, adequate, accuracy, ambition, analyst, admiral, algebraic, allergy, annulment, appellation, archive, aspirant, bronchitis, barbarity, buffet, capillary, civil, code, concern, control, cybernetics, direction, dramatic, dynamic, effective, elementary, ellipsis, epochal, expedition, familiar, fabric, fiction, film, figure, front, fantasia, hierarchical, humanity, inductor, intelligence, conductor, imitation, instrument, juridical, liberal, medicine, minister, motion, nation, natural, notation, obligation, objective, original, paragraph, paper, pathos, petition, reduction, rheumatic, reason, scenery, scholar, stress, symbol, press, protection, physique, record, revolution, scene, storm, tank, terror, thesis, vector.

TRANSLATION OF TECHNICAL WORDS (TERMS)

A term is one word or few words taken together, an abbreviation or a combination of words and symbols that expresses a particular notion in a particular field of science. Terminology varies significantly with a particular field of science (business/finance, information technology, chemistry, engineering, environment, law, medicine, social sciences, and many others).

Terms always tend to be used in their primary logical meanings as they indicate precisely a specific scientific concept and particular objects. An ideal term should be monosemantic and when used within its own domain, it does not depend upon the microcontext. Polysemantic terms may cause misunderstanding. But there are many polysemantic terms, e.g., up to 30 meanings of the noun *frame* in a polytechnic dictionary (*рама, корпус, каркас, кадр, конструкція, система координат, опора, блок даних, формат, станок, шпангоут, обойма, скоба, виставковий стенд, межі, планер літака, габарит електромашини, будувати, утворювати, etc.*).

Terms as a rule do not have synonyms. But in fact, some terms have synonyms, e.g., *лекало – curve, draft, gage, mold, pattern, template.*

When a term crosses the field boundary, it becomes an ordinary word and can get additional meaning. E.g., the adjective *nuclear* used in physics and biology is a neutral word, but in such phrases as *nuclear state, nuclear weapon* it has a negative emotional meaning.

From the point of view of their structure and origin terms are divided into:

- simple terms: *frame, gate*;
- derived words formed with the help of prefixes and suffixes: *reset, interface, adapter, computable.*
- compound terms consisting of at least two stems: *gateway, easy-to-configure*;
- compound terms based on Latin or Greek origin: *biology, thermonuclear*;
- terms formed by conversion: *a bridge – міст; to bridge – перекивати; plug in – підключати, plug-in – підключена програма*;

- shorted and blended words: *radar* (as an acronym for *radio detection and ranging*), *transceiver* (*transmitter/receiver*), *H-bomb* (*hydrogen bomb*), *modem* (*modulation/demodulation*), *netiquette* (*net/etiquette*).
- terminological combination of words: *circuit breaker* (*автоматичний вимикач*), *random access memory* (*оперативна пам'ять*);
- terms borrowed from another terminological system of the same language;
- terms borrowed from other languages.

There exist many homonymous terms (similar in form but with different meanings). Homonymy can be found in different branches of science. For example, *node* – *точка перетину* in mathematics, *вузол мережі* in computer systems, *вузлова точка, елемент* in computational mechanics. Homonymy in the same branch of science causes even more problems. E.g., *mapping* in IT-field can be translated due to the context as 1) – *відображення чогось в іншій системі*; 2) – *процес позначення літерами мережних дисків*; 3) – *нанесення на карту*; 4) – *перетворення даних*.

In the Ukrainian language we use the same term *розрядність* in combinations with other words, e.g., *розрядність даних*, *розрядність кольору*, *розрядність коду*, *розрядність модулів*. In English, each compound term requires for another candidate for translation: *розрядність даних* – *data width*, *розрядність кольору* – *color depth*, *розрядність коду* – *code length*, *розрядність модулів* – *bit-size of moduli*.

There is also homonymy for abbreviations: AF – *Air Force*, *audio frequency*; PC – *Personal Computer*, *Program Counter* (*лічильник команд, спеціалізований реєстр процесора*).

Affixation is the most common way of forming neologisms. New words are created by adding prefixes or suffixes to their roots. Among the most popular prefixes, which are used to form scientific terms in English are the following ones: **mini-** (**міні-**)(e.g., *minicomputer* - *мінікомп'ютер*, *miniport* - *мініпорт*, *minitower*-*міні-вежа*, *одна з модифікацій корпусу ПК*); **macro-** (**макро-**)(e.g., *macrocell* - *макроелемент*, *macroprocessor*-*макропроцесор*, *macroassembler*-*макроасемблер*); **inter-** (**інтер-, між-, взаємо-, періодичність дії**) (e.g.,

interface - інтерфейс, *interframe* -міжкадровий, *interchangeable* - взаємозамінний, *interlace* - чергувати); **super-** (**супер-, над-**) (e.g., *supercomputer* - суперкомп'ютер, *supersampling* – надлишкова вибірка, *superset* -надмножина); **multi-** (**мульти-, багато**)(e.g., *multi-access* - мультидоступ, *multidimensional*- багатовимірний, *multi-core* – багатоядерний, *multimedia* - мультимедія); **hyper-** (**гіпер-**)(e.g., *hypertext*-гіпертекст, *hypermedia*-гіпермедія); **non-** (**не-, без-**) (e.g., *nonessential* – несуттєвий, *nonimpact* - безконтактний, *nonprofit* - безприбутковий); **poly-** (**полі-, багато, різний**) (e.g., *polycyclic* - поліциклічний, *polysemantic*- полісемантичний, *polygon* – полігон, багатокутник).

Other prefixes which are also widely used are the following ones: **after-** (**після, до, під, вторинний**) (e.g., *aftereffect* - післядія, *aftercooler* – доохолоджувач, *afterinjection* - підвпорскування, *afterfiltration* – вторинна фільтрація), **co-** (**спів-, спільний**) (e.g., *coauthor* – співавтор, *co-education* - спільне навчання), **counter-** (**проти-, контр-, зустрічний, супротивний**) (e.g., *counteract* – протидіяти, *counter appeal* - зустрічна апеляція), **dis-** (**дис- де-, роз-**)(e.g., *disfunction* - дисфункція, *disintegration* – дезінтеграція, *disconnect* – роз'єднати), **extra-** (**поза-, екстра-, не-**)(e.g., *extraterrestrial* – позаземний, *extracode*-ектракод, *extralegal* - неузаконений), **homo-** (**гомо-, омо-, уні-**)(e.g., *homographic* - омографічний, *homogeneous* - гомогенний, однорідний, *homophonous* - унісонний), **mis-** (**не-,** словами із значенням “неправильний”, “хибний”, “недостатній”, “поганий”) (e.g., *mismatch* – невідповідність, *miscalculation* – неправильний розрахунок, *misprint* - друкарська помилка), **omni-** (**всюди-, все-**)(e.g., *omnifaceted*- всебічний, *omnipresent* - всюдисущий), **over-** (**пере- (надлишок), над- (зверху), за-** (поза тим, що позначено основою) (e.g., *overflow* – переповнення, *overline* –надкреслення, *overboard* - за бортом), **para-** (**пара-, напів-, псевдо-**)(e.g. *paraphrase* - парафазний, *paramilitary* - напіввійськовий, *parajournalism* - псевдожурналізм) **re-** (**пере-, ре-** (зворотній процес)(e.g., *reboot* – перезавантаження, *reconfigurable* - реконфігурований), **quasy-** (**квазі-, напів-, псевдо-**)(e.g., *quasy-stellar* - квазізірковий), **self-**(**само-, авто-**)(e.g., *self-replication* – самовідтворення, *self-synchronization*- автосинхронізація), **sub-**(**напів-, суб-, під-**)(e.g., *subarid* – напівзасушливий,

subagent - субагент, *subconscious* – підсвідомий), **in-** (не-, без-, де-, роз-) (e.g., *undetected* – невиявлений, *inwinged* – безкрилий, *unblocking* – деблокування, *unbalance* - розбалансування).

The most productive suffixes are as follows: *-ing*; *-tion*; *-er*; *-or* (e.g., *processing*, *spacing*; *computation*, *application*, *emulation*, *encryption*; *register*, *printer*, *processor*).

1. Nouns, including compound nouns are formed on the basis of verbs or nouns with the help of the suffix *-er/-or*, (*reader*, *speech-writer*). They are translated using the following ways:

1) transcoding: *laser-* лазер, *container-* контейнер, *distributor-* дистрибутор;

2) derived terms with the suffixes *-ник*, *-ач*, *-ар/-яр*, *-ець*, *-ка*: *dissolver* - розчинювач, *conductor* - провідник, *dispenser* - розпилювач, *caster* (founder, *moulder*) - ливарник, *breaker* - вимикач, *transmitter* - передавач.

2. Terms with the semi-suffix *-free* have two main meanings: one that does not contain something: e.g., *salt-free* – такий, що не містить солі, *sugar-free* – такий, що не містить цукру; free from something: *aberration-free image* – безабераційне зображення, *error-free communication* – безпомилкова передача даних.

3. English terms with the suffix *-ism* can be translated in the following ways:

1) by the corresponding term with the suffix *-ізм/-изм*: *scientism* - сциєнтизм, *synergism* - синергізм, *Italicism* - італіцизм;

2) by the Ukrainian term with the suffix *-ність*: *pedanticism* - педантичність, *scholasticism* - схоластичність, *microseismism* – мікроейсмичність;

3) by the Ukrainian term with the suffix *-анство*: *Nietzscheism* - ніцшеанство, *Kantism* - кантіанство;

4) by the Ukrainian term with the suffix *-ство/-цтво*: *decadentism* — декадентство, *quislingism* - зрадництво, *Catholicism* – католицизм;

6) by descriptive translating, e.g., *escapism* - намагання (бажання) уникнути реальності (або реалій життя), *marginalism* - перебування поза суспільними групами (або на межі груп).

4. Adjectives with suffix *-less* have the following meanings:

1) deprived of something: *painless* - безболісний, *roofless* - без даху;

2) impossibility of any action: *cureless* - невиліковний, *recoilless* - безвідкатний, *harmless* - нешкідливий.

5. There are the following ways of translating derived terms with the suffix *-like*:

1) using a derived term with a semi-suffix-подібний: *leaflike* - листоподібний, *needlelike* - голкоподібний;

2) using the combination of words "схожий на, подібний до": *heartlike* - подібний до серця, *Earthlike* - схожий на Землю, *adrenalinlike* - подібний до адреналіну;

3) with the help of the comparative phrase "як у...": 3) *stonelike* hardness - міцність як у каменя.

6. Words with suffix *-ologist* are translated mainly by terms with the suffix *-олог* and the term component "-знавець": *musicologist* - музикознавець, *climatologist* - кліматолог, *neuropsychologist* - нейропсихолог, *radiologist* - радіолог.

Terms with semi-suffix *-worthy* are translated mainly in the following ways:

1) by a compound term containing a subordinate attributive clause with a predicate such as "заслужувати", "бути придатним", which is the direct counterpart of a semi-affix *-worthy*: *newsworthy* - що заслуговує на висвітлення у пресі (новинах), *creditworthy* - що заслуговує на довіру (як отримувач кредитів);

2) by a compound term containing "-здатний" which is the direct counterpart of a semi-affix *-worthy*: *creditworthy* - кредитоздатний, *air-worthy* - польотоздатний;

3) by a compound term containing word combination "придатний до (для)": *airworthy* - придатний до польоту, *flighworthy* - придатний для польотів.

Translation of **compounds** involves two main stages – analytical and synthetic. First, it is necessary to correctly define the components of a compound term at the analytical stage, that is, the translation of the individual components. It is also important to define semantic relations of the components and the relations between them and the main component of the terminological phrase. The nature of these relations determines the order of the translation of a compound term and the translation itself. The synthetic stage of translation involves the construction of the components depending on the specified semantic relations and the final version of the translation of a compound term.

The translation of some words can be almost independent of the context and be the same in different combinations of such a word with other words, for example, *scholarly literature* - наукова література; *scholarly manuscript* - науковий рукопис; *scholarly paper* - наукова стаття; *scholarly society* - наукове товариство; *scholarly inquiry* - наукове дослідження; *scholarly exchange* - науковий обмін.

Much more often, depending on a word combination, a term can have different meanings and can be translated differently, e.g., *abnormal decay* - аномальне затухання; *abnormal end of task* - аварійне припинення (виконання) завдання; *abnormal mode* - нештатний режим; *abnormal operating conditions* - ненормальні умови експлуатації; *abnormal operation* - обробка несправним інструментом; *abnormal termination* - аварійне завершення; *abnormal transient* - нерозрахунковий перехідний режим.

Models of compounds:

N1+N2, e.g., *accuracy analysis* – аналіз точності, *clock speed* – тактова частота, *labor cost* – витрати на робочу силу, *application period* – термін подання заявки.

(N+Part.I)+N, e.g., *air-cooling technique* – метод охолодження повітря, *plane boarding gate* – вихід, через який здійснюється посадка на рейс.

(N+Part.II)+N, e.g., *fluid-filled spaces* – простір, який заповнений рідиною, *cold-blooded animals* – холоднокровні тварини.

(Adj.+PartI)+N, e.g., *hard-working student* – студент, який багато працює, *long-lasting immunity* – довготривалий імунітет.

(Adj.+PartII)+N, e.g., *nuclear-armed warhead* – ядерна боєголовка, *medium-sized circuits* – схеми середнього розміру.

(Num.+PartII)+N, e.g., *two-wheeled vehicle* – двоколісний транспортний засіб, *one-sided surface* – одностороння поверхня.

Anthroponimic compounds, e.g., *Doppler's effect* – ефект Доплера, *Brookfield viscosity* – вязкість за Брукфілдом, *Fourier optics* – Фур'є-оптика, *Monte-Carlo simulation* – моделювання методом Монте-Карло

PREFIXES IN IT-TERMINOLOGY

Prefix	Meaning	Example
<i>bi</i>	<i>two</i>	<i>bi-directional</i>
<i>uni</i>	<i>one</i>	<i>uni-directional</i>
<i>tera</i>	10^{12}	<i>terabyte</i>
<i>giga</i>	10^9	<i>gigahertz</i>
<i>mega</i>	10^6	<i>megahertz</i>
<i>kilo</i>	10^3	<i>kilobyte</i>
<i>milli</i>	10^{-3}	<i>millisecond</i>
<i>micro</i>	<i>small</i>	<i>microcomputer</i>
<i>macro</i>	<i>large</i>	<i>macroinstruction</i>
<i>multi</i>	<i>many</i>	<i>multimedia</i>
<i>anti</i>	<i>against</i>	<i>anti-virus</i>
<i>infra</i>	<i>below</i>	<i>infrared</i>
<i>intra</i>	<i>within</i>	<i>intranet</i>
<i>inter</i>	<i>between</i>	<i>internet</i>
<i>hyper</i>	<i>above, beyond</i>	<i>hyperlink</i>
<i>tele</i>	<i>distant, far</i>	<i>telecommunications</i>
<i>auto</i>	<i>by itself</i>	<i>automated</i>
<i>cyber</i>	<i>machine control</i>	<i>cyberspace</i>
<i>super</i>	<i>higher in quantity or degree</i>	<i>superhighway</i>

1. Find an IT term for each of these definitions. Each term includes one of the prefixes listed above:

- 1) working at a distance;
- 2) a system of numbers with 2 as its base;
- 3) a way of communicating between a user and a computer;
- 4) describes a program which allows two way communication between a user and computer;

- 5) set of computer instructions operating as one unit;
- 6) having many different modes of input;
- 7) a computer higher in scale than any other;
- 8) a machine which provides cash to bank customers without requiring a human operator (an a.... Teller Machine);
- 9) a very small but powerful processor;
- 10) a word-processing feature which corrects by itself.

2. Match the words (1 – 8) with the words (a – h) to make technical terms and translate them into Ukrainian:

- | | |
|----------------|--------------|
| 1) operating | a) network |
| 2) system | b) area |
| 3) broadband | c) interface |
| 4) instruction | d) system |
| 5) storage | e) set |
| 6) user | f) language |
| 7) programming | g) method |
| 8) processing | h) software |

TRANSLATION TRANSFORMATIONS

In *lexical transformations* different replacements of specific lexical units (words and word combinations) of SL by the units of TL, which are not their lexical equivalents, take place. Here the replaced units if taken separately have other referential meanings, than the meanings of the units of TL. More often here we meet three cases: *concretization, generalization and replacement*, based on cause and effect relations (replacement of cause by effect and vice versa).

Concretization. This type of lexical transformations is used when translating words with wide and non-differentiated meanings. If English verbs mostly denote actions in rather a vague general way, Ukrainian verbs are very precise in denoting not only the action itself but also the manner of performing this action. This transformation is applicable not only to verbs but to all words of wide semantic range, no matter to what part of speech they belong: adverbs, adjectives or nouns. The noun *thing*, which has a very abstract and vague meaning, the same as *stuff, point* or *camp*, is used to denote practically anything, often remaining stylistically neutral. In Ukrainian, however, nouns with such a general meaning are less universal, besides, they would belong to colloquial register which often makes it impossible to use them in translation. E.g., *thing* if translated by way of concretization may have the meanings: *рiч, предмет, справа, факт, випадок, обставина, витiвiр, iстота, проблема*.

But at the foundational level, things are less straightforward, because different scholars hold different conceptions of the nature of the object. Проте на засадничому рiвнi проблеми менш зрозумiлi, тому що рiзнi вченi мають рiзнi уявлення про природу об'єкта.

Generalization is the phenomenon opposite to concretization; the notions with narrower meanings in the source language are replaced by the units with broader meanings in the target language. We have to resort to generalization when in the target language there are no precise notions analogous to the ones in the source language. In many cases the norms of TL make it unnecessary and even undesirable to translate all the particulars expressed in SL. The necessity to use generalization

may be caused by purely pragmatic considerations. In the original text there may be many proper names informative for the native speakers of SL and absolutely uninformative for the readers in TL. These may be the names of some companies, goods produced by those companies, shops (often bearing the names of their owners), etc. It is recommended to substitute names (unless they are internationally known or play an important role in the context) by generic words denoting the whole class of similar objects.

*The samples **exhibit** high resistivity./ Ці зразки **характеризуються** значним опором.*

*American society was an ideal **vehicle** for industrialization. /Американське суспільство було ідеальним **середовищем** для проведення індустріалізації.*

In the translation process *lexical replacements*, based on cause-effect relations between notions, occur. Thus, word or word combination of SL may be replaced in translation by a word or word combination of TL, which by its logical relations denotes the cause of action or condition denoted by a translated unit of SL. This transformation presupposes semantic and logical analysis of the situation described in the text and consists in *semantic development* of this situation (in Ukrainian the transformation is called “*значеннєвий (змістовий) розвиток*”). If the situation is developed correctly, i.e., if the original and translated utterances are semantically connected as cause and effect, the transformation helps render the sense and observe the norms of TL.

Addition is a translation transformation resulted in increasing the number of words, word forms or members of the sentence in translation.

*There are many different **applications** of this material. /Цей матеріал застосовується у багатьох різних галузях.*

*The mutual effect **introduces** a complex change. / Перехресний вплив призводить до появи комплексних поправок.*

Addition is used in translating Nouns (*intricacies* – “складні проблеми та заплутані питання”), Adjectives (*recurrent* “що періодично повторюється”), Verbs (*to solve* – “знаходити вирішення”), Adverbs (*theoretically* – “у теоретичному плані”), substantivized adjectives (*the intracellular* –

“внутрішньоклітинне середовище”), words of other parts of speech and word combinations (*data rates* – “швидкість передачі даних”).

Omission is a translation transformation which is resulted in removing a certain speech element (not rarely this is a pleonastic word, word form, member of a sentence or a part of a sentence):

The explosion was terrible while it lasted. Вибух був жахливий.

This is a very difficult problem to tackle. Це дуже складна проблема.

1. Apply compression / omission technique while translating the following sentences:

1. Satellites and spacecraft used the power of the sun to create electricity, but the technology remained too expensive for anyone but the government to use. 2. The first book produced by Gutenberg press was “The Incunabula”. This book became the standard in the history of book printing and publishing and was a giant leap for printing and publication. 3. Thus materialism has adversely affected the entire framework of our society. 4. Intelligent robots can be programmed to reach the earth’s nadirs. They can be used to dig for fuels. They can be used for mining purposes.

2. Apply concretization technique while translating the following sentences:

1. If you desire to get into a computer hardware career, you are required to at least own a bachelor’s degree in the engineering field. 2. That is, all the tangible things in the world that we acquire may go some day but still we have the strength within us to survive in tough condition. 3. Murphy’s Law will find you and turn things from bad to worse. 4. The diversity of the oceans that the census will reveal exceeds all expectatins. So does the extraordinary performance of the new technologies which were pressed into service. 5. During the 1600’s, the famous French philosopher, Rene Decartes, introduced the concept of dualism, which stressed on the fact the body and the mind were basically two separate entities that interacted to form the normal human experience.

3. Apply generalization technique while translating the following sentences:

1. The engine runs in a very simple manner. 2. This can further help both, view a range of designs and experiment with colors and textures to arrive to one’s dream home. 3. In the transparent ocean scientists have the tools to say where fish are, how many of them there are and where they are going. 4. Far less agreement exists concerning the details of positive prescriptions for science. 5. Piston rings are rings

present around the piston, which preclude the fuel and air mixture from going into the sump during the process of combustion. 6. A “society” may even, though more by means of metaphor, refer to a social organism such as an ant colony. 7. Every man participates in a culture, defined as “the arts, customs, habits, beliefs, values, behavior that constitute a people’s way of life”.

TRANSLATION OF TECHNICAL DOCUMENTS

The peculiarity of translating technical documentation is an excessive amount of technical words, frequent use of abbreviations, lexical neologisms, and units of nationally biased lexicon. A technical document is a “how to” document that typically explains how to operate, maintain, or create a product. Technical documents are generally created to target a specific audience.

Types of technical literature.

Technical literature includes the following types of texts:

- scientific and technical literature (monographs, proceedings, articles, patents);
- educational literature on technical sciences (textbooks, manuals, reference books);
- popular scientific literature in various fields of science and technology;
- technical and accompanying documentation;
- technical advertising.

There are certain categories of technical documents that are most often translated.

1. User Guides / Manuals

User guides contain instructions for installing, operating and troubleshooting products or services. User guides accompany software, hardware, electronics, appliances, devices, instruments and equipment. When translated accurately, user guides help provide precise messaging to all users, decreasing frustration and user challenges.

2. Maintenance Manuals

A maintenance manual is a technical communication document intended to provide the information necessary to maintain machinery or systems. A maintenance manual may include a definition of the support environment, roles, and responsibilities of maintenance personnel and the regular activities essential to support the system's consistent operation. The texts of technical manuals and specifications often contain sentences without a predicate or subject.

3. Webpages and Websites

Translating and localizing the webpages of a website is essential for companies, business and individuals who want to market and sell their products internationally as well as attract their domestic audiences. Information may include product descriptions, frequently asked questions, product specs, pricing information, testimonials or corporate history.

4. Advertising

Adverts come in many forms: from TV, movie, and radio to newspaper, magazine, website, and social media advertisements. Translation of advertising is a complex process. Advertising translation involves converting an advert designed for one audience into a format that reaches a wider, international audience. This process doesn't just cover direct language-to-language translation but also social, cultural, and linguistic factors.

When translating brands, the social and cultural factors must be taken into accounts.

The English advertising writings are literary, but in another way, it must be simple and easy to remember. Therefore, the transition of such sentences must follow the same style, with concise and fluent words.

Interrogative and imperative sentences can be seen here and there in advertisement, to stimulate audiences to buy. So, the translation must be based on the same rules.

In order to make an advertisement impressive enough to attract customers, the copywriters often use parallel structure. When translating, we'd better use the same pattern, to make it catchy.

5. Patents

Patent documentation typically involves patent specifications, office actions, lawyers' correspondence, and anything else required during the patent application and filing process. Patent translation is one of the most demanding fields of technical translation. It requires high language pair competence, deep knowledge of technical terms, and an in-depth understanding of legal terminology.

Filing vs. Information Translations

In general, there are two types of patent translation: *patent translation for filing and for information*. The main differences between filing and information translation are their audience and purpose.

As the name suggests, a patent translated for filing will serve as your official record in the patent application process. Their target audience consists of legal professionals, patent officials, and patent licensees, whose job is to examine your application. These documents should be translated clearly and concisely, with the least technical jargon as possible, while still conveying the meaning of the invention.

Patent translation for information is typically used as legal evidence in court proceedings for patents that have already been filed. Usually, this type of translation is used to learn the contents of already filed patents, and it should be as close to the original as possible.

The patent consists of five parts: 1) bibliographic data about the patented invention (the document number, filing and publication dates, name of the patentee(s) and addresses, etc.); 2) analysis of the state of the art in the field of technology to which the invention refers, analysis of the prerequisites for invention; 3) the purpose of the invention, a brief formulation of the essence of the invention; 4) a full description of the invention, a description of illustrations, examples of implementing the invention; 5) a claim.

In the second part of the patent the following phrases should be used:

This invention relates to a process .../ Даний винахід стосується способу,,

This invention is concerned with the manufacture of..../ Даний винахід має відношення до....

This invention relates in general to.../ Даний винахід в основному стосується

Background of the invention / передумова створення винаходу

In the third part of the patent the following phrases should be used:

Broadly, it is an object of the invention / Загальною метою винаходу є....

It is an object of my invention to provide / Метою даного винаходу є....

Another object is the development of / Інша мета полягає в розробці....

In the fourth part of the patent the following phrases should be used:

Specifically with reference to Fig..../ Зокрема, як показано на малюнку...

It will be appreciated that / Спеціалістам даної галузі очевидно, що...

In the arrangement in Fig. ...У конструкції, яка показана на мал....

The main communicative block of a patent description is a *claim* (*патентна формула*), in which all the communicative aims are expressed. Patent descriptions in English usually start with such phrases as: *What is claimed as new is.... Having thus described my invention, I claim... The invention is claimed as follows... I claim as my invention. It is therefore, particularly pointed out / distinctly claimed as the invention...* All these phrases are translated as: *формула винаходу, патентна формула, предмет винаходу*. The translated claim must fully correspond to the original, permutation of sentence elements and syntactical or stylistic changes are not allowed, the subject of invention should be expressed in one sentence. Strict regulation of patent description demands the use of set phrases and clichés in translation.

Norms and requirements for technical translation

Numbers.

When translating from English, you must follow the rules for writing numbers, i.e., instead of a period, use a comma in the designation of fractions, separate numbers into groups with a space every three characters, etc.

Units of measurement

The country of manufacture and the target market may use different Units of Measure (e.g. Imperial systems vs. Metric System). For the translated manual, the measurements can be:

1. Left as is in the source document;
2. Left as is and followed in parentheses by a conversion to the target country's standard UoM;
3. Converted to the target country's standard UoM and followed in parentheses by the original measurement;
4. Converted to the target country's standard UoM only.

Schemes, images, graphics

Also, if you have a layout design, you must only translate the text, use the "Fig." to designate an illustration; do not put a full stop in the titles, titles of tables, and illustrations.

Tables of contents/indexes

References such as Tables of Contents and Indexes should be generated in the target language once the translation has been finalized. Additionally, it is a good practice to actually validate these automatically-generated tables for accuracy and to regenerate them after every revision session.

Spaces in the text

It is necessary to ensure that there is only one space between words in technical translation. Also, do not omit spaces in generally accepted abbreviations and norms for the use of units of measurement.

The layout is also important. Some texts need not only to be translated but also given the appearance corresponding to the original document. This applies to drawings, diagrams, etc.

CAT tools

CAT tools (specialized translation software) ensure consistency within a single document and across a company's entire documentation. Having found a match in the translation project, the program automatically pulls up the data from the memory, which stores the previous texts. This feature is very useful for translating technical documents that are subject to repetitive content. Thanks to the use of translation memory, projects are completed faster and are marked with high accuracy.

1. Translate an extract from the user's manual:

How to Use RICOH Gate La

RICOH Gate La is a software program to import images from the camera to a computer. By simply connecting the camera to your computer via a USB cable, images are automatically imported to the computer. On the RICOH Gate La window, you can make various settings including auto-saving upon connection and the destination folder (where images will be saved).

Starting

RICOH Gate La is already installed with Caplio Software. Connecting the camera to your computer automatically starts the software and begins downloading of images from the camera.

Exiting

To exit RICOH Gate La, follow either of the steps below. • Click the [MENU] button on the RICOH Gate La window and select [Exit] from the displayed menu (see “The RICOH Gate La Window”). • Right-click the RICOH Gate La icon on the task bar and select [Exit] from the displayed menu.

Restarting

To restart RICOH Gate La after exiting, follow the steps below. • From the [Start] menu, select [All Programs] or [Programs] then [Caplio Software] then [RICOH Gate La].

The RICOH Gate La Window

Once RICOH Gate La starts up, the following RICOH Gate La window appears on your computer screen.

1 [MENU] Button

Click this and the following menu appears.

2 [Save] Button Click this and the images are downloaded from your camera.

Caution

If the message indicating that [CONNECTING... PRESS [ADJ.] KEY TO DIRECT PRINT] appears on the camera LCD monitor, do not click the [Save] button.

3 [Application] Button

The application registered in [Option settings] is started.

4 [Minimize] Button

Minimizes the window and displays its icon on the Windows task bar. If you click on the icon, the window will be displayed again.

5 Indicator

The “Indicator” lights if the camera is connected via USB cable. When lit, if you move the mouse pointer over the “Indicator”, [Camera is being connected] appears. When your camera is not connected, the “Indicator” is grayed out, and if you move the mouse pointer over it, [Camera is being connected] does not appear.

TRANSLATION OF ACADEMIC PAPERS

Translation is a complex skill that academic translators work years to master. Even then, finding a translator who is not only a language expert but also familiar with the concepts, terminology, and theories in the specific field can be difficult. All translations are interpretations of one form or another, and there are often cases where even a skillful translator might misunderstand the intention of the author.

A significant role in the scientific and technical papers is played by prepositions and complex conjunctions (e.g., *in order that, provided that, as though, etc.*) which create logical connections between the individual elements of sentences. In addition, the scientific and technical papers frequently use adverbs, which are integral parts of the development of logical thinking. Technical terms have to be translated using special dictionaries and glossaries. The units of nationally biased lexicon, as a rule, are not translated but transliterated or given in the text in their original writing. Optimal translation solution for the phraseology is a search for identical phraseological items in the target language. In the absence of direct correspondence, the original idiom can be translated by searching for similar phraseology items, having a similar meaning with the original one, but built on a different verbal and image basis. Geographical names and well-known proper names are given in Ukrainian transcription.

Stylistic peculiarities of the translation of academic papers are language clarity, lack of expressive, emotional and imaginative patterns. It is necessary to avoid literal translation which always leads to the distortion of the original meaning, or violation of the rules of the source language. The literal translation is based either on formal resemblance of the English word with the Ukrainian one, or the use of the main or most common meaning of the English word without considering the context as a whole, e.g., *contribution* – *стаття, наукова праця not внесок, treatment* – *трактування, метод, not ставлення, лікування claim* – *теза, положення not претензія, etc.*

Knowledge of the typical translation errors and their causes contribute to their prevention. Translation errors are divided into two main types: *speech, and functional*

and informative. Speech errors, in turn, are subdivided into system-speech and normative speech errors. They feature a violation of the language rules and speech standards (usage). *Functional and informative errors* are divided into “distortions” and “inaccuracies”. The distortions are errors in the translation, misleading the translation recipient about the content of the source text. Inaccuracy features lesser degree of equivalence violations, and less misleading impact, e.g., *provide a means – give a chance not ensure a measure, to process – for the procedure not to produce, silicon – graphite not carbonium, etc.*

Grammatical peculiarities of the translation of academic papers are characterized by frequent use of participial and adverbial phrases, simple, complex and compound sentences, passive voice, infinitive, participial and gerundial constructions. The translator can be misled by the fact that both English and Ukrainian feature a lot of similar grammatical forms and syntactic structures, the functions and meanings of which do not match in the languages. Similar names of such forms and constructions borrowed both in Ukrainian and in English from Latin, should not be misleading. English infinitive and participle functionally and meaningfully differ from the corresponding Ukrainian forms. In the course of translation, it is required to use *grammatical transformations*. Functional correspondence is achieved by a complete change of structures, word order and by replacing parts of speech and sentence, adding and omitting words.

MAIN TYPES OF SCIENTIFIC AND TECHNICAL TRANSLATION

There are several types of scientific and technical translation, namely: full translation (translation of the whole source language matter), summary translation, annotated translation, consultative translation.

Full written translation (*Повний письмовий переклад*)

In a full translation, the entire text is submitted to the translation process, that is, all parts of the ST are replaced by the target text.

Written translation is the main type of scientific and technical translation. Mostly all scientific and technical information (patents, instructions, equipment specifications and user's manuals) is translated into the target language in a written form. The translation process consists of three stages: perception of information (reading or listening), understanding the information, and its interpreting in the target language. Thus, at the first stage when reading the source text, the general content is perceived without details. The next stage involves analysis of the text, in particular, words, grammatical structures, phrases, identification of terminology. To do this, the text must be read again and analyzed.

The title is often translated after reading the whole text, because in the scientific and technical literature titles are characterized by a specific style.

Skills of using electronic and paper subject-field dictionaries are of great importance in the process of translating scientific and technical literature.

In the process of translating, it is necessary to use standardized terminology, accepted symbolic notations and abbreviations, and distinguish general, academic and technical words which have different meanings due to their use in various fields of science and technology. Therefore, the context must be taken into account when selecting a translation equivalent, for example, *integer* – *ціле число* in mathematics, *убудований тип даних* in programming; *polygon* – *багатокутник* in mathematics, *примітив* in computer graphics.

As scientific and technical terminology is constantly evolving, new meanings of the terms appear. If there is a term in the source text that is not given in the target language dictionary, it is necessary to look up an appropriate equivalent in reference

book or special literature in the subject field or apply descriptive translation technique.

Annotated translation (*Анотаційний переклад*)

The main purpose of an annotated translation is to annotate the source text in the target language. Annotation means a critical or explanatory note; a commentary, a brief summary of the content and a list of the main issues of a book, article, manuscript, etc. An annotation should give the reader an idea of the content, structure and purpose of the original matter. In order to make an annotated translation, you need to read a book or an article, make a plan, formulate the main provisions, and make a list of key issues. This is a free translation, which is a brief description of the original matter.

When making an annotation it is necessary to comply with certain requirements, namely:

- Annotations should have clear content, which is understandable for reading and at the same time it should contain the most important issues of the original matter;
- Annotations should be written concisely and accurately using the language which is easy to understand without the use of complex syntactic constructions;
- Annotations should reveal the title of the original matter and the sources of the information;
- The size of an annotation depends on the significance of the annotated material, its style and purpose.

The structure of the annotation consists of the following parts: introduction (the title of the article, the surname and name of the author in the target language; the title of the article, the surname and name of the author in the source language; the title of the magazine or book, publishing house in the source language; year, month, issue of the periodicals; number of pages); descriptive part (the list of the main provisions of the source matter, a very brief description of the subject matter); conclusion (summary of the author's results, reference to the bibliography and the number of drawings).

Summary or Gist Translation (*Реферативний переклад*)

The purpose of a summary translation is to make a short summary of the key points of the source document in the target language (the translation of the selected parts of the source text).

This can be applied, for example, to merger and acquisition transactions, or litigation discoveries. These often entail large volumes of material that need to be examined for relevance; if a document is found to be irrelevant then there is no need for a full translation. For this case a summary translation is the most cost-effective option.

Summary translations may also be beneficial in situations where the turnaround time is very tight. A professional translator will read through a document to assess the most important points. The document is then summarized and translated into the target language. This will provide the reader with a basic and essential understanding of the content. Although a summary translation is not ideal for publishing or distribution, it may meet the specific needs within a given situation.

Summary translation may also be known as “gist” translation or preliminary translation. However, these terms are not standardized within the translation industry.

Summary translation consists of the following 4 stages:

1. Scanning: a translator looks through the whole source text consulting special literature or reference books in order to grasp the main idea of the text and determine the meaning of its terminology.

2. Selection: a translator marks the text choosing the parts for translation and neglecting those which have no importance.

3. Reading: it is essential to read the selected parts of the source text to eliminate possible disproportion and incoherence.

4. Translation of the selected parts.

Consultative translation (*Консультативний переклад*)

Consultative translation is a type of oral technical translation that includes making annotations, writing a summary, selective translation at sight and oral translation of titles performed by a translator consultant or a translator assistant who can use the client's knowledge as the main source of special information. A translator

consultant helps various specialists who have little knowledge of a foreign language or people who can speak a foreign language but have some difficulties. A translator consultant applies his/her knowledge of the language and the ability to use information sources when it is necessary to work with the source text: to perform full translation, annotated translation, write a summary, etc.

For example, the specialist may ask what the article is about, and the translator should make an oral annotation after looking through the source text or a specialist may simply ask a translator to translate the title. Then, a translator should read the text and after that translate the title. Often, after presenting an oral annotation, a specialist wants to learn more about the content of the source text to decide what kind of translation to order. In this case, a translator consultant must make an oral summary, i.e., summarize the essence of the source matter.

Sometimes a translator consultant is asked to translate only a part of the text or even a phrase, a word or symbol. In this case, a translator consultant must carefully study the context, determine whether it is clear to the specialist, and on the basis of this context he can present an appropriate equivalent.

A translator consultant often deals with translation of user's manuals, equipment specifications, technical passports and brochures of industrial exhibitions. In consultative translation as the main or even the only source of special information, the translator uses the knowledge of the customer.

Example of Gist Translation

Structure and function of an operating system

A computer is directed by a series of instructions called a computer program that tells the computer what to do. Computer programs are commonly referred to as *software*. Software can be divided into two types – *system software* and *application software*.

System software consists of programs that are related to controlling the actual operations of the computer equipment. The most important system software package for any computer is its *operating system*. An operating system is an integrated system of programs that manages the operations of the CPU, controls input/output and storage resources and activities of the computer system and provides various support services as the computer executes the application programs of users. Common desktop operating systems designed for personal computers are Windows, Mac OS and Linux.

A mobile operating system (mobile OS) is an OS built exclusively for a mobile device, such as a smartphone, tablet or other embedded mobile OS. Popular mobile operating systems are Android, Symbian, iOS, BlackBerry OS and Windows Mobile. A mobile OS is responsible for identifying and defining mobile device features and functions, including keypads, application synchronization, email, thumbwheel and text messaging. A mobile OS is similar to a standard OS but is relatively simple and light and primarily manages the wireless variations of local and broadband connections, mobile multimedia and various input methods.

Application software consists of programs designed to allow people to perform specific tasks using a computer, such as creating letters, preparing budgets, managing databases, playing games, watching videos, listening to music, scheduling appointments, editing digital photographs, designing homes, viewing Web pages, burning DVDs, and exchanging e-mail. Application software is launched via the operating system by using the Windows Start menu.

Структура та функції операційної системи

Набір інструкцій, які називають комп'ютерною програмою, вказують комп'ютеру, що робити. Комп'ютерні програми зазвичай називають програмним забезпеченням. Можна виокремити два типи програмного забезпечення – системне програмне забезпечення та прикладне програмне забезпечення.

Системне програмне забезпечення складається з програм, пов'язаних з управлінням реальними операціями комп'ютерного обладнання. Найважливішим пакетом системного програмного забезпечення будь-якого комп'ютера є його операційна система.

Мобільна операційна система (мобільна ОС) — це ОС, створена виключно для мобільного пристрою, такого як смартфон, планшет або інша вбудована мобільна ОС.

Прикладне програмне забезпечення складається з програм, призначених для виконання певних завдань за допомогою комп'ютера, таких як: написання листів, складання бюджету, управління базами даних, ігри, перегляд відео та ін.

Bibliography:

1. Карабан В.І. Переклад англійської наукової і технічної літератури. Граматичні труднощі, лексичні, термінологічні та жанрово-стилістичні проблеми. Вінниця: «Нова книга», 2018. 656 с.
2. Коваленко А. Я. Науково-технічний переклад . Тернопіль : Вид-во Карп'юка, 2001. 284 с.
3. Корунець І. В. Теорія і практика перекладу (аспектний переклад): Підручник. Вінниця: Нова Книга. 2003. 448 с.
4. Науменко Л. П., Гордєєва А. Й. Практичний курс перекладу з англійської мови на українську. Навчальний посібник. Вінниця: «Нова книга», 2011. 136 с.
5. Пройдаков Е. М. Англо-український тлумачний словник з обчислювальної техніки, Інтернету і програмування / Е. М. Пройдаков, Л. А. Теплицький. [вид. 2]. К.: СофтПрес, 2006. 824 с.
6. Скребкова-Пабат Ю. А. Технічний переклад: елементи теорії та практики. Навч. посібник. Львів: «Новий Світ-2000», 2020. 204 с.
7. Сидорук Г.І. Вступ до перекладознавства. Навчальний посібник (англійською мовою). Київ: НУБіП України. 2016. 320 с.
8. Практикум перекладу. Англійська – українська: підручник / Н. В. Бідасюк. Р. В. А. Боднар, Ю. В. Якимчук та ін. К.: Знання, 2011. 431 с.
9. Черноватий Л. М., Карабан В. І., Омелянчук О. О. Переклад англомовної технічної літератури / За ред. Л. М. Черноватого В. І. Карабана: навч. посіб. Вінниця: Нова Книга, 2006. 296 с.
10. Шилінська І. Ф. Використання лексичних трансформацій у процесі перекладу науково-технічних текстів. *Наукові записки Вінницького державного педагогічного університету імені М. Коцюбинського*. Серія : Філологія (мовознавство) : зб. наук. праць. Вінниця : ТОВ «фірма «Планер», 2015. Вип. 21. С. 400 – 403.
11. Шилінська І. Ф. Лексико-граматичні особливості перекладу науково-технічних текстів. *Науковий вісник Чернівецького університету* : зб. наук. праць. Чернівці : Видавничий дім «Родовід», 2014. Вип. 692 – 693 : Германська філологія. С. 311 – 314.
12. Kruger F. The Interface between Scientific and Technical Translation Studies and Cognitive Linguistics with Particular Emphasis on Explicitation and Implication as Indicators of Translational Text-Context Interaction. Frank and Timme GmbH, 2015. 482 p.
13. Mitchel J. B. A., Florescu-Mitchel. A. I. A practical guide to scientific and technical translation. Publishing style and terminology. World Scientific. 2022. 188 p.
14. Olohan M. Scientific and Technical Translation. Routledge, 2015. 262 p.
15. Features of academic writing. Access mode: <http://www.uefap.com/writing/feature/featfram.htm>
16. Patent translations: Filing vs. Information. Access mode: <https://www.accreditedlanguage.com/translation/patent-translations-filing-vs-information/>