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ЕЛЕКТРОТЕХНІЧНИЙ ФАКУЛЬТЕТ

Кафедра перекладу

ОСНОВИ НАУКОВО-ТЕХНІЧНОГО ПЕРЕКЛАДУКОНСПЕКТ ЛЕКЦІЙ

для студентів спеціальності 035 Філологія

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Конспект призначений для студентів спеціальності 035 Філологія, які здобувають кваліфікаційний рівень бакалавра.

Конспект стане у пригоді для самостійної роботи студентів під час підготовки долекційних занять з дисципліни «Основи науково-технічного перекладу».

Конспект містить теоретичний матеріал з основних питань, що розглядаються налекційних заняттях курсу.

Конспект укладено за матеріалами відкритих джерел.

ЗМІСТ

ВСТУП

Навчальна дисципліна «Основи науково-технічного перекладу» є важливою складовою у структурі професійної підготовки майбутніх перекладачів, покликана ознайомити студентів з основами теорії перекладу та специфікою науково-технічного перекладу зокрема. Курс спрямований на надання умінь і знань, необхідних для опанування професійних завдань (компетенцій) бакалавра.

Мета дисципліни «Основи науково-технічного перекладу» - надання умінь і знань, необхідних для опанування професійних завдань (компетенцій) бакалавра, пов'язаних з усвідомлення студентом основ теорії перекладу та специфікою науково-технічного перекладу зокрема.

Завдання курсу:

- ознайомити здобувачів з нормами, стандартами та жанрово-стилістичними особливостями науково-технічних текстів у вихідній мові та мові перекладу;
- надати знання про перекладацькі норми, варіанти перекладацьких стратегій та технічні прийоми перекладу;
- ознайомити здобувачів з основними поняттями, теоріями та концепціями в сфері науково-технічного перекладу.

Результати навчання:

- Використовувати англійську мову в усній та письмовій формі, в офіційному регістрі спілкування, для розв'язання комунікативних завдань у навчальній, професійній та науковій сферах життя.
- Знати й розуміти основні поняття, теорії та концепції в сфері науково-технічного перекладу, уміти застосовувати їх у професійній діяльності.
- Збирати, аналізувати, систематизувати й інтерпретувати факти мови й використовувати їх для розв'язання задач і проблем у сферах навчання та/або (навчальної) перекладацької діяльності.

Lecture 1. Problems and theoretical issues of translation.

1. **What is translation?**
2. **Types of translation**
3. **Translation Theory as a Theory of Transformations**
4. **Problem of Non-translation**
5. **Extralinguistic Factor**
6. **The Subject Matter**
7. **Machine Translation**

1. What is translation?

Translation problems can be divided into linguistic problems and cultural problems: the linguistic problems include grammatical differences, lexical ambiguity |ambɪˈgjuːɪti| and meaning ambiguity; the cultural problems refer to different situational features. Culture constitutes another major problem that faces translators. An inadequate |ɪnˈadɪkwət| model of translated pieces of literature may give misconception about the original.

Translation is the interpretation of the meaning of a text in one language and the production, in another language, of an equivalent text that conveys the same message. Translator must take into account a number of constraints, including context, the rules of grammar of the two languages, their writing conventions, their idioms and others factors. Consequently, as has been recognized at least since the time of the translator Martin Luther, one translates best into the language that one knows best. Traditionally translation has been human activity, though attempts have been made to computerize or otherwise automate the translation (machine translation) or to use computers as an aid to translation (computer-assisted translation). Perhaps the most common misconception about translation is that there exists a simple 'word-for-word' relation between any two languages, and that translation is therefore a straightforward and mechanical process. On the contrary, historical differences between languages often

dictate differences of expression. Hence, source and target texts may differ significantly in length. Technical texts contain a high amount of terminology, that is, words or expressions that are used (almost) within a specific field, or that describe that field in a great deal of detail. The scientific and technical translation includes the translation of scientific research papers, abstracts, conference proceedings, and other publications from one language into another. The specialized technical vocabulary used by researchers in each discipline demands that the translator of scientific texts should have technical as well as linguistic knowledge.

2. Types of translation

Though the basic characteristics of translation can be observed in all translation events, different types of translation can be singled out depending on the predominant communicative function of the source text or the form of speech involved in the translation process. Thus we can distinguish between literary and informative translation, on the one hand, and between written and oral translation, on the other hand.

Literary translation deals with literary texts, i.e. works of fiction or poetry whose main function is to make an emotional or esthetic |esˈθetɪk| impression upon the reader. Their communicative value depends, first and foremost, on their artistic quality and the translator's primary task is to reproduce this quality in translation.

Informative translation is rendering into the target language non-literary texts, the main purpose of which is to convey a certain amount of ideas, to inform the reader. However, literary text may, in fact, include some parts of purely informative character. Contrariwise, informative translation may comprise some elements aimed at achieving an esthetic effect |ɪˈfɛkt|.

A number of subdivisions can be also suggested for informative translations, though the principles of classification here are somewhat different. Here we may single out translations of scientific and technical texts, of newspaper materials, of official papers and some other types of texts such as public speeches, political and propaganda

materials, advertisements, etc., which are, so to speak, intermediate, in that there is a certain balance between the expressive and referential functions, between reasoning and emotional appeal.

Translation of scientific and technical materials has the most important role to play in our age of the revolutionary technical progress. There is hardly a translator or an interpreter today who has not dealt with technical matters. Even a 'purely' literary translator often comes across highly technical stuff in works of fiction or even in poetry. An in-depth theoretical study of the specific features of technical translation is an urgent task of translation linguistics while training of technical translators is a major practical problem.

In technical translation the main goal is to identify the situation described in the original. The predominance of the referential function is a great challenge to the translator who must have a good command of the technical terms and a sufficient understanding of the subject matter to be able to give an adequate |ˈadıkwət| description of the situation even if this is not fully achieved in the original. The technical translator is also expected to observe the stylistic requirements of scientific and technical materials to make text acceptable to the specialist. When the translator finds in a newspaper text the headline ' Minister bares his teeth on fluoridation' which just means that this minister has taken a resolute stand on the matter, he will think twice before referring to the minister's teeth in the Ukrainian translation. He would rather use a less expressive way of putting it avoid infringement upon the accepted norms of the Ukrainian newspaper style.

Apart from technical and newspaper materials it may be expedient |ıkˈspiːdıənt| to single out translation of official diplomatic papers as a separate type of informative translation. These texts make a category of their own because of the specific requirements to the quality of their translations. Such translations are often accepted as authentic |ɔːˈθɛntık| official texts on a par with the originals. They are important documents every word of which must be carefully chosen

as a matter of principle. That makes the translator very particular about every little meaningful element of the original which he scrupulously |ˈskruːpjʊləsli| reproduces in his translation. This scrupulous imitation of the original results sometimes in the translator more readily erring |ˈɜːrɪŋ| in literality than risking to leave out even an insignificant element of the original content.

The line of demarcation between written and oral translation is drawn not only because of their forms but also because of the sets of conditions in which the process takes place. The first is continuous, the second is momentary |ˈməʊm(ə)nt(ə)ri|. In written translation the original text can be read and re-read as many times as the translator may need or like. The same goes for the target text. The translator can re-read his translation, compare it to the original, make the necessary corrections or start his work all over again. He can return to the preceding part of the original text or get the information he needs from the subsequent |ˈsʌbsɪkw(ə)nt| messages. These are most favorable conditions and here we can expect the best performance and the highest level of equivalence. That is why in theoretical discussion we have usually examples from written translations where the translating process can be observed in all its aspects.

The conditions of oral translation impose a number of important restrictions on the interpreter's performance. Here he receives a fragment of the information only once and for a short period of time. His translation is also a one-time act with no possibility of any return to the original or any subsequent corrections. This type of translation involves a number of psycholinguistic problems, both of theoretical and practical nature.

3. Translation Theory as a Theory of Transformations

The process of translation is an inter-language transformation; it is the transformation of a text written in one language into the text written in another.

Linguistic theory of translation aims at constructing a definite translation process model, some scientific scheme, which more or less exactly reflects the existing issues of the given process.

Translation theory (TT) is not called upon considering every single correlation between the texts of SL and TL, but only the routine, typical correlations, repeated on a regular basis. But apart from these phenomena in comparative analysis of both texts, usually a great many correlations or relations emerge — single and irregular, peculiar for a specific case.

These “irregular” correlations represent the most embarrassing complications in the translation practice. In the ability to find individual variants, single and “not foreseen” by the theory, there is a creative character of interpretation activity. On the other hand, in the development of the TT many phenomena of the kind, that at first are considered as individual and irregular, gradually “blend” into a general picture, obtain explanation and are included into the objective consideration of the TT. In other words, the same way as in any other science, the translation process consists, specifically, of the fact, that behind the multitudes of the imaginary, fictitious exceptions and irregularities some regularity, pattern, rule, some general conformity to natural laws, which controls them and determines their character are gradually revealed. Therefore, the translation process may be regarded as an art and just mechanical arts, mere occupation and handicraft.

In TT we have to define the basic thing: on what grounds do we think that a target text is an equivalent to the original text? For example, what gives us a grounds to say, that the sentence „Мій брат живе в Полтаві.“ is a translation of the English sentence “My brother lives in Poltava”, but at the same time, the sentence “I study at the University” is not a translation of the English sentence mentioned above, — in other words, it is not equivalent to it? Still, by analogy, we dare say that the sentence „Між молотом та ковадлом “is the same as “Between the rock and hard place” or „Великому кораблю велике плавання “is the same as “A big dog is a big dog”.

Probably, not every replacement of the text in one language by the text in another one will be a translation. The same idea can be expressed in another way: a translation process or inter language transformation takes place not at will, it is not arbitrary, but according to certain rules, within strictly definite frames, and if we exceed them, we have no right to say about translation. Apart from the word "adequate |ˈadıkwət| " other synonyms as "correct, exact, right, equivalent", etc., are used in scientific literature.

Translation is the process of transformation of any spoken or written text in one language into the text in another preserving invariable, unchanged meaning of the text. Still, we may talk about the invariable or unchanged meaning or content, its safety and maintenance only in a relative, not absolute sense. During language transformation (as well as during any other transformation) inevitable losses take place, i.e. the full translation of meanings, expressed in original text is impossible. Hence, sometimes a translated text can not be totally and absolutely |ˈabsəluːtli| equivalent to the original one. The task of a translator is to try and do the best to make this equivalence more precise and allow minimum losses.

We should keep in mind that in the translation the most essential thing is the equivalence of the meanings, and not of isolated words or even isolated sentences, the equivalence of the entire text translated.

To support the idea let us take two examples. In the story of the well-known English writer Somerset M. "A Casual Affair" there is such a sentence:

> *He'**d** always **been** so spruce and smart; he **was** shabby and unwashed and wild-eyed.*

In Ukrainian translation this passage sounds like that:

Раніше *він був таким чепуруном, таким ошатним. А* ***тепер*** *блукав по вулицях Сінгапура брудний, жалюгідний, з диким поглядом. (пер. М. Литвинової)*

At the first sight the Ukrainian text seems not quite equivalent to the English one: here we encounter such words as *„раніш*, *тепер*, *блукав по вулицях Сінгапуру“*, which have no direct equivalents in the original text.

But in fact the **semantic equivalence** is precisely preserved and well-kept here, though the vocabulary equivalence, the word equivalence is absent.

The issue is that the Ukrainian words *„раніш“* and *„а тепер“* convey here the meanings, which in the English text are expressed not by mere words, but through grammatical forms: opposition of verb forms *to be — had been* and *was* expressing antecedence |ˌæntɪˈsiːdns| (*предшествование*) of the first event or action to the second one, which in Ukrainian are expressed by lexical means, with the help of the adverbs of time. So, some grammatical forms in one language are expressed through lexical means in another.

In the story of the American writer Harper Lee “To Kill a Mockingbird” there is such a sentence:

“Mr. Raymond sat ***up*** *against the* ***tree-trunk****”.*

In Ukrainian it sounds as follows:

„Містер Реймонд ***сів*** *і притулився до* ***дуба****“.*

In the translation there is a word *„притулився“***,** which is absent in the original text, the English adverb *“up“* in the phrasal verb *sat up* indicates the fact, that the subject of the verb, assumed a sitting position after lying (compare: *sat down*) when in the Ukrainian sentence this information is absent. The English word *“tree-trunk“* does not

mean *"an oak"* but *„стовбур дерева"*. From the previous sentence it is clear, that he had been in a lying position under the oak.

Semantic equivalence may not exist between separate elements of these texts, but between the texts as a whole. Besides, in the text itself multiple regroupings, transpositions and redistribution of separate meaningful elements not only admissible, but are frequently inevitable |ɪnˈɛvɪtəb(ə)l|.

4. Problem of Non-translation

The possibility to impart meanings by means of another language for long was questioned and impeached by some theorists in the 60s. There had been a prejudice, that there were languages which are "highly developed and civilized" and languages "undeveloped, primitive, backward", which due to their primitiveness are incapable of expressing all the meanings. This theory is absolutely wrong. Even the exotic languages of the aborigines |ˌæbəˈrɪdʒəniz| of Africa and Australia are typically characterized by sufficiently developed grammatical system and the rich vocabulary. Under this theory the English language is also primitive, as some grammatical categories are absent here.

Vocabulary fixes the data of human experience, reality, which is reflected in consciousness. Indisputably, in the languages of nations, which are found on different stages of social and cultural development, such layers or vocabulary notions, as political, technical, scientific terms or abstract philosophical notions are absent or extraordinarily poor represented, because the corresponding objects and notions are absent at all in their practical experience. Every vocabulary is an open system, which is capable to continuously replenish and enrich itself. Grammar is a comparatively closed system.

Long ago in the Ukrainian the words *telephone, TV, cosmonaut, computer,* etc., were absent, however nobody will dare assure, that the language of T. G. Shevchenko, was less developed and civilized, than the contemporary Ukrainian. However bad we treat Karl Marx now, but his expression "Reality determines consciousness" is still valid and holds good. Existence, our vital encirclement, influences our consciousness, and, consequently, our vocabulary. Reality, in the first turn, influences our everyday vocabulary — the most developed and homogeneous, similar layer of vocabulary in all nations. Nations of the North have more than forty words to designate states and shadows of snow, for it is their permanent environment, and nations of the South do not use this notion at all, as it is absent in their everyday vocabulary.

Two language systems resemble each other and differ from each other phonographically, in vocabulary and in grammatical constructions. The translation theory is based on the theory of language units, but not all the translational phenomena can be explained by it. The comparative grammar of any two languages will not help us to translate because it limits itself by studying similarities and distinctions of temporal verbal forms, remaining within the framework of morphological level in Ukrainian and English. But the most important thing is that in one of the languages compared, the meaning can be expressed not morphologically and even not grammatically, but through lexical-semantic means. The translation theory is quite a different thing. Here it is impossible to limit oneself within establishing correlation only in the system of morphological forms. It is necessary to exceed, overstep them and to understand, that certain meanings, expressed in one of the languages by grammatical means, in another can be expressed through lexical ones, as in the example mentioned above, where meanings in the source text are expressed by temporal verb forms, and in the target text — by lexical means — by the words *„раніш" and „менер"*.

In other words, the theory of translation, in general, is indifferent to the status of language units, which are compared, it is indifferent to whether they belong to

grammatical, lexical or other means; their semantic identity is of the utmost importance for it.

5. Extralinguistic Factor

Sometimes we have to resort to so called extra-linguistic factor (auxiliary information or background knowledge) to make a correct translation. In other words, in order to translate, we should know not only SL and TL and the translation rules, but also the subject, situation, circumstances, in which the given text functions:

> *...that Rob had anything to do with his feeling as lonely as* ***Robinson Crusoe*** *(Dombey & Son).*
>
> *"Rome wasn't built in and day, ma'am... In and similar manner, ma'am" said Bounderby, "And can wait, you know. If* ***Romulus*** *and* ***Remus*** *could wait, Josiah Bounderby can wait" (Hard Times).*

"And do not wonder that you... are incredulous of the existence of such and man. But he who sold his birthright for and mess of pottage existed, and ***Judas Iscariot*** *existed and* ***Castlereagh*** *existed, and this man exists" (Hard Times). (*Каслри Министр иностранных дел Великобритании 1812-1822*)*

Neither of these sentences can be fully understood, if "a recipient", reader, has no specific information about subjects, persons and phenomena mentioned here. To comprehend the first sentence, one should know why the name Robinson Crusoe is identified with the idea of solitude in D. Defoe's well-known book. To understand the second example one should know, who were Romulus and Remus, one should know the history and ancient mythology of Rome. In the third sentence we should know the biblical myths about Isahav, who sold his birth right for the mess of pottage, as well as about Judas Iscariot, who betrayed Jesus Christ for thirty silver coins; to understand

this sentence, one should also know, who Castlereagh was and what mean things and actions his name is associated with, as it is associated with the ideas of venality and betrayal, so we need to know curtain facts of the English history.

"Open the door", replied a man outside; "it's the officer from ***Bow Street****, as was sent to, today!"*

A translator should take into account the fact that a reader is unaware of specific realities of another country he lacks knowledge to understand this passage. He does not know, that in Bow Street there is a central police board of London. The volume of knowledge of native speakers and readers of the translated material is different and it is a normal situation. The passage sounds strange and is not understandable. The task of a translator to remove this misunderstanding in some way:

„Відчиніть двері! — відповів чоловік за дверима. — Це ***представник головного поліцейського управління Лондона****, за котрим ви сьогодні посилали!"*

My nose's running. Have you got ***Kleenex*** *or something?*

Without any difficulty an American will understand that *Kleenex* is a well-known firm, producing napkins, tissue paper, disposable diapers, absorbent paper, table paper cloths, articles of hygiene, etc. The best variant of the translation is as follows:

У мене страшний нежить, не знайдеться в тебе чогось на зразок ***носовичка****?*

And here it is an opposite translation:

Він пішов в армію ***24 лютого 1922 року****.*

The best translated option is as follows:

On the day when russia attacked Ukraine *he joined the army.*

The date unforgettable for every citizen of Ukraine, might mean nothing for the English speaking reader and needs deciphering in translation, because here it is important to emphasize, that the person left for the war on the very first day it started.

> *The British people are still profoundly divided on the issue of* ***joining Europe****.*

For the Ukrainian reader it is unclear in what meaning the word *Europe* is used here. Citizens of the UK are aware of the political atmosphere in the country in 1973, the meaning of expression *joining Europe* is clear without any explanations:

> *Серед англійців ще досі існує глибоке непорозуміння щодо* ***вступу Англії в європейський спільний ринок****.*

In the translation we should resort to some kind of explanation of the word combination *"to join Europe"* by means of the so called broadening of the meaning adding the words which will make this expression clearer.

6. The Subject Matter

Translator-practitioner must not only know languages, but the things discussed, i.e. the subject matter. Translator of fiction should know author's outlook, his aesthetic view and tastes, literary trends, creative methods, epochs, circumstances, social life, material, spiritual culture, etc.

When translating social and political materials, it is necessary to know politics, political atmosphere and other factors, characteristic to the country, where the material to be translated is created, the epoch, it was written.

Translator of scientific and technical texts should have certain knowledge about this subject: biology, physics, astronomy and engineering.

Once again we would love to underline, that sometimes neither vocabulary, nor grammatical constructions will help us to understand the text, but our background knowledge alone. Only one example: in a scientific text the translator came across the following expression:

> *... investigation of microdocument storage system using fractional wavelength optical reading methods.*

This expression is a bright example of the so-called syntactical or structural ambiguity. The adverbial participle *using* can either be attributed here to the word *investigation*, or the word *system*. Only in case we know well the subject we'll translate correctly, because none of the formal grammatical indicators are helpful here. The expert can figure out, which of two possible interpretations is admissible. The translation given below removes the necessity to choose between two options, but the uncertainty remains and may emerge again in some other texts:

> *Дослідження системи зберігання мікродокументів з використанням оптичних методів зчитування фракційної довжини хвилі.*

The following model is also ambiguous:

> *...the man in armchair reading a newspaper...*

We know, that *reading* refers to *the man***,** and not to *armchair* and not due to some grammatical indicators, but because we know that only a human being can read.

7. Machine Translation

Automatic (machine, computer) translation is complicated through the ignorance of extra-linguistic factors by computer programs. This is a very serious impediment on the way to a high quality translation. Computer translates *Clinton's rule* as *„правило Клінтона"* in analogy with *„правило де Соссюра"*, and not *правління*, though *"rule"* means both *правило* and *правління*. Computer does not know, that Clinton is a

statesman of the U.S., its president. If it had known, then the translation could have been correct.

Similarly: *"hands of child"* and *"hands of clock"* in both cases will be translated as *„руки"*, when in the second case it should be translated as *„стрілки"*. Homonymy is currently being unsettled issue for the automatic translators.

Meanings, which are lexical in one language (expressed in it through the vocabulary units), in another language can be grammatical (expressed "by non-vocabulary means") and vice versa. (Even within the framework of one and the same language identical meanings in some cases can be expressed both by grammatical and lexical means):

Having entered the room she found out a stranger.

and:

After entering the room she found out a stranger.

Absence of these or those grammatical (as well as lexical) means in one of languages does not create any insuperable hindrances in the process of translation.

The role of the interpreter is very significant, and much is required of him in every way. He should be a highly educated person, have extensive and versatile knowledge. The interpreter of scientific and technical literature, naturally, should know well a given specialty; the interpreter, engaged in translation of newspaper and publicistic materials, should keep abreast of modern international events, to know political system, economy, geography of different countries, etc. Every interpreter should study literature, history, culture of other nations and especially the country, which language he translates from. He should know life, customs of this nation, i.e. he should be familiar with the so-called realities. Realities are understood as features of life, domestic economy, state system of every country, its customs, traditions, believes even prejudices — everything which creates its original, national image. This ignorance results in translation mistakes,

discolours it, deprives it of national colouring. It might also result in gross blunders creating false and sometimes repulsive impression of the country and its people.

It's clear that Leo Winner — the American translator of the novel by L. Tolstoy "War and Peace", absolutely unfamiliar with Russian customs and traditions of the epoch, described by L. Tolstoy, makes a gross blunder when translating the following passage from the novel:

> *Графиня, повертаючись у вітальню, подивилась на нігті та й* ***поплювала*** *з веселим обличчям. (Після того, як лікар сказав, що Наташа почувається краще і починає одужувати.)*
>
> *The countess looked at her nails and* ***spat out****, and returned to the drawing-room with a happy face. (knock on wood)*

L. Tolstoy implies a very peculiar "sign" (as if saving from putting the evil eye — *„наврочити"*), the interpreter transfers the word *„поплювала"* as *spat out* — *„сплюнула"*. This mistake creates a wrong picture of culture, life and customs of Russian aristocracy of that epoch.

An interpreter should have general philological knowledge, as many problems of translation can be resolved only on a wide philological basis. Such training can protect the interpreter from mistakes. Interpreter should deeply know both languages. This statement is not a banality. In translation practice, unfortunately, the word-for-word or literal translation frequently occurs, and it still remains very undesirable phenomenon. In the deep knowledge of language the knowledge of its every aspect is implied: phonetics, grammar, lexicology, stylistics. Without them practically none of grammatical, lexical or stylistic problems can be resolved.

Lecture 2. Technical text.

1. **Technical texts: general characteristics.**
2. **The term as the main element of the technical text.**
3. **Types of terms: methods of term-formation.**
   - **3.1. Creating new forms**
     - **3.1.1. Derivation.**
     - **3.1.2. Compounding.**
     - **3.1.3. Blending.**
     - **3.1.4. Abbreviation: short forms, abbreviations, clipped forms, initialisms, acronyms.**
   - **3.2. Using existing forms.**
     - **3.2.1. Conversion.**
     - **3.2.2. Terminologization.**
     - **3.2.3. Transdisciplinary borrowing.**
     - **3.2.4. Semantic transfer within a special language.**
   - **3.3. Interlingua borrowing.**
4. **Translation of terms.**
5. **Stylistic and grammatical special properties of Ukrainian and English technical texts.**

1. Technical texts: general characteristics.

Technical texts are texts intended to educate/inform the reader in a particular technical field or skill through in-depth study and practice. Due to their attention to detail, **technical texts** are usually very well-organized, frequently featuring numerous subdivisions to aid in flow and retention of information. Technical translation involves translation of texts dealing with electronics, medicine, law, economics, or sport. In a narrower sense, technical translation deals with texts from the world of engineering, including chemistry, computer science, automotive engineering, geology, biology, etc.

The number of technical fields is infinitely large, and terminology is expanding and changing daily. Moreover, even within the same field, competing companies often use different terms for the same object to differentiate their products from those of their competitors.

Ideally, a technical text should therefore be translated by specialist in the specific area in question, who is familiar with the terminology of the company for which the translation is being done. For example, it is highly desirable that a text dealing with IBM computer parts be translated by an IBM computer specialist, because the same part is called a different name by Apple, Dell, or NEC. Obviously, this is not always possible in practice. The translator should be familiar with the technical concepts involved in the text, so that the translation conveys the right idea to the engineer or technician reading it. The client can greatly contribute to the quality of the translation by providing the translator with any related documents written in the target language, as well as with the drawings and source-language documents dealing with the same topic. Then, especially if the translation is for publication, the terminology must be refined via a dialogue between the translator and the client. Dictionaries do not always provide the right answers to technical terminology problems. A technical translator will know the proper term to use.

Translation/conversion of units of measurement is a special challenge to the translator. It is not only finding the correct conversion factor from pound per square inch to kilopascal, but also choosing the right fractional units to avoid expressing the weight of a microchip in tons or its dimensions in miles. Competent technical translators know that converting the temperature from Fahrenheit to Celsius units or vice-versa requires a different formula from converting a temperature difference between the same units. Even if the terminology and all information contained in the document is correct, technical writing has a style that is difficult, if not impossible, for a non-technical person to imitate. A high-quality technical translation combines correct

terminology and a style appropriate for the type of the document and the intended audience.

Technical translation is known to be the most difficult kind of written translation because a translator has to cope with a really hard task: to translate the technical text skillfully and correctly, and, in addition, not to lose the meaning or make sad mistakes which may lead not only to damage of the equipment but endanger health or even life of people. For that reason, there are some requirements for scientific translators. In scientific works, subject matter takes priority over the style of the linguistic medium which aims at expressing facts, experiments, hypothesis, etc. The reader of such scientific works does not read it for pleasure which the reader of literary work usually seeks, but he is after the information it contains.

Scientific words differ from ordinary and literary words since they do not accumulate emotional associations and implications. This explains why the translation of a scientific work is supposed to be more direct, freer from alternatives, and much less artistic than other kinds of prose. The language of scientific and technical texts is characterized by impersonal style, simpler syntax, use of acronyms, and clarity.

2. The term as the main element of the technical text.

The main element of the scientific and technical text is the term. In Terminology, the “term” or “terminological unit” is the meaning unit made up of one single word (simple term) or several words (complex term) and represents a concept in an univocal way in a specific semantic field. From this definition, we can understand that a term is a specialized word in relation to its meaning and the field in which it is used. It is considered in that way when used in a certain context in which it takes the function of a “term”.

Terms can be more or less complex lexical units that are generated in the result of the following processes:

- The extension of the meaning of a word in the standard language (for instance, “mouse” in computing terminology is a device that allows the user to interact with the computer).
- Generation of a phrase that functions as a whole with one specialized meaning (superconducting magnet).
- Symbolic expressions, as chemical element symbols (Na) or chemical and mathematical formulas (H2SO4).
- Abbreviations (PVC) and acronyms (NATO, from North Atlantic Treaty Organization).
- Nomination of posts (Prime Minister), organizations or administrations (United Nations, Prime Minister).

In order to establish the limit between term and word, it is important to know the characteristics of terms in a specialized language. According to Gutiérrez Rodilla (1998: 88-94) the characteristics of terms are precision, emotional neutrality and stability over time. For instance, *“aplasia”* is a medical term meaning incomplete or faulty development of an organ; it is monosemic which implies precision; it is neutral emotionally; and finally, it is stable over time since it has been used without any variation in use, form and meaning for a long period of time in scientific documents.

There are variations in the use of terms depending on the specialisation grade of the discourse. The terminological density, which means, the amount of terms in a text is conditioned by the kind of discourse:

- Specialised discourse: aimed at experts (there are different specialization levels).
- Didactic discourse: aimed at education.
- Informative discourse: aimed at people without a specialised knowledge of the subject.

The amount of terms used will be very different in these discourses. The level of competence of the text users on the subject presented increases in accordance with the amount of terminologies used (Condamines, 1993). In this way, the specialised communication requires the terminology to be adapted to each type of text. This type is determined on the quantity of information shared between producer and user of the text and the purpose of the text (Marinkovich, 2006). We will not find the same number of terms in the Penal Code as in a generalist newspaper's news item on a trial.

3. Types of terms.

3.1. Creating new forms.

3.1.1. Derivation.

The process of derivation is the formation of a new term by adding one or more *affixes* to a *root* or to a *word,*

e.g. *phosphor + ous = phosphorous,*

co- + education- + al = co-educational,

de- + toxi(n) + fi + -cation = detoxification

3.1.2. Compounding.

Compound terms are divided into complex terms and blends. In English, the roots or words making up a *complex term* or *phrase* are joined by a hyphen, or by *fusing*, or they are cited without any indication of joining between them:

e.g. complex terms

(hyphen): composer-conductor, high-definition television

(fusion): downsizing, outflow

(no join): member country, information highway

3.1.3. Blending.

paraplegic + Olympics = Paralympics

biological + electronic = bionic

education + entertainment = edutainment

cybernetics + space = cyberspace

3.1.4. Abbreviation: short forms, abbreviations, clipped forms, initialisms, acronyms.

On the one hand, shortening serves the purpose of creating *more concise forms*, especially for frequently used terms, while on the other hand creating names that are easy to remember for lengthy terms which are not clearly recognizable as terminological units. The following types of abbreviated forms can be distinguished:

Abbreviated Forms	**Short form** ***Court - Court of Justice***
	Abbreviation ***etc. - et cetera***
	Clipped form ***Flu*** *- in**flu**enza*
	Initialism ***UN - United Nations***
	Acronym *Laser - **l**ight **a**mplification by **s**timulated **e**mission of **r**adiation*

The short form is an abbreviated form of a complex term or name of considerable length in words. It uses fewer words in order to designate the same concept,

e.g.

full form: *Court of Justice of the European Communities*

short form: *Court*

Abbreviations are created by omitting words or parts of the words of which a term consists,

e.g.

full form: ***p**age, **et c**etera* abbreviation: *p., etc.*

A clipped term is formed by truncating the front, middle or back portion of a single-word term,

e.g.

full form: *para**chute,** in**flu**enza, **prefab**ricated house*

clipped form: *chute, flu, prefab*

Initialisms are formed from the first letters of each of the elements of a complex term or name. They are always pronounced letter by letter,

e.g.

full form: ***U**nited **N**ations, **p**ersonal **c**omputer* initialism: *U.N., PC*

Acronyms are formed by combining the initial letters or syllables of all or several of the elements of a complex term or name. Acronyms are always pronounced syllabically just like regular words,

e.g.

full form: ***l**ight **a**mplification by **s**timulated **e**mission of **r**adiation*

acronym: *laser*

3.3. Using existing forms.

3.3.1. Conversion.

Conversion is the morpho-syntactically differentiated usage of a single form, e.g. when an adjective is used as a noun or a noun as a verb (which is quite frequent in English),

e.g.

output (NOUN) -- output(VERB),

Google (Proper Name) -- google (VERB)

3.3.2. Terminologization.

Terminologization is a general procedure through which a word or phrase from general language is transformed into a term designating a concept in a special language, e.g.

circuit

⟨*general language*⟩*: a line enclosing a surface*

⟨*electrotechnology*⟩*: an arrangement of devices or media through which electric current can flow*

3.3.3. Transdisciplinary borrowing.

Transdisciplinary borrowing, also known as *internal borrowing*, refers to situations where a designation from one specific subject field is used in another one in order to represent a different concept. The characteristics making up the *intension* of both concepts in both subject fields are often comparable and analogous, e.g.

reaction

chemistry: Interaction among two or more chemical elements or compounds, resulting in the creation of another chemical compound

physics: Force of equal magnitude and opposite direction, developed due to action of any given force

physiology: Response of the body to a functional disorder or to an external stimulus

3.3.4. Semantic transfer within a special language.

Semantic transfer within a special language is the process by which an existing term in a special language is used in order to designate a different concept, by an analogous extension.

• **Simile**, e.g. designation of a concept by analogy with a different more well-known or familiar concept, e.g. *L-shaped room*, a *rock-like substance*.

In English, simile is usually expressed by means of suffixes such as *-like*, *-style*, *-type* etc., ⟨*electron.*⟩*: bus-type interface, П network*

⟨*telecom.*⟩*: noise-like error, Ethernet-like interface*

• **Synecdoche**: This is the most productive technique of utilizing existing forms, which is referred to as systematic polysemy in the contemporary linguistic theory of semantics: the whole is used for the part , and vice versa, the material for the object and vice versa, the building for the people who are in it, etc. Synecdoche can be regarded

as a horizontal mechanism, influencing *terminologization* and *interdisciplinary borrowing*,

e.g.

screen :

concrete: the part of a computer on which information is displayed

abstract: the information displayed on this computer part

3. 4. Interlingual borrowing

Direct borrowing: This refers to the full adoption of terms from contemporary languages during the process of secondary term formation. Some loans of this type of borrowing prove successful and are fully incorporated into a foreign language. In other cases, the initial loan is replaced at a later stage by a form more compliant with the linguistic structures of the target language.

e.g.

*reservoir (*from French*), diameter, spiral (from Ancient Greek)*

Loan translation: The morphological elements of a term or whole words from the source language are translated literally ("word for word") in order to form a new term in the target language,

e.g. *worm shaft – червячный вал*.

4. Translation of terms.

In the process of translation, we can face with such peculiarities of the English terms:

a) Some international terms can be conveyed through transcoding:

antenna – антена

feeder – фідер

blooming – блюмінг

b) Some terms have their direct equivalents in Ukrainian language:

hydrogen – водень

voltage – напруга

c) Sometimes we use loan translation:

single-needle instrument – однострілковий інструмент

superpower system – суперпотужна система

d) Very often there are no direct equivalents for the terms. In this case we use descriptive translation:

video-gain – регулювання яскравості позначок від відбитих сигналів

combustion furnace – піч для органічного аналізу

wall beam – балкаб покладена вздовж поперечної стіни

Translating terms, it is better to avoid the words of foreign origin:

промисловість instead of індустрія

сільське господарство instead of агрокультура

повний опір instead of імпеданс

For correct translation, translator must know not only English, but also correspondent Ukrainian terminology. It is difficult to choose one Ukrainian equivalent in such cases, as, for example, with the word “to switch”:

switch – вимикач; перемикач; комутатор

In this case, in order to choose the best variant, the translator should have background knowledge. Let’s translate the sentence into Ukrainian:

Most of the modern radio-transmitters can communicate both telegraph and telephone signals.

The translator, who doesn’t know special terminology, will translate:

Більшість сучасних радіопередачів може посилати як телеграфні, так і телефоні сигнали.

But correct technical translation will be the following:

Більшість сучасних радіопередачів може працювати як в телеграфному, так і у телефоному режимі.

5. Stylistic and grammatical special properties of Ukrainian and English technical texts.

To illustration all the peculiarities of technical translation, it is necessary to focus on the stylistic and grammatical special features of Ukrainian and English technical texts.

a) In English personal forms of verbs are used more often than impersonal, whereas in Ukrainian we have more impersonal and indefinite-impersonal forms of the verb. For example:

You might ask why engineers have to supply us with a.c. rather than d.c. for our household needs. – Можна спитати, чому для домашніх господарств зазвичай використовується змінний, а не постійний струм.

We know the primary coil in the ordinary transformer to have more turns than the secondary one. – Відомо, що первина обмотка звичайного трансформатора має більше витків, ніж вторинна.

b) In English scientific texts Future Tense is often used instead of Present:

The zinc in the dry cell accumulates a great many excess electrons, which will move to the carbon electrode. – Цинк в сухому елементі акумулює велику кількість зайвіх електронів, що рухаються до вугільного електрода.

Fig. 10 gives a drawing of a bulb; the filament will be seen in the centre. – На мал. 10 представлено креслення електричної лампи; нитку накалювання можна побачити в центрі.

c) In English texts passive constructions are frequently used, whereas in Ukrainian active constructions are more common:

This question was discussed at the conference.

This sentence can be translated in such ways:

Це питання було обговорено на конференції.

Це питання обговорювали на конференції.

Це питання обговорювалось на конференції.

Конференція обговорила це питання.

d) The author of English scientific papers use abbreviation, which have no equivalents in Ukrainian:

d.c. (direct current) – постійний струм

a.c. (alternating current) – змінний струм

s.a. (sectional area) – площа поперечного перерізу

b.p. (boiling point) – точка кипіння

e) Some word-combinations in English are characterized by the imagery, which does not correspond the Ukrainian language. During the translation, such images should be replaced by their adequate analogues in the target language:

We have learned to manufacture dozens of construction materials to substitute iron.

Instead of the word *"dozen" дюжина* in Ukrainian we use the word *"десяток"*.

Ми навчилися виготовляти десятки будівельних матеріалів, що можуть замінити залізо.

Lecture 3. Understanding Technical Documentation

3.1 Specific features of technical documentation

3.1.1 Language

Keeping it simple is the key to technical texts and making sure that the language they contain is both clear and to the point is one of the core values of technical communication. This is not just an altruistic and caring principle aimed at making life easier for readers; it actually makes sense for a variety of reasons. If you bear in mind that in reading technical texts, readers are usually trying to do something else and need the text do help them do it, then we do not want to distract them from this task by making them decipher overly complex language or fantastically creative and ornate, but ultimately unintelligible, language.

So, by keeping things simple, we reduce the amount of work readers have to do and we reduce the risk that something will be misunderstood or otherwise impede the smooth flow of information. This is particularly important where readers are in a

hurry, are stressed or where they are not native speakers of the language. Some of the key ways in which the clarity and simplicity of technical texts is improved is to use simple declarative information instead of complex sentences and to provide clear and simple instructions which are in chronological order or which present a logical cause and effect structure.

Example 1: Simple declarative sentences

• *SAUBER HK 10F is not classified as a dangerous substance in accordance with the relevant laws governing chemicals.*

• *The detector automatically checks the condition of the batteries.*

• *The HA-100B is a wireless glass-break detector that provides easy and reliable protection against robbery.*

Example 2: Clear and Logical Instructions

• *From the main menu, select "Installation" and then "New Installation".*

• *If the cycling device triggers an alarm, mount the unit in a different location.*

Scientific texts also make use of simple language to a certain extent, but owing to the different aims and intentions, they need to use a broader range of linguistic devices to do this. So while a technical text seeks to get information across as clearly and effectively as possible, scientific texts are not always concerned solely with conveying information as much as they are with creating some sort of effect or eliciting some response from the reader. As a result it is not unusual to see passages of text composed of quite long, complex sentences involving the type of language more commonly associated with more conventionally creative types of text. This can be seen in the following example taken from a scientific textbook:

Example 3: Complex sentence structure in a scientific text

• *In cystic fibrosis, the combination of thickened secretions and repeated viral, 5. aureus and H. influenzae infections in early life lead to severe bronchiectasis; chronic infection with Pseudomonas aeruginosa, and sometimes Burkholderia cepacia, results in fatal destruction of the lung in spite of frequent courses of potent i.v. and nebulized antibiotics. (Murray et al. 2005:36)*

The following example - taken from a popular science book entitled Oxygen: The Molecule that Made the World - displays complex language and a concerted effort by the author to help readers understand the implications and associations of the information being conveyed. The result is, admittedly, a rather challenging sentence.

Example 4: Complex and figurative language

• *We emerge blinking, then, from the great Varanger ice age - the last snowball earth - which ended some 590 million years ago, into a world in which the surface oceans and the air are well oxygenated - well enough for us to breathe - but the deep oceans are still stagnant, like the Black Sea today, saturated in hydrogen sulphide. (Lane 2002:69)*

In addition to longer sentences, in certain types of scientific texts, particularly but not exclusively popular science where the function is to entertain as well as educate, authors may resort to prosaic imagery in order to make certain concepts easier to comprehend, to establish a proximity with the reader, and to make the subject more interesting. As a result, we see quite vivid language such as the following, which is taken from a scientific monograph on radio-telescopy.

Example 5: Vivid imagery in scientific language

• *In the splendour of a moonless night, far from the pollution of the sky by artificial lighting, the first revelation is that of the stars. (Schatzman & Praderie 1993:1)*

Popular science publications provide an even richer supply of vivid, literary

language and imagery:

Example 6: Vivid imagery, literary style and varied rhetorical devices

• *An awful fate befell many of the young women hired to paint radium onto the dials of watches, so that they would glow in the dark. [...] Within a year their teeth began to fall out and their jaws disintegrated. (Lane 2002:109-110)*

• *We are each so atomically numerous and so vigorously recycled at death that a significant number of our atoms - up to a billion for each of us, it has been suggested - probably once belonged to Shakespeare. A billion more each came from Buddha and Genghis Khan and Beethoven, and any other historical figure you care to name. (Bryson 2003:176)*

Metaphors

Often thought to be the sole preserve of literary language, metaphors are an incredibly useful tool for writers of both scientific and, to a slightly lesser extent, technical texts. Metaphors are particularly valuable in scientific texts where they help authors to put a concrete name to an abstract concept. Metaphors such as Black Hole , Greenhouse Effect and Double Helix are some of the better known scientific metaphors and it is quite clear that they are beneficial in providing not just a neat and tidy term for the various concepts, but also a way of explaining what they mean in a way to which readers can easily relate.

Metaphors (and similes) are also used to explain complex processes and systems by taking advantage of readers' existing knowledge and understanding of the world around them. Looking at another example taken from Nick Lane's book on oxygen, we can see how the biological necessity for genetic variation and mutation is explained through the metaphor of a bank robber.

Example 7: Metaphors in scientific texts

• *[...] a genetically static population is a sitting target for pathogens and predators. In the same way it is much easier to rob a bank if you have memorized the unchanging patrols of security guards. (Lane 2002:235)*

But it is not just scientific writers who can craft a clever metaphor to convey their ideas. Technical texts are also littered with metaphorical language and it too serves an important purpose. Whether we are using terms like worm screws in mechanical engineering texts or referring to concepts such as communities or groups in technical white papers for website software, it is difficult to avoid language which is metaphorical on some level. From the examples given above, worm screws are so named because the shape of the screw is reminiscent of a worm. In the field of computer science, the notion of communities and groups such as those seen on social networking sites are user-friendly ways of expressing what is essentially a relationship between different types of data in a database. Other familiar technical metaphors relate to computer viruses such as Trojan Horses, worms and zombie computers while handshake protocols refer to the various steps in the process of connecting a computer to a server.

3.1.2 Facts and specifications

Setting aside issues of language for a moment, the whole point of technical documentation is to communicate something. There is, however, a limit to what can be expressed in smooth, clear prose. Sometimes the only way to convey information effectively is to present bare facts and figures, whether it is incorporated into a sentence, presented as a bullet point in a list or in a table without any textual "padding".

Example 13: Extract from list of technical specifications

The recommended dose is between 50 and 80 mg per litre of water.

Pack Height: max. 710 mm

Pack Width: 1010 mm for construction widths of 200-300 mm

Pack Length: max. 14.0 m

Pack Weight: 4.01

In a scientific text, we also find hard facts, although the structural and linguistic style of such texts means they are likely to be presented in sentences rather than as bulleted lists.

Example 14: Extract from a research paper on cardiac surgery

The estimated average probability of experiencing a major cardiac adverse event after treatment for in-stent restenosis with a follow-up period of 9±4 months was 30.0% (25.0-34.9%, 95% confidence interval) with strong evidence for heterogeneity between study specific results (P = 0.0001). (Radkea et al. 2003:266)

Example 15: Extract from an article on material testing

The density of these clusters varied between 0.29-0.46 mm^2 (an average of 0.34 mm^2) on the basis of measurements of over 800 mm^2 of sample area in both microstructures. (Chandran 2005:304)

Example 16: Extract from a scientific report on aircraft safety

In 1997, 46% of U.S. commercial aircraft were over 17 years of age and 28% were over 20 years. In 2001, 31% of the U.S. commercial fleet were over 15 years of age, and those aircraft accounted for 66% of the total cost of maintenance per block hour. (MacLean et al. 2005:1)

3.1.3 References

Often in a text, whether technical or scientific, an author will refer the reader to information which is contained elsewhere in the document or in other documents. This can take the form of references to laws, directives and standards in the case of technical texts or to books and journal papers in a scientific text. In some cases,

particularly in software-related documents, references may also be made to diagrams, interface items, menus or accompanying documents. This is often done so as not to impede the flow of information or to overload the reader with too much information at once. The decision to split a document into multiple smaller documents can be a way of keeping the size of individual documents to a minimum, and sometimes it is simply due to the medium chosen to disseminate the document, for example, online help, websites, leaflets or brochures.

Example 17: References to standards and laws

This product has been tested with regard to:

EMC Emissions: EN 50081-1 1992

RFI: EN 55022 1998

EMC Immunity: EN 50082-1 1997

Telephony: TBR211998

Safety: EN 60950+ Aml(93), Am2(93)

The device complies with the provisions of European Directive 1999/5/EC

Scientific texts use more traditional academic referencing methods in order to draw the reader's attention to additional information. This also serves to reinforce the arguments being made and to convince the reader of the validity of the information and the trustworthiness of the author. It could be argued that it is similar to the referencing of laws and standards which takes place in technical documents where, in addition to identifying additional information, the references may show that, by conforming to a particular standard, a product is reliable and safe. Footnotes are also used in scientific texts either as a way of providing readers with additional, incidental information or as a way to provide references to other works.

3.1.4 Formulae, equations and scientific notation

Second only to specialized terminology in its ability to make scientific and technical texts look incredibly intimidating and complex to an unsuspecting translator is the use of formulae, equations and scientific notation. These are fundamental components of how scientists and technicians communicate and they perform a number of essential functions in texts, the most important of which is that they allow abstract concepts and ideas to be expressed clearly and concisely.

One of the most basic methods for expressing complex scientific and technical information is scientific notation, which is also known as standard form or as exponential notation. This makes it easier to present figures which are too large or small to be conveniently written in standard decimal notation.

Unless we are dealing with purely mathematical texts, numbers, whether in ordinary decimal or scientific notation, will rarely appear in isolation. In the majority of cases, numbers are used to quantify something and unless we know what it is we are quantifying, the numbers are quite useless. For this reason, texts will feature a variety of units of measure. Units of measure are definite amounts of some physical quantity, such as length or weight. They are agreed upon, adopted and used by convention, and are represented by a unique symbol. In most cases, units of measure are governed by the International System of Units, known as SI for short. The SI sets out seven base units of measure:

length - metre (Symbol: m)

mass - kilogram (Symbol: kg)

time - Second (Symbol: s)

electric current - Ampere (Symbol: A)

thermodynamic temperature - Kelvin (Symbol: K)

amount of substance - Mole (Symbol: mol)

luminous intensity - Candela (Symbol: cd)

Each of these units can be modified by means of prefixes such as *micro-*,

milli-, nano-, pico- etc. Interestingly, the SI prefixes can also be used independently of SI units of measure, for example with Imperial measures, with the result that you can conceivably see things like *kilofoot (kft)* or *microinch (pin)*. In addition to the base units, there are various other units which are typically named after scientists who discovered them, such as *farad (F)* which is a unit of capacitance and is named after Michael Faraday, *volt (v)* the unit of electric potential difference which is named after Alessandro Volta or *watt (W)*, the unit of power which is named after James Watt. All of these standardized units of measure are governed by the SI and are a staple of scientific and technical communication.

While metric measurements are rapidly becoming the norm internationally, you should not be surprised to see Imperial units of measurement sometimes being used in certain languages, particularly English. This is especially true in certain types of technical text such as workshop manuals, specifications or parts catalogues where *inches, feet, pounds and ounces* are still sometimes used.

A formula is a concise way of expressing information such as chemical reactions or mathematical operations in a symbolic manner. They can also be used to express general relationships between quantities or variables. The advantage of using formulae is that they are invariably more compact than any alternative verbal descriptions; they are accurate because there is no room for interpretation of words. Equally important is the fact that formulae are widely regarded as virtually universally intelligible. Indeed, mathematics was once described by Kasner and Newman as "a universal language, valid, useful, intelligible everywhere in place and time" (1940:358).

Example of equations

Chemistry

CaCI 2 (aq) + 2AgNO 3 (aq) -> Ca(NO,) 2 (oq) + 2AgCI(s)

3.2 Typical text types

While there are numerous types and variations of texts, the same general types appear regularly.

There are numerous different types of texts used to communicate scientific and technical information, and most of them are in a constant state of change. Each text has its own characteristics and content and is generally produced for a specific purpose. Some types of texts may merge to create new text types while others simply disappear. Given this state of flux, it would be very difficult if not impossible to identify, catalogue and describe each type of text here. This variety and variability notwithstanding, it is possible to group the majority of scientific and technical texts under the following headings:

- Manuals
- Applications and proposals
- Reports and scientific papers
- Presentations
- Regulatory documents
- Popular science

3.2.1 Manuals

Manuals are educational documents. They are tools which help readers acquire new information to help them to learn how to do something or understand something. The aim of this type of document is to provide the reader with easy access to precisely the information they need at a particular moment and to ensure that it is clear and comprehensible. To achieve this, a number of types of manual have emerged in order to meet the requirements of readers and the circumstances in which they use the documents.

Cookbooks typically consist of a set of recipe-style units consisting of a bullet list of "ingredients" or prerequisites and a numbered list of steps to be carried out. This

type of manual is best suited to describing information which is procedural and which can be broken down into discrete chunks or stages. Since this type of text is designed to give clear, step-by-step instructions of the type which might appeal to rote users or to expert users in a hurry, it is essential that the flow of information be controlled so as not to overload the reader. For this reason, it is considered bad practice to combine multiple tasks into a single sentence no matter how elegant or compact the sentence is.

Tutorials are designed to provide readers with a basic introduction to a topic or product. This is usually achieved through a series of interrelated, task-orientated units which teach readers how to do specific tasks or activities. Often the tutorial, whether printed or online, is the very first contact a reader will have with a product or a concept so it needs to guide them relatively gently and in stages towards a certain level of competence. This can potentially be a stressful time for some readers, some of whom may be fearful of making mistakes, or concerned that they may not have enough experience to learn.

It is important, then, that a tutorial not make matters worse by giving information which the reader cannot understand, whether it is because the information is confusing, too advanced or just plain wrong. Karen Schriver (1996:216 and 224-227) discusses some interesting studies which show that most people (approximately 63% according to one study) tend to blame themselves for problems they encounter when following instructions in texts, even if it is clear that the texts are substandard.

Tutorials, therefore, are expected to be encouraging and supportive and to provide reassurance where appropriate and above all, they should not make the reader feel stupid. For this reason, it is not at all uncommon for tutorials to address readers directly or to acknowledge the difficulty of a particular task. It is important to remember, however, that not all tutorials are aimed at complete novices with little or no background information. The challenge is not overly simplifying the text for them so that they feel patronized.

Guides are designed to follow on from tutorials and to teach more advanced

material to readers who already have a basic understanding of the subject. A typical guide will contain plenty of examples (which translators may need to adapt to the target language culture) accompanied by detailed descriptions, figures, tables and diagrams. Since readers already have a basic understanding of the subject, they will be less fearful of it and may even want or need additional background information to help deepen their understanding of the subject.

This type of manual is usually used for products and technologies where steps are either not very obvious or where the product could be used in several ways depending on the user.

Tutorials and guides can also be incorporated into the same document. In such cases, it is important for you as the translator to remember that the function of such a document will most likely change after a couple of chapters, i.e. from instructional to explanatory as the reader gains a better understanding of the product. As a result, the language used to achieve these functions will change and you will need to modify the translation strategies you use accordingly.

Reference manuals represent a much more comprehensive body of information than tutorials or guides, and they are intended for readers who already have quite a high level of knowledge but who may need to refresh their memory as to certain details or to find information on less commonly used functions, for example. In a reference manual, the material is typically organized into focused topics and generally ordered either alphabetically or into logical sections of related topics. Each of the topics is a discrete unit of information which is independent of the others, i.e. each topic is designed to be read on its own without one necessarily having to read other entries. With this in mind, it is unlikely that a reference manual will ever be read from cover to cover, but rather will be dipped into as and when necessary. From a writing and translation point of view, this means that certain information may need to be repeated in a number of topics to prevent readers having to skip back and forth through the document.

Online help is a type of technical manual which is included with and accessed from within a piece of software. It is designed to provide information and assistance to users in situ. There are two main types of help system available to users: general help systems which users can search through, and context help which provides assistance depending on what the user is doing at any given time. Typical help systems consist of numerous topics, often task-based, which are linked together by means of hyperlinks, much like on websites. Each topic is typically assigned to one specific task and, as with a reference guide, is designed to function as a discrete, independent unit of information. This is because, like websites, tasks are discrete and can be accessed through a table of contents, list of keywords or search function; there is no way of predicting a user's point of entry into the system.

3.2.2 Applications and proposals

Like reports, which we will discuss shortly, applications and proposals are among the few types of documents that can be justifiably described as being both scientific and technical. A proposal is essentially a request to do or get something; a very complex and detailed sales pitch. In order to fulfil this function, the text is composed of several components or subtexts, each of which has its own function, content and style of language:

• Abstract: A summary of all key points in the proposal.

• Biographies: More prevalent in scientific and academic proposals and used to emphasize the expertise of the proposers, and, in theory, the merit of the proposal.

• Cover letter: A standard letter from the proposers informing the recipient of their intention to submit a proposal.

• Project description: Perhaps the most important part of a proposal, it contains a significance statement, objectives and hypotheses, and methodological information.

• Schedule : Describes the proposed timeframe of the proposed project, including dates, contingencies and possibly risks to timely completion. This section may also contain financial information such as bonuses or lateness penalties.
• Budget: Provides key financial information.

3.2.3 Reports and scientific papers

Perhaps even more so than proposals, scientific papers are a hybrid of science and technology, as they usually combine theoretical information with practical, applied information. Scientific papers and reports can take a number of structural forms but the main ones are:
• Introduction - Materials and methods - Results - Discussion (sometimes referred to as IMRAD).
• Abstract - Introduction - Materials - Procedure - Results – Conclusions - References.

Abstracts are one of the most important aspects of a text as they can determine whether or not the main text will be read. An abstract is a condensed summary of the main text and, together with the title, needs to function as a text in its own right in order to allow potential readers to accurately determine whether the paper contains the information they are looking for. If something is awkward or unclear in an abstract, as a translator you cannot simply shrug it off and assume that it will become clear when the reader reads the rest of the text because they may not read the text as a result of this ambiguity.

The **Introduction** seeks to provide background information to readers to show the context within which the current work was carried out. This will often involve the use of references and quotes from related literature which require particular attention from the translator when it comes to reproducing, translating or transcribing the information.

The **Materials** section contains a detailed summary of all of the materials in

the study. This can often be quite technical and may contain various technical terms, including proprietary or trademarked names so correct spelling and orthography is essential.

The **Procedure** section contains relatively straightforward step-by-step procedural descriptions of the activities carried out. The key problems presented by this section include abbreviations, acronyms, units of measure and ellipsis. Other considerations include the need for consistency and absolute clarity; there can be no room whatsoever for inaccurate or unclear information, as it may affect the repeatability of an experiment, for example, and most significantly, render the study unreliable.

The **Results** section is an objective statement of the facts uncovered by the study. There is no discussion but rather a presentation of statistics, events, findings or other data. Such a section may include numbers, statistics (and standard statistical phrases regarding probabilities etc.), physical descriptions or reported speech from interviews (where you should translate exactly what is written, as it is written, even if it does not make perfect grammatical sense).

The **Discussion** section is where this information is analyzed, interpreted and explained. This section will more than likely recap on the hypothesis presented earlier in the document and will compare, contrast and interpret the data. It will contain set phrases which scientists use to express opinions, beliefs, probabilities and doubts. As such, the language will be much more complex. Good researchers will also use the discussion section to highlight and discuss any weaknesses or limitations with the methodology used.

Not all papers will contain a **Conclusions** section but where one does exist, it will provide a summary of the hypothesis, the results and the key conclusions derived from the discussion. It may also present ideas for future research.

References are not typically something we think about from a translation perspective, but from a practical translation perspective they are worthy of mention.

While most journals will stipulate the preferred bibliographic style to be used, such as Harvard, MLA or APA, and it is not the translator's job to change these, the content of the bibliography is something where our expertise is required. When translating between European languages, we can generally leave the references alone, but when translating from Chinese into English or from Ukrainian into Arabic we are faced with a situation where the target audience is going to be presented with information in a script that they cannot decipher.

We may, therefore, need to decide ourselves or ask the client whether we need to transliterate the author names and book titles so that the target audience can read them. An ISBN number, if present, can be a very useful tool in finding out whether there is an official "gloss" or descriptive TL explanation 1 or method for transcribing this information.

3.2.4 Presentations

Although not frequently acknowledged, the PowerPoint presentation has been identified as a specific text type by both technical writing and translation scholars (Myers 2000; Rosenberg 2005). For professional translators, presentations crop up with surprising frequency and apart from the technical challenges of translating these files, they can present problems which are more significant than their friendly, multi-coloured, animated and graphics-filled appearance would suggest.

PowerPoint files, when properly constructed, will consist of text, graphics, figures and animations, which all work together to convey a message, or to support the speaker in conveying a message verbally. The constraints of space, time and legibility mean that most good presentations will be highly summarized and consist largely of bullet points - only bad presentations are crammed with paragraphs of text like a printed document. While this is good for the audience and the presenter, it is potentially bad news for the translator because there may be a lot of potentially ambiguous sentences in a presentation.

3.2.5 Regulatory documents

Regulatory documents, also referred to as normative documents, are explicit sets of rules governing the requirements for products, materials or services. Documents of this type are essentially specifications which provide clear, comprehensive and unambiguous descriptions of, for example, what a product is required to do, what characteristics a material should have or the way in which a service is to be provided. Specifications can take a more formal form in the shape of directives, laws or standards which are written by standards organizations (such as ISO, DIN or BSI), by trade organizations or government bodies. Standards seek to normalize and homogenize the design of products or materials or to regulate and standardize certain activities.

Translating such documents requires meticulous attention to detail to ensure factual accuracy in the first instance, as well as compliance with specific linguistic requirements. An example of this comes in the form of what are known as "EMEA templates". These are quality review templates produced by the European Medicines Agency and used to ensure the quality of documents by defining the format, layout and wording of product information for medicines. Product information must be produced in accordance with these templates as it forms an integral part of the licensing and approval process and, if it is deficient in any way, the medicines may be withdrawn.

Another example of a regulatory or normative text, again relating to medicine, is the British National Formulary. This document provides scientific definitions and searching for "product information templates". (You can download the templates by going to the European Medicines Agencwebsite [www.ema.europa.eu]

Practical Exercise: Find out more about standards

Visit the ISO website and use the ISO Catalogue to find out what types of products and processes are regulated by international standards. Once you have done

this, try to identify at least five standards relating to any subject and find out if they have been translated into one or more of your working languages.

Next, identify the organization responsible for managing and regulating these standards in the country where you are based.

3.2.6 Making sense of text types in translation

Different texts are produced for different purposes and audiences, and translating them means you have to understand how they are analyzed and categorized. As translators, however, we need to look at the idea of text types in more detail. The main reason is that, as translators, we need a more in-depth understanding of the workings of a text and because we are dealing with two language/text systems, and we need to assess the compatibility of the two.

There have been various attempts to create text typologies for the purpose of classifying and profiling texts, examining specialized terminology and understanding how texts work, and there is a vast amount of literature on text typologies, particularly in the field of LSP. While it simply would not be feasible to look at all of these, or to discuss the issue in anything other than a relatively superficial way, it will become apparent that by grouping texts into categories and identifying types, we can hopefully arrive at strategies for translating them.

Nord (1995:264) examines text functions in translation and uses titles and headings as an example. She identifies six functions for titles and headings, namely distinctive, metatextual, phatic, informative/referential, expressive or appellative. Assuming that we are translating a text from one language where titles are typically expressive into a language where titles are purely informative, our strategy when translating the title may require us to eliminate any parts of the text which are not purely informative. For example when translating a journal paper, the expressive title " When pets attack: Why does my dog hate me?" may need to be translated as "A clinical study

into aggression and psychosis among domestic Chihuahuas." in order to conform with target culture conventions and expectations.

While the six functions of headings and titles described by Nord (ibid.) can be applied to technical documentation, a more useful means of classifying texts is provided by Gopferich.

Gopferich's text categories and sub-categories

Text Category	Communicative Function
Juridical-Normative	Like the regulatory texts described earlier, texts in this category are used to establish a legal basis or an unambiguous standard of reference. These texts always involve legal claims or some effort to impose uniformity.
Progress-orientated Actualizing	These texts are used to communicate information for the purposes of advancing science and technology by presenting new results or knowledge or a critical evaluation of existing knowledge. This category gives rise to the subcategories of *plain presentation*, which incorporates reports, dissertations, conference proceedings etc., and *sophisticated presentation*, which includes articles in learned journals.
Didactic-instructive	Didactic-instructive texts convey information for educational or entertainment purposes or for practical application. This category gives rise to various first and second order sub-categories. The first sub-category is *human/technology interaction orientated texts* which are practical texts aimed at providing step-by-step instructions to help readers perform a task. *Theoretical texts* provide a unidirectional flow of information and the reader concentrates solely on the text. Such texts can be described as *mnemonically organized* (such as text books) or *interest-arousing* (such as popular science articles, product information)
Compilation	These texts provide an accessible summary of knowledge contained in texts of the other three text categories. There are two sub-categories: *encyclopaedic* which includes encyclopaedia entries, reviews, and *dictionary*–type documents.

Practical Exercise: Categorizing information types

Find three scientific or technical texts. They can be of absolutely any type, from the label on a bottle of bleach, the instructions for you mobile phone, the information sheet that came with your hair dye, an article from a popular science magazine, the package insert from a pack of aspirin or a paper from a scientific journal. Describe and categorize the main features of each text. What types of information does each text give? Be specific: is it procedural, declarative, facts and figures, descriptions, precautions etc.? Compare the results for each text. Are there any common features? What are the differences?

Lecture 4. Analysis of Terminology in Scientific and Technical Style.

1. **The style of the scientific prose.**
2. **The vocabulary of the scientific text.**
3. **The language of Science and the translation.**

1. The style of the scientific prose. The purpose of science as a branch of human activity is to disclose the inner substance of things and phenomena of objective reality and find out the laws regulating them, thus enabling men to predict, control and direct their future development in order to improve the material and social life of the mankind. The style of scientific prose is therefore mainly characterized by an arrangement of linguistic means which will bring proofs to confirm a theory. The main function of scientific prose is the proof.

The genre of scientific prose is mostly characteristic of the written form of the language (scientific articles, monographs or textbooks), but it may also be found in its oral form (in scientific reports, lectures, discussions at conferences, etc.); in the latter case this style has some features of colloquial speech.

The language of science is governed by the aim of the functional style of scientific prose, which is to prove a hypothesis, to create new concepts, to reveal the internal laws of existence, development, relations between different phenomena, etc. The linguistic means used, therefore, tend to be objective, precise, unemotional, and devoid of any individuality; there is a striving for the most generalized form of expression.

1. The vocabulary of the scientific text. The first and the most noticeable feature of this style is the logical sequence of utterances with clear indication of their interrelations and interdependence, that is why in no other functional style there is such a developed and varied system of linkers as in scientific prose. The most frequently used words in scientific texts are functional words, conjunctions and prepositions.

The most frequent words of this style are the following units:

a) prepositions*: of, to, in, for, with, on, at, by, from, out, about, down*;

b) prepositional phrases: *in terms of; in view of, in spite of, in common with, on behalf of, as a result of; by means of, on the ground of, in case of*;

c) conjunctional phrases: *in order that, in case that, in spite of the fact that, on the ground that, for fear that*;

d) pronouns: *one, it, we, they*;

e) notional words *(самостоятельные части речи)*: *people, time, two, like, man, made, years*.

As the scientific text is restricted to formal situations and, consequently, to formal style, it employs special vocabulary which consists of two main groups: words associated with professional communication, terms, and a less exclusive group of so-called learned words *(книжное слово)*. Here one can find numerous words that are used in the scientific text and can be identified by their dry, matter-of-fact connotation, for example, *comprise, compile, experimental, heterogeneous, homogeneous, conclusive, divergent, etc.* Another group of learned word comprises mostly polysyllabic words drawn from the Roman languages and, though fully adapted to the

English phonetic system, some of them continue to sound foreign. Their very sound seems to create complex associations: *deleterious, emollient, incommodious, meditation, illusionary.*

A particularly important aspect of scientific and technological language is the subject-neutral vocabulary which can be found in different specialized domains. In particular, a great deal of scientific work involves giving instructions to act in a certain way, or reporting on the consequences of having acted so. Several lexical categories can be identified within the language of scientific instruction and narrative:

Verbs of exposition: *ascertain, assume, compare, construct, describe, determine, estimate, examine, explain, label, plot, record, test, verify*.

Verbs of warning and advising: *avoid, check, ensure, notice, prevent, remember, take care*; also several negative items: *not drop, not spill*.

Verbs of manipulation: *adjust, align, assemble, begin, boil, clamp, connect, cover, decrease, dilute, extract, fill, immerse, mix, prepare, release, rotate, switch on, take, weigh*.

Adjectival modifiers and their related adverbs: *careful (ly), clockwise, continuous (ly), final (ly), gradual (ly), moderate (ly), periodic (ally), secure (ly), subsequent (ly), vertical (ly)*.

The general vocabulary employed in scientific text bears its direct referential meaning, i.e. words used in the scientific text will always tend to be used in their primary logical meaning. Hardly a single word used in more than one meaning will be found here. Nor will there be any words with contextual meaning. Even the possibility of ambiguity |ambɪˈgjuːɪti| is avoided.

Likewise, neutral and common literary words used in scientific text will be explained, even if their meaning is slightly modified, either in the context or in a footnote by a parenthesis |pəˈrɛnθɪsɪs|(круглые скобки), or an attributive phrase.

A second and no less important peculiarity and, probably, the most conspicuous (очевидный) one, is the use of terms specific to each given branch of science. Due to the

rapid dissemination of scientific and technical ideas, particularly in exact sciences, some scientific and technical terms begin to circulate outside the narrow field they belong to and eventually begin to develop new meanings. But the overwhelming majority of terms does not undergo this process of de-terminologization and remain the property of scientific text. There they are born, develop new terminological meanings and there they die. No other field of human activity is so prolific in coining new words as the science is. The necessity to penetrate deeper into the essence of things and phenomena gives rise to new concepts, which require new words to name them. A term will make more direct reference to something than a descriptive explanation, i.e. a non-term. Furthermore, terms are coined so as to be self-explanatory to the greatest possible degree.

3.The language of Science and the translation. The translation is a multifaceted |mʌltɪˈfasɪtɪd| (*многогранный*) phenomenon and some aspects of it can be the subjects of the research of different sciences. The main place in modern translation belongs to linguistic translation, which studies the translation as a linguistic phenomenon. Different types of translation complement each other and strive for the detailed description of the activity of the translation.

The theory of translation puts forward the following tasks:

1. To reveal and to describe the common linguistic basis of the translation, that is to show which peculiarities of the linguistic systems and regularities of the language operation are the basis of the translation process, which peculiarities make the process of translation possible and determine its character and borders.
2. To determine the translation as the subject of the linguistic research, to show its difference from the other kinds of linguistic mediation.
3. To work out the basis of the translation activity types classification.
4. To reveal the essence of the translation equivalence as the basis of the communicative identity of the original text and the translation.

5. To work out the general principles and the peculiarities of the construction of special translation theories for the different combinations of languages.
6. To work out the general principles of the scientific description of the translation process as the activity of transforming the original text into the target language text.
7. To reveal the influence on the translation process on the pragmatic and social linguistic factors.
8. To determine the concept “the translation norm” and to work out its principles.

In the result of this research it can be concluded that the main stylistic feature of the scientific and technical text is the exact and clear interpretation of the material without any expressive elements that make the speech more emotionally saturated. There are almost no metaphors, metonymies, transpositions and other stylistic features in scientific-technical literature while they are widely used in literary works. Although the scientific text is far from the living colloquia language, it contains a number of neutral phraseological units.

The main requirements for the scientific and technical translation is to comply with the precision (all items in ST shall be reflected in translation), the conciseness (all items of ST shall be translated laconically), the clearness, the literacy (the text of the translation shall comply with norms of the literary language without the use of syntactical structures of the source language).

All terms are united into terminological systems that express the notions of science and technologies. The difficulties that arise during the translation of the terms are connected with the imperfection of the existing terminological systems. The most important among them are the phenomena of terminological synonyms, homonyms and polysemantic units. All of these leads to the approach of the contextual translation, that is:

1) identifying the word meaning due to its context;
2) selecting the proper context equivalent term;
3) creating adequate text by means of the selected context equivalent terms.

The translation of scientific-technical texts shall convey the exact content of the source text. Some deviations can be made due to the peculiarities of the target language or stylistic issues. It is very important to prevent the loss of meaningful information contained in the source text.

Lecture 5.

Translation and scientific-technical information exchange.

1. **The process of translation.**
2. **The stages of the process of translation.**

1. The process of translation. Usually when people speak about translation or even write about it in special literature they are seldom specific about the meaning. The presumption is quite natural – everybody understands the meanings of the word. However, to describe translation intuitive understanding is not sufficient – what one needs is a definition.

Translation means both a process and a result, and when defining translation we are interested in both of its aspects. First of all, we are interested in the process because it is the process we are going to define.

The formation of the source and target texts is governed by the rules characteristic of the source and target languages. Hence the systems of the two languages are also included in our sphere of interest. These systems consists of grammar units and rules, morphological and word-building elements and rules, stylistical variations and lexical distribution patterns (lexico-semantic paradigms). Moreover, when describing a language one should never forget that the language itself is a formal model of thinking, i.e. of mental concepts we use when thinking.

In translation we deal with two languages (two codes) and to verify the information they give us about the extralinguistic objects (and concepts) we should consider the extralinguistic situation and the background formation. Having considered

all these, we shall come to understand that as an object of linguistic study the translation is a complex entity consisting of the following interrelated components:

1) elements and structures of the source text;
2) elements and structures of the target language;
3) transformation rules to transform the elements and structures of the source text into those of the target text;
4) systems of the languages involved in translation;
5) conceptual content and organization of the source text;
6) conceptual content and organization of the target text;
7) interrelation of the conceptual contents of the source and target texts.

In short, the translation is a functional interaction of languages. To study this process we should study both the interacting elements and the rules of the interaction. Among the interacting elements we must distinguish between the observable and those deducible ones (the deducible ones are deduced from the observable ones). The observable elements in the translation are parts of words, words, and word combinations of the source text.

The process of translation involves parts of words, words and word combinations of the target **language** (not of the target **text**, because when we start translating or, to be more exact, when we begin to build a model of our future translation, the target text is yet to be generated). These translation components are deducible from the observable elements of the source text.

In other words, we can draw the following conclusion:

During the process of translation one intuitively fulfills the following operations:

a) deduces the target language elements and rules of equivalent selection and substitution on the basis of the observed source text elements;

b) builds a model consisting of the target language elements selected for the substitution;

c) verifies the model of the target text against the context, the situation and the background information;

d) generates the target text on the basis of the verified model.

2. The stages of the process of translation. Thus, the process of translation may be represented as consisting of three stages:

1. Analysis of the source text, the situation and the background information.

2. Synthesis of the translation model.

3. Verification of the model against the source and the target context (semantic, grammatical, stylistic), the situation, and the background information resulting in the generation of the final target text.

Let us illustrate this process using a simple assumption: you receive one sentence for translation at a time (by the way this assumption is a reality of consecutive interpreters). For example, if you receive: «At the first stage the chips are put on the conveyor» as a source sentence. Unless you observe or know the situation your model of the target text will be: "На першому етапі *стружку / щебінку / смажену картоплю / нарізану сиру картоплю* кладуть на конвеєр". Having verified this model against the context provided in the next sentence (verification against semantic context): "Then they are transferred to the frying oven", you will obtain: "На першому етапі нарізану сиру картоплю кладуть на конвеєр". It looks easy and self-evident, but it is important, indeed, for understanding the way the translation is done.

Verification against semantic and grammatical context is performed either simultaneously (if the grammatical and semantic references are available within a syntagma) or delayed (if relevant semantic references which may be available in one of the following rather than in one and the same sentence). Cases when the grammatical semantic or situational references are delayed or missing present serious problems for the translation. We intuitively formulate hypotheses about the translation of certain words and phrases and then verify them.

So, speaking very generally, when we translate, the first thing we do is the analysis of the source text for the extraction of all available information necessary for generating the target text (build the intermediate model of the target text), the second thing we do is the verification of this information against the situation and the background knowledge, the third thing is the generation of the target text.

Lecture 6. Equivalence and Adequacy |ˈadɪkwəsi| in Translation.

1. The theories of the concept of equivalence.

1.1 Jakobson and the concept of equivalence.

1.2 Nida and Taber: Formal correspondence and dynamic equivalence.

1.3 Catford and the introduction of translation shifts.

1.4 Baker's approach to translation equivalence.

2. Types of translation equivalents.

3. Adequacy of translation.

1. The theories of the concept of equivalence. The comparison of texts in different languages inevitably involves a theory of equivalence. Equivalence can be said to be the central issue in translation although its definition, relevance, and applicability within the field of translation theory have caused heated controversy, and many different theories of the concept of equivalence have been elaborated within this field in the past fifty years.

1.1 Jakobson and the concept of equivalence in difference. Roman Jakobson's study of equivalence gave new impetus |ˈɪmpɪtəs| to the theoretical analysis of translation since he introduced the notion of 'equivalence in difference'. On the basis of his semiotic approach to language and his aphorism 'there is no signatum without signum' (1959:232), he suggests three kinds of translation:

- Intralingual (within one language, i.e. rewording or paraphrase)
- Interlingual (between two languages)
- Intersemiotic (between sign systems)

Jakobson's theory is essentially based on his semiotic approach to translation according to which the translator has to recode the ST message first and then s/he has to transmit it into an equivalent message for the TC.

1.2 Nida and Taber: Formal correspondence and dynamic equivalence. Nida argued that there are two different types of equivalence, namely *formal equivalence* (*formal correspondence)* and *dynamic equivalence*. Formal correspondence 'focuses attention on the message itself, in both form and content', unlike dynamic equivalence which is based upon 'the principle of equivalent effect'.

Formal correspondence consists of a TL item which represents the closest equivalent of a SL word or phrase.

Dynamic equivalence is defined as a translation principle according to which a translator seeks to translate the meaning of the original in such a way that the TL wording will trigger the same impact on the TT audience as the original wording did upon the ST audience. One can easily see that Nida is in favour of the application of dynamic equivalence, as a more effective translation procedure.

1.3 Catford and the introduction of translation shifts. Catford's main contribution in the field of translation theory is the introduction of the concepts of types and shifts of translation. Catford proposed very broad types of translation in terms of three criteria:

1. The extent of translation (*full translation* vs *partial translation*);
2. The grammatical rank at which the translation equivalence is established (*rank-bound translation* vs. *unbounded translation*);

3. The levels of language involved in translation (*total translation* vs. *restricted translation*).

As far as translation shifts are concerned, Catford defines *level shifts,* where the SL item at one linguistic level (e.g. grammar) has a TL equivalent at a different level (e.g. lexis), and *category shifts* which are divided into four types:

1. *Structure-shifts,* which involve a grammatical change between the structure of the ST and that of the TT;
2. *Class-shifts,* when a SL item is translated with a TL item which belongs to a different grammatical class, i.e. a verb may be translated with a noun;
3. *Unit-shifts,* which involve changes in rank;
4. *Intra-system shifts,* which occur when 'SL and TL possess systems which approximately correspond formally as to their constitution, but when translation involves selection of a non-corresponding term in the TL system' (ibid.:80). For instance, when the SL singular becomes a TL plural.

1.4 Baker's approach to translation equivalence. New adjectives have been assigned to the notion of equivalence (grammatical, textual, pragmatic equivalence, and several others) and made their appearance in the plethora of recent works in this field. An extremely interesting discussion of the notion of equivalence can be found in Baker (1992) who seems to offer a more detailed list of conditions upon which the concept of equivalence can be defined. She explores the notion of equivalence at different levels, in relation to the translation process, including all different aspects of translation and hence putting together the linguistic and the communicative approach. She distinguishes between:

- Equivalence that can appear at word level and above word level, when translating from one language into another.

- Grammatical equivalence, when referring to the diversity of grammatical categories across languages.
- Textual equivalence, when referring to the equivalence between a SL text and a TL text in terms of information and cohesion.
- Pragmatic equivalence, when referring to implicatures and strategies of avoidance during the translation process.

2. Types of translation equivalents. Modern translation theory suggests two basic grades of translation equivalents:

1. Full Translation Equivalents.

For practical purpose full equivalence is presumed when there is complete coincidence of pragmatic meanings of the source and target language units. The stylistically neutral words with reference meanings (terms, geographical and proper names, words denoting physical objects and processes) are more likely to have full translation equivalence because semantic and pragmatic parts of their meanings are less ambiguous. complete coincidence of pragmatic meanings of the source and target language units. "*Книга", as an equivalent of the English word "book", is full in all equivalence aspects because it has similar syntactic functions(those of a Noun), its lexical meaning is also generally similar and the pragmatic aspect of this equivalent (the message intent and target audience reaction) coincides with that of the English word. Thus, книга is conventionally regarded as a full equivalent of the word 'book'.*

2. Partial Translation Equivalents

The partiality of equivalence is the absence of one or more of equivalence aspects, e.g. of semantic, syntactic or pragmatic aspect.

Let us consider the variants of translation of the English saying 'Carry coal to Newcastle'. If one translates it as "Возити вугілля до Ньюкасла" it would lack the pragmatic aspect of equivalence. (The intent of this message Bring something that is readily available locally would be lost, because the Ukrainian audience could be

unaware of the fact that Newcastle is the centre of a coal-mining area). If, however, one translates it "Їхати до Тули з власним самоваром" there would be loss of the semantic similarity, but the pragmatic intent of the message will be preserved, which, is the first priority of translation. Anyway both suggested translation equivalents of this saying are considered to be partial.

3. Adequacy of translation. *Adequacy of translation* is understood in two senses: (1) it is the reproduction of the unity of content and form of a SLT by means of another language; (2) it is identical information conveyed by similar or identical means of a different language.

The difference between equivalence and adequacy of translation can be established in regard to the character, object and the content of the two categories:

- in terms of the character adequacy of translation is viewed as an evaluative category, thus an adequate translation means a good translation; an equivalent translation is a technical category referring to an established standard which implies the greatest possible identity or similarity of all content levels of a SLT and a TLT. The questions asked in both cases are not the same, namely: if the final text version corresponds to the initial one (equivalence), and if translation corresponds to the communicative situation and conditions (adequacy).
- in terms of the object adequacy of translation refers to the procedure (process) of translation and thus it is related to the conditions of an interlingual and intercultural communicative act and determines the use of speech filters (semantic, combinatorial, word-building, etc), the choice of translator's strategies that meets the communicative situation. Equivalent translation is aimed at a desirable result and establishes to what extent the TLT corresponds to the SLT as both perform similar communicative functions in various cultures.
- in terms of the content adequacy of translation is based on the actual practice of translation and approves of translation solutions of a compromise nature on

condition that they better correlate with the communicative situation; equivalent translation presupposes maximum possible transference of the communicative functional invariant of the SLT.

Lecture 7. Basic Translation Techniques

7.1. Direct translation

Direct translation involves relatively straightforward strategies which require less intervention by the translator and less deviation from the ST. Though relatively unsophisticated from a linguistic point of view, direct translation strategies such as literal translation, borrowing and calquing are useful in a range of scenarios.

7.1.1 Literal translation

Often confused with word-for-word translation, literal translation, though related, is more sophisticated than simply replacing each ST word with a corresponding TT word. With this approach, we may start by translating individual words but, when we reach a point where the TT no longer complies with the grammatical rules of the TL, we move to translating group-by-group or clause-by-clause. Essentially, literal translation involves producing a TT which reflects the content and features of the ST as closely as possible and only deviating from this where necessary in order to produce a TT which is grammatically correct and intelligible. Literal translation will typically avoid any additions, omissions, paraphrasing or other translation techniques to produce what could be described as a faithful and simple translation.

While it is tempting, particularly in a book on technical translation, to say that translation is such a complex process that it always requires sophisticated strategies, the reality is that literal translation is not as uncommon as you would expect. Cardoso de Camargo (2001:37) shows that literal translation is actually one of the most frequently used translation strategies in technical texts. Using a corpus of 18 technical,

corporate and journalistic texts, she compared the use of various translation strategies in English texts and their Portuguese translations and found that in technical texts, literal translation occurs more frequently than other strategies such as transposition, modulation, addition or adaptation.

Of particular interest, however, is her finding that literal translation is used to translate a smaller proportion of the total word count in technical texts in comparison with corporate and journalistic texts. This is rather surprising because we would expect journalistic texts, in particular, to feature richer and more complex language use which should not be suitable for literal translation. In fact, literal translation is used for 45.3% of the lexical items in journalistic texts as opposed to 39.6% in technical texts (ibid.).

But while there are situations and texts where literal translation will be our most common tool, it is not the full story and you only need to translate a few technical texts to realize this. Even the process of adjusting elements of a source text so that they conform to TL grammar can be a complex process. We know that different audiences have preferences and expectations regarding the way in which information is presented to them and this means that even though a literal translation may be grammatically, syntactically and idiomatically correct from a purely linguistic point of view, it may not be appropriate in the target text.

Nevertheless, even though literal translation may proportionally see more use in technical texts, it is by no means the most important strategy, nor does it represent the main tool in a translator's toolbox. Indeed, those instances where literal translation will not suffice are more than enough to keep us busy as we translate technical texts. In addition to literal translation, technical translation requires a range of other translation procedures.

7.1. 2 Borrowing

Borrowing can be described as perhaps the simplest form of exchange between languages as it involves transferring an SL lexical item into the TT without any form of modification except, perhaps, for transliteration to account for different writing systems and characters. Often borrowing is used because there is no existing word or concept in the TL but it can be used deliberately in order to create a particular effect in the TT, for example to make the TT seem more foreign or "exotic". Such an approach might prove useful when translating popular science texts where the text tries to recreate a particular atmosphere or sense of the source culture. The following words are used in a variety of languages without translation, although they may be modified slightly to fit in with the grammatical rules of the receiving language.

■ boot, Internet, email, pixel, ABS (Anti-Blockier System), pitot tube, diskette

7.1. 3 Calque

Calquing is similar to borrowing in many ways but it involves the literal translation of the individual constituent parts of an SLword or phrase to create a new term, or neologism, in the TL. The use of calquing is something to be approached with caution, as a caique is often a rather alien-sounding thing in the TL and, with the exception of the author (or in this case, the translator) and a few others, neologisms may confound most readers and ultimately prove as uninformative as retaining the original ST term. While authors such as Mancuso (1990:197) condemn neologisms as the work of "arrogant" authors, it is sometimes necessary to introduce new words and there are various accepted caiques such as those listed below. Nevertheless, introducing new words without good reason is inadvisable, particularly where there are perfectly acceptable alternatives in the TL.

■ *log in (German: einloggen),*

■ *skyscraper (Spanish: rascacielos),*

■ *command separator (Danish: kommandoseparator),*

■ *disk defragmenter (Swedish: Diskdefragmenteraren)*

■ *workstation (Swedish: arbetsstationer)*

7.2 Oblique translation

More sophisticated and complex than direct translation, oblique translation is used when the grammatical, pragmatic and lexical differences between the SL and TL are too significant to allow direct translation.

While direct, especially literal, translation is quite common as a translation strategy, there are cases where a straightforward approach is not enough to allow us to produce a suitable translation. In such cases, we will need to resort to less direct approaches in order to produce our translation. This is where the notion of oblique translation comes into play. Coined by Vinay & Darbelnet (1958/1995), it describes four translation procedures which are used where the stylistic or linguistic features of the source text are such that a straightforward replacement of ST elements is not possible because it would produce a TT which is unacceptable in terms of meaning, structure, idiomaticity or style.

7.2.1 Equivalence

Using the definition provided by Vinay & Darbelnet (1995:31), we can describe equivalence as the process of replacing elements in the ST with corresponding elements in the TT so as to "replicate the same situation as in the original whilst using completely different wording" (ibid: 342). We would use such an approach if translating more directly would result in a translation which loses meaning or impact, or which is missing the idiomaticity or flow of a corresponding text originally produced in the target language.

In contrast to the more conventional notion of equivalence, which would take

several volumes to define and explain, equivalence as a translation procedure simply involves finding the TL counterpart for a particular SL word or phrase. We can use it, for example, to replace fixed expressions or formulaic phrases, idioms or proverbs. More specifically, in the case of technical texts we can use this procedure as a way of translating elements such as warning signs and labels.

■ *Danger! -> Risk of Death*

■ *Wet Paint -> Freshly Painted*

7.2.2 Transposition / Recategorization

Transposition or recategorization is the process of replacing one class or type of word in the ST with another type of word in the TT without changing the meaning. This sounds complicated but, in reality, it is quite simple and most people will find it reasonably intuitive. This procedure is usually needed because of differences in the way information is expressed in the SL and the TL, and maintaining the same word class would result in a translation that is awkward or unintelligible. Some transpositions are obligatory; for example, where the SL may have a noun describing a particular process or object, while the TL can only convey this information using a descriptive phrase. Other transpositions are optional and may be chosen simply to improve the style or flow of the TT. Examples of transpositions include:

■ Nominalizations (noun to verb): *"The regulation of the heating system is carried out by the main computer" vs. "The main computer regulates the heating system"*

■ Passive to active: *"The new standard was approved by all member states" vs. "All member states approved the new standard".*

■ Passive to imperative: *"The safety mechanism is engaged prior to performing maintenance work" vs. "Engage the safety mechanism before carrying out maintenance work"*.

7.2.3 Modulation

Modulation refers to the process of changing the form of information by presenting it from a different point of view. It is useful where a literal translation would result in a translation which might well be grammatically correct but which is nevertheless unidiomatic. Some modulations are compulsory (or fixed), usually because of structural differences between the SL and TL, while others (known as free or optional modulations) are not. At the most basic level, modulations might involve changing a sentence from a positive to a negative, for example:

■ *"Never turn off the refrigeration unit" vs. "Leave the refrigeration turned on at all times"*.

■ *"Easy to use" vs. "Not difficult"*.

■ *"Protects against most viruses" vs. "Only allows a few viruses through"*

■ *"This X-ray machine does not damage photographic films" vs. "Photographic films can be scanned by this X-ray machine without being damaged"*.

Other types of modulations involve replacing abstract concepts with concrete concepts:

■ *Reboot -> Restart, Start Again*

■ *Hardcore -> Crushed Stone*

■ *Monitor-> Visual Display Unit (VDU)*

■ *Tarmac -> Asphalt*

Some terms and expressions are modulated simply because of a TL preference for using a particular viewpoint to describe the concept. Take for example the *Geneva stop*, which is a type of gear mechanism used in mechanical watches and old-fashioned cinema projectors. It is also known as a *Maltese cross* because of its appearance. While both terms are equally correct and used with more or less the same frequency in English, different languages have specific preferences for which term they use.

Geneva Stop	Maltese Cross
Portuguese: roda de Genebra	▪ Danish: malteserkorsmekanisme ▪ Dutch: maltezerkruis ▪ Spanish: mecanismo de cruz de malta ▪ Swedish: malteserkors

Other modulations involve replacing a concept "part for whole" or "whole for part". In a text describing the manufacture of cars, this might involve replacing transmission (whole) with gears (part).

7.2.4 Adaptation

Adaptation can be described as a strategy of last resort in translation as it may involve a significant amount of deviation from the ST. Vinay & Darbelnet (1995:39) themselves describe it as the "extreme limit of translation". Indeed, it is a procedure to be used with caution, no matter what type of text you are translating.

Adaptation makes use of three key procedures - cultural substitution, paraphrasing and omission - and is used when the ST describes a situation or concept which does not exist in the TL culture or which does not have the same connotations or relevance to members of the TL audience. Such cases might include references to foods in the instructions for microwave ovens or dietary supplements, references to "mailboxes" or "zip codes" in computer software or websites, or even references to institutions such as local councils or government authorities in design and construction documentation for a manufacturing plant. We might also find ourselves forced to adapt the ST if it is poorly written, unclear or somehow resistant to translation.

Under normal circumstances, we would use cultural substitution first in order to overcome a culture-specific problem in the ST. For example, in an environmental impact report for building storage tanks in a biogas processing plant we might replace a reference to a government agency in the SL culture with a reference to the corresponding agency in the TL culture. We might even replace a reference to a particular type of soil commonly found in the source country with a reference to a comparable soil in the target country.

If such a substitution fails, we may paraphrase the ST by expressing the meaning of the ST descriptively, using words which do not necessarily correspond to those of the ST. Using the examples just given, we might instead include sentences
such as "the gas collection plant must be inspected by the relevant environmental agency in your area" or "the decision to use reinforced concrete will depend on the soil composition in the area". It is perhaps the most useful of all translation procedures for technical translation as it also helps to avoid interference and unidiomatic constructions caused by sticking too closely to the ST.

If we are unsuccessful in finding a cultural substitute or paraphrasing the ST, we can, in a limited number of cases, omit information. Extreme caution is required in such instances because, as we have seen in previous chapters, technical documentation is

concerned first and foremost with information so the decision to omit information should only be a last resort and you must be able to justify it completely.

Practical examples of using adaptation might include replacing a sentence in the documentation for a satellite receiver which advises users to consult a specific magazine which only exists in the SL country with a generic reference such as "more details can be found in various satellite magazines". Training materials or technical advertisements may describe typical scenarios in which a product might be used. In order to make this information as meaningful and clear to the reader as possible, the scenarios will more than likely be something to which the reader can relate, and as a result, they may be quite firmly rooted in the SL culture.

7.3 Expansion and contraction

Depending on the subject and your target audience's background knowledge, you may need to add explanations to your translation or remove unnecessary detail so that it meets readers' expectations.

Expansion, also known as exploitation, involves making something which is implicit in the ST explicit in the TT in order to make the TT clearer, more relevant to the TT audience, or to compensate for some perceived lack of background knowledge on the part of the TT audience. Expansion may involve adding explanatory phrases to clarify terms or statements or adding connectors to improve
the flow of the text and to make it more readable. As a result of this strategy, a translation ultimately may contain a higher level of semantic redundancy or repetition, whereby the same or similar information may appear a number of times, sometimes in close proximity.

Although this may prove problematic in certain types of text, technical texts in particular are less likely to suffer as a result because they are by necessity explanatory in nature andpresent less information in a greater number of words than scientific texts, for example.

Expansion is a useful strategy for improving the cohesion and coherence of the TT when the ST has, for instance, been produced by someone other than a trained writer. In such cases, the ST may contain an excessive amount of jargon or ellipsis, which, although perfectly comprehensible to SL readers, may not be entirely intelligible to a TT audience. Expansion can also prove useful where the TT audience typically has less subject or background expertise than the ST audience and requires additional explanation. A similar scenario occurs where the ST audience can be regarded as a high context culture which requires less explicit information, while the
TT audience is either a low context culture or less dependent on context than the ST audience. In such cases the TT audience, although possessing a comparable level of subject knowledge, may expect and prefer certain things to be spelled out rather than left unsaid.

A very good example of this was a brand of instant mashed potato sold by the same company on both the German and Irish markets. The German packaging featured instructions for making one portion of the product and instructions for making two portions. The only difference between the two sets of instructions was the doubling of quantities of water and butter. The same product on sale in Ireland, however, only provided instructions for making one portion.

It is difficult to provide a satisfactory explanation for this apart from cultural preferences. It is something that could prove problematic for translators in either direction, as there is a risk of either patronizing one audience (by including instructions which the target audience may regard as obvious) or failing to respect
the preferences of the other (by omitting instructions, which forces the target audience to resort to guesswork).

Conversely, contraction refers to the practice of making something less detailed in the TT. The motivations for this are the same as for expansion, and the aim is to adapt the TT to the perceived expectations and background knowledge of the TT audience. Taking the example of the instant potato instructions, translating the German

instructions into English for the Irish market would probably involve contracting the instructions by omitting the instructions for making two portions. Translators may also choose to employ contraction as a strategy to eliminate information which can reasonably be regarded as unnecessary, irrelevant or potentially confusing for the TT audience.

7.4 Generalizing and particularizing

Different languages, texts and audiences will require different levels of precision and specificity.

Generalizing is used to describe the practice of making information in the ST less detailed when it is transferred to the TT. This strategy can take the form of omitting information or replacing a specific word with a word which has a less specific meaning. This may be useful where the target language does not have a similarly specialized or specific word, preferring instead to use a generic catch-all term. It may also be necessary, for example, if you are translating a specialized text for a general audience where, as the translator, you might decide that a particular term in the source text will be unfamiliar to the target audience so you decide to translate it using a less specific, more generic term or hypernym in the TT.

Of course this approach can only work if the specific, detailed term (the hyponym) presented in the ST is not essential for comprehension, if it can reasonably be inferred from the context or if it can be slotted in at a suitable point somewhere else in the text; otherwise the reader will either not fully understand what is being said or will be unable to carry out some action. In such cases, the original information will have to stay in the text.

In practice, this might mean that if you are translating a text which describes how specialist paints are used to prevent rust from affecting the structure of oil rigs, you might translate the word coating with a word along the lines of paint, a less specific term, if the TT was for a general audience.

Particularization, or specification, on the other hand, is where we use a more specific term to the one contained in the ST. We may need to do this because the generic term used in the ST is simply too broad in the TL, introduces too much uncertainty or ambiguity in the TT or has connotations associated with it which are undesirable in the TT. The challenge for us as translators, however, is to ensure that we understand the subject matter of the text sufficiently well to allow us to decide which of the possible specific terms available is the correct one. For example, does motor vehicle mean car, truck, van or motorcycle ? Often we can ascertain the correct term from the context but this will not always be the case, and thus good communication with the author or client or access to a subject matter expert is vital.

While overtranslation and undertranslation can be used intentionally as justified and effective translation strategies, it is also worth remembering that they can also be used accidentally to the detriment of the TT. One example of this relates to the translation into German of European Council Directive 70/220/EEC which deals with the safety requirements for vehicle fuel tanks. The English source text referred to fuel while the translation incorrectly referred to petrol, giving a more specific meaning than the one intended. This inappropriate use of particularization could have presented various safety, financial and legal problems for drivers, manufacturers and governments and the text had to be corrected as a result. For this reason, you should be careful when selecting TL terms to ensure that they have the same connotations and denotational meaning as the SL term unless there is a valid reason for doing otherwise (Byrne 2007).

7.5 Compensation

Particular features cannot always be recreated in the target text but it may be possible to add similar features elsewhere in the target text to make up for it.

Compensation is the process where we make up for the loss of certain source text features in the target text by introducing other features elsewhere in the translation which are not necessarily present in the source text. One of the best ways of illustrating

this is to consider what happens when we translate a humorous text or film. There may be a scene in the film where the clever use of wordplay, for example, has a humorous effect. If it is not possible to recreate this wordplay, the joke may be lost and the film loses some of its comedic content. If, however, the opportunity presents itself later on in the film to take advantage of a potential wordplay or pun we can introduce a new joke into the film thereby restoring its "humour quota". The result is that, overall, the translated film will have the same number of jokes, although they are not necessarily in the same places as the original film.

Applying this basic idea to technical texts, we know that we are not going to be dealing with jokes or word plays but it does mean we can redistribute information and textual features throughout the text in order to balance out the information load or make the style more consistent. Hervey et al. (1995) describe four types of compensation:

Compensation in kind involves replacing one type of textual feature in the ST with another type of feature in the TT. This might involve replacing infinitive forms of verbs used in German to give instructions with imperative verb forms in English. Additionally, if the syntax or tone of the ST indicates a level of formality which is not reflected by the same structure in the TL, you may need to add other syntactic or stylistic devices to recreate this effect.

Compensation in place is used to make up for the loss of a particular feature or effect at a particular point in the ST by recreating it elsewhere in the TT. If, for example, a technical advertisement contains an example of wordplay which cannot be rendered accordingly in the ST, it may be possible to produce a similar play on words elsewhere in the text providing it is appropriate to the overall purpose of the text. This approach is quite similar to the strategy of recycling information described above, and involves taking information which was originally found in one part of a text and using, or reusing, it somewhere else.

Compensation by splitting may be used where the ST contains a word for which there is no corresponding TL word which conveys the same range of meanings. An

example might be the English word fastener which is used as a collective term for all manner of objects used to attach things together such as bolts, screws, clips, clamps and pins. If we are translating into a language where a corresponding term either does not exist or is not as comprehensive we may need to spell out these meanings so as to ensure comprehensibility.

Compensation by merging allows us to condense features or information presented in the ST over a fairly long stretch of text (or in a complex compound word) and to present it in a shorter phrase or even in a single word. Using the previous example, if the source text refers to attaching a "mounting bracket to a rack unit using bolts, screws, clips, clamps or pins" we might decide to use the generic TL term fastener to combine all of these meanings into the expression "the mounting bracket can be attached using suitable fasteners".

It is worth noting that both compensation by splitting and compensation by merging are very similar to the ideas of generalizing and particularizing translation and the reasons for using them often overlap.

7.6 Restructuring

The sequence in which information is presented to readers in a text or even in individual sections, paragraphs or sentences can play an important role in the success of a translation.

Usually, information in a technical text is presented in a logical or chronological sequence. Such sequencing is particularly true in the case of instructional texts or texts which describe processes and procedures which need to be carried out. Often this will involve presenting information in the order in which it is required and the sequencing is fairly stable because it depends on real-world objects or processes. However, although perceptions of what does and does not constitute a logical or intuitive flow of information are largely culture-independent because they depend on our human

cognitive processes, there are instances where cultural expectations and norms take priority and it will be necessary to rearrange the sequence of information in a text.

One example of this is the way in which people use written instructions. Some people will read the instructions in their entirety before performing any of the steps while other people may perform each step as they read it. Obviously, this is going to cause problems for readers if a particular step can only be performed after some other step has first been completed but the instructions present the steps in the wrong order.

Gerzymisch-Arbogast (1993) identified certain patterns and characteristics relating to the sequencing of information in texts and found that certain languages favoured a particular sequencing of information which could be perceived as given and new relative to the author's perceptions of the readers' background knowledge. It is worth pointing out that this is quite different from the notions of theme and rheme, which relate to given and new information within a particular sentence or discourse. She explains that in order to produce effective translations, a translator may need to alter the sequencing and even the proportion of given and new information within paragraphs or sections of text (using expansion and contraction, generalization and particularization, or even repetition). In practice, this may involve foregrounding certain information, omitting other information or even repeating information.

A rather extreme example of this is presented in a study by Ulijn (1995) who examined the sequencing of sections within a document. Ulijn's experiment showed that the structure of documents may need to be changed for different language audiences. He found that what might be perceived as the most logical sequence of information in a document for one audience might be counterintuitive or confusing for other language audiences. The following example illustrates how the structure of a user guide might need to be changed for two different target audiences.

7.7 Iconic Linkage

Minimizing variation and ensuring the same information is expressed in the same way can improve the usability of translations.

In certain types of technical texts, particularly those with an instructional function, emphasis is often placed on the usability of the information as a way of measuring the quality of the texts. The same also applies when translating these documents. In the case of texts, usability refers to how easily and effectively readers can assimilate and act upon information that is presented to them in texts. While there are various ways of improving the usability of texts such as using diagrams, structuring chapters in particular ways, including examples and even things like using different fonts and page sizes, translators are restricted to strategies which we can implement during the writing stage of the translation process. This is because many of the strategies for improving usability go beyond the traditional role of the translator and are more commonly associated with the work of technical writers.

However, we can improve the usability of texts by implementing a strategy known as Iconic Linkage (IL) (Byrne 2006). This strategy involves reducing the number of ways in which the same information is presented in a text. It takes the idea of parallelism - using grammatically parallel structures for parts of a sentence which are similar in meaning - and expands it to include matching sentences and phrases throughout an entire text, not just those which are in close proximity. So, as the following examples show, if the same information is presented three times in the source text, but each time using a slightly different wording, instead of replicating the slight differences for each of our translations, we pick one single translation and use it for all three of the ST sentences.

■ *Always exit the application before disconnecting the storage device from your PC.*

■ *The user must never remove the unit from the system without first closing the associated program running on the PC.*

■ *To safely remove the drive, you must first close EasyUSB.*

Research has shown that this strategy can significantly improve the effectiveness of texts (Byrne 2005). It does this by minimizing the amount of cognitive effort and problem solving needed in order to understand a text. Additionally, by using consistent wordings repeatedly, IL improves predictability and aids learning by taking advantage of the human tendency to form habits (Byrne 2006:172-174). In any case, it is nearly always a good idea to translate the same information in the same way because it improves clarity, aids learning and comprehension, and looks more consistent and professional. It also has a knock-on effect if the text being translated is going to be used as a pivot or relay translation because the TT becomes the ST for another translation activity. In such cases, Iconic Linkage makes the use of translation memories more effective thanks to the increased repetition the text contains.

7.8. Clarity, readability and usability

Making sure that your audience can read and understand your translations easily.

Even though it has been said several times already, it is worth restating that the primary purpose of technical texts is to communicate information clearly. In the case of translations this means that, in addition to ensuring that we produce texts which are factually accurate, we must also produce texts which the intended audience will find easy to read.

The clarity and comprehensibility of texts has traditionally been assessed by measuring their readability using methods such as the Flesch Readability test, the Lensear Write Formula, the Fog Index or Fry's Readability Graph. Many of these methods involve analysing a sample of text on the basis of factors such as the total word count, average sentence length or number of "hard" or polysyllabic words. In many

versions of Microsoft Word, the spellchecker also allows you to measure the readability of texts using the Flesch Reading Ease test or the Flesch-Kincaid Reading Level test. The former measures readability on a scale from 0 to 100, with a higher score indicating a more readable text. The latter takes the 0-100 score from the Flesch Reading Ease test and maps it onto a US school grade level or a general indication of the number of years of education needed in order to understand a text. So for example, a score of 8 means that the text can be read by an average 8 th grade student so the lower this number, the easier the text is to read.

As a general rule, you can make texts more readable by keeping sentences as short as possible and by using simple sentence structures and words. But while readability is a useful measure of the general accessibility of a text, it does not provide a complete picture of how comprehensible and effective a text is. In recent years, the emphasis in technical communication circles has shifted towards usability because a readable text is not necessarily a good text and such a text may not necessarily help readers or fulfil the text's intended function.

In the context of documents, usability can be regarded as a measure of how well a given reader can read a text, understand it and perform the required task or remember the required information effectively and efficiently, and of how satisfied or stressed the reader is afterwards. What this means is that a text must provide readers with the right type of information, in the right proportions, at the right time and in the right format. The text should be easy to understand and should either allow readers to do something, help them avoid making mistakes or help them to remember particular information. Finally, the process of reading the text should not be unduly taxing or stressful on the reader. Unfortunately, measuring usability, particularly that of texts, is a complex task and certainly not something a translator can do but there are, however, a number of strategies which can make texts more usable.

■ Use terminology consistently and avoid polysemy: Do not confuse readers by using different terms to refer to the same thing or concept.

■ Use clear and simple language: The reader's attention should be on what you are saying, not how you are saying it, so avoid the urge to write like Shakespeare.

■ Write instructions in chronological order: Many users will perform actions as they read the instructions, so make sure that you put each step in the order in which it needs to be performed.

■ Use direct, active language: Passive sentences can be unnecessarily vague and lengthy; Speak directly to the user to avoid confusion.

■ Do not provide unnecessary information: In instructions for example, readers are only interested in performing a task, so they do not need lots of unnecessary detail; avoid overusing exploitation as a translation strategy.

■ Implement Iconic Linkage: Wherever possible, use the same wording to convey the same information.

■ Keep the number of tenses to a minimum: Avoid overusing some of the more complex tenses. In many cases you can survive with just the simplest of tenses.

7.9. Editing and proof-reading

Making final quality checks and improvements before you submit your translation.

A golden rule of any type of translation is never return a translation without first running a spellchecker and reading through the text one last time to spot and fix any errors. It is important that you read the text as well as use the spellchecker because a spellchecker will only find words which are spelled incorrectly, not words which are spelled correctly but which are the wrong words. Your spellchecker will not see a problem with the phrase "wit hall" even though you meant to write "with all".

7.9.1 Reviewing the work of another translator

Often, particularly on important or high-profile projects, translation agencies and customers may recruit one translator to translate a text and another to revise the translation. Usually such texts are destined for publication or some other purpose where

the very highest standards are needed. From time to time, you may be asked to edit the work of a less experienced translator and provide feedback. This is what Louise Brunette (2000) calls "didactic revision". In such cases, you may also be required to fill out a report or evaluation form but more about that in a moment.

When editing another translator's work the main thing to remember is that you are being asked to look for and fix errors in the translation, not rewrite the translation so that it looks like one of your translations. The objective is to make sure that all of the information has been translated correctly and accurately, that the correct terminology has been used consistently, that the style of language is appropriate for the text type and audience and that various other factors such as spelling, orthography and punctuation are all correct. You should not replace something which is correct simply because you prefer a different phrasing or term.

Providing feedback on translations can be a challenging and time-consuming activity. Not only do you have to find errors and fix them, but you also have to provide suggestions to help the translator avoid making the same mistakes and give an overall evaluation for the client. It is important that you remain objective and simply state the facts. Remember that a real person will read your comments so they need to be useful, constructive and tactful. You should also remember that some agencies will try to include the feedback as part of your standard fee for editing even though writing the report can take longer to do than it did to edit the translation. Make sure you charge for all of the work you do, not just the editing, and agree on a rough estimate in advance.

Lecture 8. Pitfalls, Problems and How to Deal with Them

This lecture builds on the general approaches outlined in the previous chapter to examine specific features, challenges and problems which arise in technical documentation. These will include areas such as terminology, language constraints and register, as well as practical issues such as knowing when to contact the client, what to do with confusing or inaccurate source texts, and even how to manage your files in a

translation project. By the end of this lecture, you should be able to identify the main features of technical documentation and then select an appropriate strategy in order to produce an effective translation.

8.1 Abbreviations and acronyms

Alongside specialized terminology and numbers, acronyms and abbreviations are among the most attention-grabbing and potentially intimidating aspects of a technical text for translators. The primary motivation for using acronyms and abbreviations is brevity and to avoid repeated use of the same words. Abbreviations and acronyms are very useful in many cases but they can pose problems for readers and translators alike, depending on their nature and the context in which they are used. We can group abbreviations and acronyms into a number of categories:

■ International Organizations, such as NATO (North Atlantic Treaty Organization), EU (European Union), WHO (World Health Organization)

■ National Organization, ICTU (Irish Congress of Trade Unions), BSI (British Standards Institution),

■ Name of Companies, such as ICI (Imperial Chemical Industries), RENFE (Red Nacional de Ferrocarriles Españoles)

■ Transfer : If the acronym is sufficiently well known you can retain the original SL acronym in the target text

■ Reconstitute: Translate the full name into the TL and use this as the basis for creating an acronym in the TL. This strategy is more suited to non-specialized acronyms, general texts or ad-hoc acronyms

■ Define : If there is no way of transcribing or reconstituting the SL acronym, if it is not possible to reconstitute the acronym or where it makes more sense in the text to explain the acronym, you can replace the acronym with a definition. This is quite a useful method for rendering Latin abbreviations and acronyms into language where Latin is not used or is unknown.

■ Combine: A combination of the transfer and definition strategies. This will usually only need to be done once in a text when the acronym is first used; afterwards, the SL acronym can be used on its own.

■ Write out SL: A much less common approach which involves replacing an acronym with its full name in the SL. This approach would be appropriate in higher level texts where the target audience is familiar with or interested in the source culture and language.

■ Translate: If an official or widely used translation of the full name exists and there is a corresponding acronym, they can be used instead of the SL acronym.

Practical Exercise: Identifying organizations
Compile a list with the names of 20 international and national organizations. Now find out what these organizations are called in different languages and whether there are any acronyms or abbreviations associated with them.

8.2 Formulae and Equations

Thankfully, in the vast majority of cases, any equations which appear in a text do not need to be modified by the translator; they are simply left untouched. It is useful to know, however, that equations can be presented in a number of different ways. This

will assist us in recognizing information which is presented in a different form and help us understand the text.

One of the things that make algebra so powerful and useful for scientific and technical work is the ability to "rearrange" formulae so that another variable is the subject. At the same time, this ability can make formulae potentially more confusing for the unsuspecting translator. A practical example would be using the formula for calculating the volume of a box (V = wdh) to calculate the width of the box provided we know the volume, depth and height of the box. This would be done as follows:

■ *V = wdh*
where: V = volume, w = width, d = depth, h = height
■ *divide both sides by d: V/d = wh*
■ *divide both sides by h: V/dh = w*
■ *swap sides: w = V/dh*

Although it is safe to say that a translator would never have to do this, knowing how equations can be manipulated can make texts a little easier to follow.

Equations are often included in texts as images and this means that even if we wanted to edit them, we would not be able to without using graphics editing software. Equations can also be inserted using special characters in word processors (such as those found in Microsoft Word), using ASCII codes or using tools such as Microsoft Equation Editor. For this reason, it is a good idea to learn how to insert these characters on your own computer and using your own software in the event that a sentence contains one of the symbols contained in the equation. This is also important if you are given a hardcopy of the source text instead of an electronic version.

8.3 Product names

Translating product or brand names takes up the time and energy of whole sections of the translation and marketing communities, and with good reason. There are countless urban legends recounting translation disasters involving the translation of Coca Cola into Chinese (reportedly translated, depending on the source, as "bite the wax tadpole" or "female horse stuffed with wax") or Ikea's Fartfull workbench, so the potential for embarrassment is clear. Texts may refer to products or services by brand name only and this can present challenges for the translator. Consider the following examples:

- *Microsoft SharePoint*
- *Adobe InDesign*
- *Kia cee'd*

The software names SharePoint and InDesign appear to be missing spaces between their constituent words while cee'd features an unusual use of the apostrophe and a missing initial capital letter. Despite the apparent errors, they should never be modified as they are proper names, part of the product's identity and, perhaps more importantly, central to the copyright protection of the product (copyright protection for brand names is based on a particular spelling or orthographic presentation of a word, so beware!).

In certain types of texts, references may be made to particular brands or materials. For example, a scientific paper on vascular surgery may refer to a particular brand of stent or catheter which was used during an operation, or a car instruction manual may refer to a specific brand of antifreeze to be used in the engine. These product are usually mentioned for a particular reason so you names should not change them. Simply transfer the names over to your target text without modification.

In other types of texts, if specific products are mentioned which are internationally recognized or available in the target country, all you need to do is transcribe the product name exactly as it appears in the ST. However, if the particular brand is non-existent or relatively unknown in the target language culture you may have a problem. The instinctive solution might be to replace the SL brand name with a comparable TL brand name, if one exists, but this may be just as problematic as leaving the SL brand name in the target text. This is because the two products, although similar and possibly identical in most aspects, may have different characteristics, properties or chemical compositions which, in the case of a chemistry paper, could have significant implications for the repeatability or even safety of the study.

The precise nature of the text and the needs of the target audience will naturally affect how you deal with this situation. In specialist texts where the precise characteristics of a product are important, one of the safest ways of dealing with brand names which do not exist in the TL is to reproduce the brand name and accompany it with a brief phrase describing its function.

In general texts, the specific brand name is not necessarily as important and you can, in principle, replace the brand name with a comparable product or, ideally, a generic description. It is essential, however, to do your research. If the source text recommends, for example, Cleanio for cleaning the screen of a television, you will need to find out a little more about this product before replacing it. For example, if Cleanio is a leading surface cleaner which does not contain bleach, you cannot replace it in the TT with Sparklette which does contain bleach because the bleach may damage the surface of the television.

Strategies:

■ Retain: Always write product names the same way regardless of whether it looks funny, ungrammatical or just plain wrong.

■ Replace: If you do need to substitute an equivalent product name in the TL, make sure it really is comparable. Also, to avoid giving the impression of an endorsement of the product by the client, qualify the reference by saying "such as"

■ Remove: A less problematic approach, if the specific product name is not absolutely essential, is to replace the product name with a generic description.

8.4 Contact details

The issue of contact details may seem like an unusual thing to talk about, especially in relation to technical translation, but they can present difficulties for translators, clients and readers if they are not handled with care. Many texts include contact details of some form or another and these usually include the name of a contact person, telephone and fax numbers, an email address and a website address.

In the case of contact names, if there is no title (such a Prof, or Dr.) and no indication of the gender of the person or if the name is unlikely to be recognized by a target language reader as belonging to a male or a female, using Ms. or Mr. is a useful way of helping readers avoid addressing women as Mr. and men as Ms. Admittedly, this is not an essential change but it does constitute a "value added" service for customers and it can spare readers' blushes.

Email addresses can be a source of confusion where they do not consist of a person's name. Imagine a van maintenance text, for example, contains the following email address

■ *van.queries@quimby.com*

It is possible, depending on the target language, that speakers of the target language will not recognize that this is not the name of a person and may send emails which start "Dear Mr Queries" or "Dear Van Queries" thinking that it is a person's name. If a well-meaning but misguided translator decided to translate the email address in

order to avoid this problem, emails will bounce back because that email address does not exist.

The same applies to website details contained in the text. If they are left as is, there is a risk that the reader may visit a website in the wrong language. But if the translator takes the initiative and replaces the website with the address of another language version of the site, readers may either be brought to a site with the wrong information or information in the wrong language.

In such cases, all a translator can do is leave the email or web addresses alone but notify the client of this when the translation is submitted along with some suggested translations if they decide to do the sensible thing and follow your advice. Again, while this is not an essential change it does constitute a "value added" service for customers and helps them create a more polished image.

Telephone numbers are frequently overlooked by translators but they deserve closer attention. When texts are produced in one country, they are often formatted for readers in that country. However, when texts are translated they are destined to be read by readers outside the source country. As such, telephone numbers should be formatted to include the international dialling codes to prevent confusion and to save readers having to find these codes for themselves. You might also want to identify mobile telephone numbers because callers may incur substantial international call charges without realizing it.

Strategies:

■ Personal names : Add the title Mr. or Ms., especially if it is unlikely to be clear to the target audience whether the person is male or female.

• Email addresses: If the email address consists of something other than a person's name, suggest a translation to the client but do not change the email address in the text.

■ Websites : As with email addresses, never change them yourself but advise the client if a specific web address points to content in a foreign language and suggest providing a suitable target language link.

• Telephone numbers: Convert all telephone numbers to international format with international dialling codes and prefixes. For example: the Irish telephone number 051-1234567 should become +353-(0)51- 1234567.

■ Postal addresses: Do not assume that, just because you are familiar with the source language country and its geography, the people reading your translation will be too. This is particularly true of smaller towns and cities so, if a document provides an address but does not identify the country, consider adding the country to the address or, where appropriate, add the international country prefix to the post code, for example LT-03500 Vilnius for an address in Lithuania or B-1000 Brussels for an address in Belgium.

■ Culture-specific examples will need to be replaced with scenarios and examples which are familiar to the TL audience.

■ Language-specific examples may involve significant adaptation in order for them to be comprehensible and acceptable for the target audience.

It may be necessary to translate very loosely or even to create entirely new examples altogether.

■ Like culture-specific examples, context-based examples which relate to a particular situation or context, e.g. geographical, commercial, external factors, should be replaced with corresponding TL culture examples or modified to comply with the TL environment.

• Examples which are constrained by technical factors, either within the text or outside the text are usually quite straightforward as the technical context will probably remain the same, unless there is an element of language-specificity as is the case in the postcard example. Normally, only minimal modification should be necessary unless different technical regulations apply.

Lecture 9.

Conveying the names of companies, corporations, British/American publishing houses.

1. Traditionally, most names of companies (corporations, firms, etc.) are transcribed or transliterated and shortly explicated at the same time. This method is also employed when rendering the names of publishing houses, titles of most newspapers and magazines or journals, and of some public bodies. The translation may be performed either with the employment of a shorter or more extended explication. The former is practised when the name of the company (corporation, firm) is well-known or when translating at the language level; the latter is resorted to when translating at speech/text level:

Associated Biscuit Manufacturers - англійська компанія по випуску хрустких коржиків «Ессошіейтед біскіт менюфекчереpз;

T.Wall & Sons Co. Ltd. - англійська компанія по виробництву м'ясомолочних продуктів і морозива «Т. Волл енд санз компані лімітед»,

but:

General Motors/Standard Oil - корпорація «Дженерал Моторз/Стандард Ойл».

Ukrainian companies, firms and other state and private bodies performing the same or similar functions are translated according to the same rule (they are transliterated or transcribed and explicated at the same time). For example:

Київська фірма «Світанок» - Kyiv Svitanok civil services firm;

виробниче об'єднання «Краснодонвугілля» - «Krasnodonvuhillya Coal Production Amalgamation;

Укргазпром - Ukrainian Ukrhazprom natural gas importing and extracting body; «Київоблпобутрадіотехніка» - Kyiv region Kyivoblpobutradiotekhnika home radio engineering services body (firm);

акціонерне товариство «Білицька меблева фабрика» - *Bilychi Joint-Stock Furniture Factory Association;*

CD «Вента» (парфуми та косметика з Болгари) - *Bulgarian Venta Joint Venture (perfumes, makeup);*

Львівська взуттєва фірма «Прогрес» - *Lviv Prohres footwear firm.*

2. Translation of the names of British/American publishing houses is performed according to the same rules:

Associated Book Publishers - *лондонська книжково-видавнича фірма «Ассошіейтід бук паблішерз»;*

Cambridge University Press - *англійське видавництво наукової та довідкової літератури при Кембріджському університеті «Кембрідж юніверсіті прес»;*

Edward Arnolds (Publishers) Ltd. - *лондонське видавництво навчально-педагогічної та наукової літератури «Едвард Арнольдз (паблішерз) лімітед»;*

Harper & Row (USA) - *видавництво різної літератури «Гарпер енд Роу» (США).*

Not infrequently, however, the names of British (American, etc.) publishing houses are scarcely indicated or not mentioned at all. Nevertheless in Ukrainian translation the identifying noun *видавництво* should necessarily be added:

Penguin Books - *лондонське видавництво «Пенґвін букс»;*

Raphael Tuck & Sons Ltd. - *лондонське видавництво літератури з образотворчого мистецтва «Рафаель Так енд санз лімітед»;*

J.M.Dent & Sons Ltd. - *видавництво підручникової та довідкової літератури «Дж. М. Дент енд санз лімітед»;*

Slavic Gospel Press (USA) - *американське видавництво Біблій слав'янськими мовами «Славік Ґоспел Прес»;*

Randon House (USA) - *видавництво художньої літератури «Рендом Гаус» (США);*

Rand McNelly (USA) - *видавництво шкільних підручників «Ренд Макнеллі» (США);*

Beacon Press (USA) - *американське видавництво підручників «Бікон Прес».*

Names of Ukrainian publishing houses are rendered into English similarly: with the corresponding identifying noun Publishers or Publishing House added to it: *видавництво «Український письменник» /»Дніпро» Kyiv/ - Ukrains'kyi Pysmennyk/Dnipro Publishers (Publishing House);*

видавництво «Музична Україна» - Muzychna Ukraina (musical works and notes) Publishers/Publishing House;

видавництво «Школа» - Shkola/Skola Publishers/Publishing House (primary and secondary school manuals, reference books, dictionaries);

видавництво «Либідь» - Kyiv Shevchenko University Lybid' Publishers (scientific literature and higher school manuals).

Special attention should be paid to the translation of the names of institutions, enterprises, geographical objects, etc., bearing honorary names. In English the honorary name precedes the enterprise/body, which bears it, whereas in Ukrainian/Russian it always follows the name of the enterprise/body:

Humboldt State College - Державний коледж ім. Гумбольдта;

George Washington Library - Бібліотека ім. Джорджа Вашинґтона; Lafayette/Longfellow College - Коледж ім. Лафаєтта/Лонґфеллло;

бібліотека ім. Котляревського - the Kotlyarevskyi library;

Національна бібліотека України ім. академіка Вернадського - Ukrainian Academician Vernadskyi National Library.

Note. Names of literary and scientific/peace prizes are mainly translated in two ways - with the preservation of the name which the prize bears or with the transformation of the noun into a corresponding relative adjective:

Nobel Prize - Нобелівська премія (премія імені Нобеля);

Pulitzer Prize - Пулітцерівска премія (премія ім. Пулітцера);

Taras Shevchenko Prize - Шевченківська премія (премія ім. Т.Г. Шевченка); Rylskyi Translation Prize - перекладацька премія ім. Максима Рильського.

Care should be taken to avoid the stylistically unjustified expression «named after» which is to be used only in explanatory versions, as in the sentence «After Ukraine's gaining independence many state institutions were *named after our most prominent patriots* Hrushevskyi, Vynnychenko, The Heroes of Kruty, Petlyura, and many others.» Hence, the Lviv V.Stefanyk library, the Symyrenko Horticultural Research Centre and never «the named after» Symyrenko Horticultural Research Centre or «the named after» V.Stefanyk Lviv library. It must be repeatedly emphasized that the placement of the honorary name in English translations is strictly predetermined and can not be changed deliberately unless required by the speech situation (style) and content.

Lecture 10

MACHINE TRANSLATION, TRANSLATION MEMORY AND TERMINOLOGY MANAGEMENT

PLAN

1.Introduction

2. Translation recycling technology

3.Workflow

1.Introduction

Machine Translation (MT) is the use of computer software to translate from one natural language to another. Translation Memory (TM) offers the translator suggestions from previously translated material. Terminology can be integrated with both these technologies and the better the integration, the better the quality of the target translation. Both MT and TM approach terminology management from a similar perspective. They aim to give access to the right target language term promptly and ensure that the translator can

do this with a great degree of confidence. While the translator may be generally interested in the same issues as the terminologist, the translator's main goal is usually quick access to the right term without too much extra research work.
We will examine MT and TM technology in relation to terminology management and the current practice in this field.

2. Translation recycling technology

The diagram in Figure 1 represents a simplified view of the currently available translation recycling technologies. By translation recycling we mean a technology which offers Machine translation, translation memory and terminology management re-use of previously

translated content.

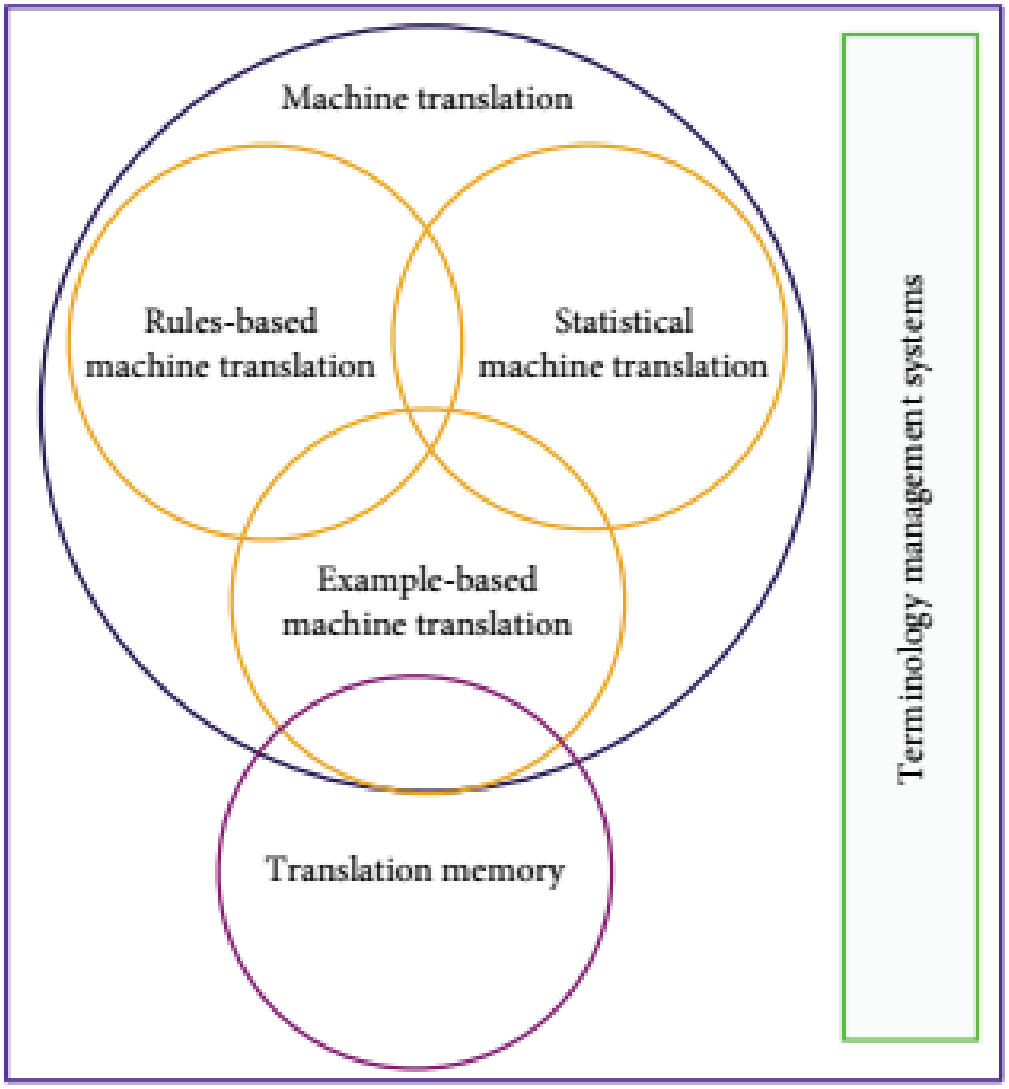

Figure 1. Translation recycling technology

MT was introduced in the early 1950s and there has been a lot of research and work done in this area. There are many different types of MT technology. These are: 1. *Rule-based Machine Translation* – which uses linguistic information about the source and target languages such as grammar and dictionaries for MT;

2. *Statistical Machine Translation* – which is based on information theory and uses statistical models to determine the translation output;
3. *Example-based Machine Translation* – which is based on using matching bilingual corpora where the software recognizes which sentence in one language corresponds to which sentence in another.

TM and MT are often presented as two completely different technologies. However, TM actually derives from the example-based translation methodology. Both these technologies are based on the same core idea of aligned segment or aligned documents if it is corpus based. They also use some of the same methods for aligning and retrieving text. Where they differ is that example-based MT takes a document and automatically translates it, while TM technology supports the translator who decides what goes into the translation. Another difference is that with TM there is more likelihood of the translator creating the TM himself, and therefore being more confident about the quality of the TM because he knows the source.

3.Workflow

The diagram in Figure 2 illustrates a typical workflow where a translator uses terminology with TM. This workflow is not intended as a model but as an example of how to approach using terminology with translation recycling technology. The workflow is divided into three sections:

1. Project setup;
2. Translation;
3. Quality assurance (QA) and delivery.

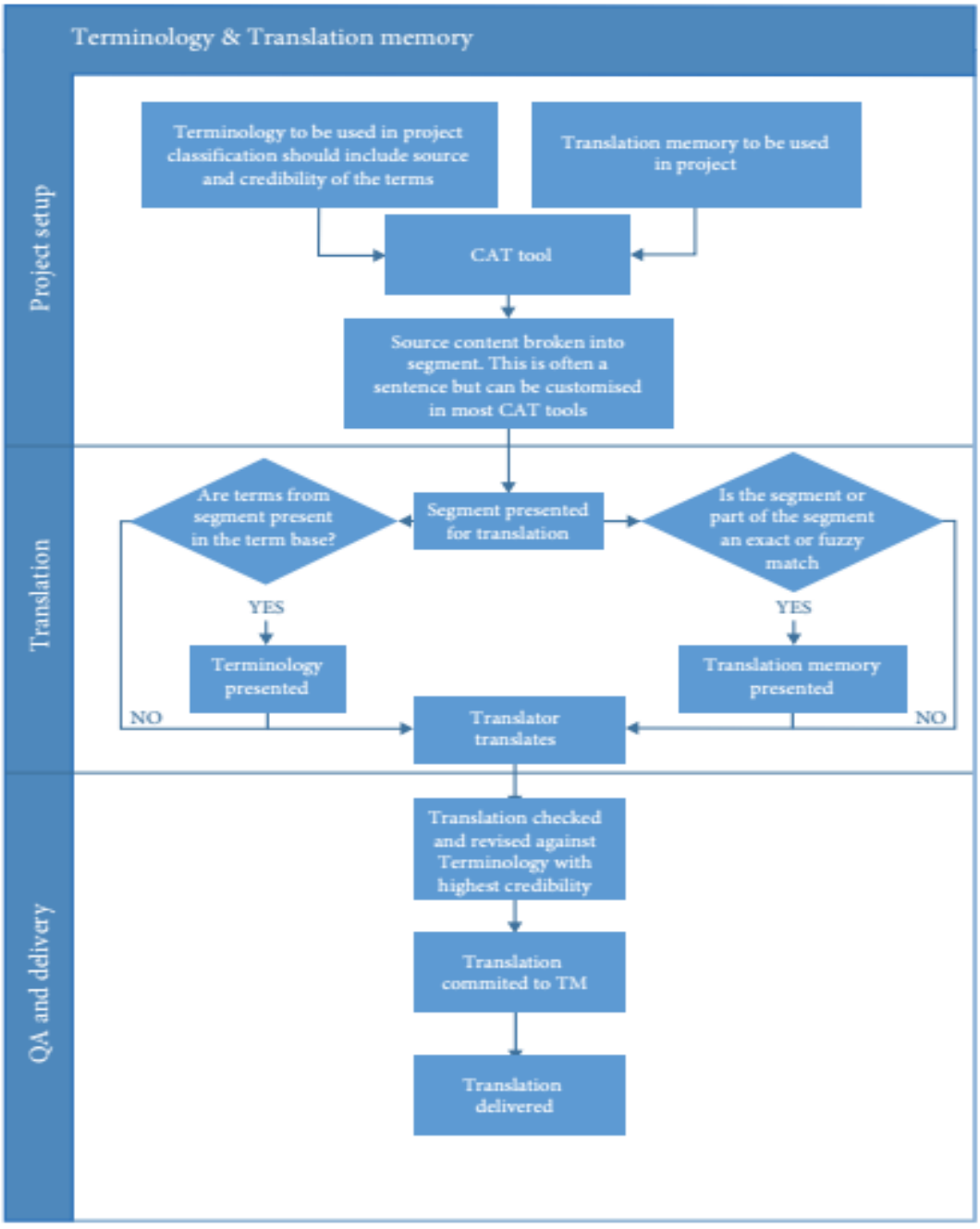

Figure 2. Translation and terminology workflow

3.1. Project setup

At the project setup stage either the translator or the project manager decides which TM or memories should be used and which terminology should be used for a given project. The majority of TM tools have a functionality which allows the translator to see results from TM and terminology which correspond to the source text segments and terms being translated. When the text is loaded in the TM tool it is broken down into smaller chunks called segments which the translator translates.

3.2 Translation

The TM then presents a series of consecutive segments for translation. The tool checks the currently highlighted segment and suggests results from the TM and terminology data base in the translation results window. When there is a conflict between the results from the TM and the terminology, the translator should have enough experience and competence to select the appropriate translation segment or term.

3.3 Quality assurance and delivery

Following completion of translation, the translator should then perform a terminology quality assurance check on their translation. The corrected translation should be the basis for updating the TM at the end of the project.
There are several diffrent possibilities for a translation process which supports the delivery of high quality translation.
One important point is that not all terminology should be treated in the same way. If the terminology comes from the client it should be treated as more reliable than

that which is stored in the TM. However, if the TM is from a very credible source and known to be reliable, the translator should use this instead of terminology from less credible sources. The diagram below shows how terminology could be classified on the basis of credibility status.

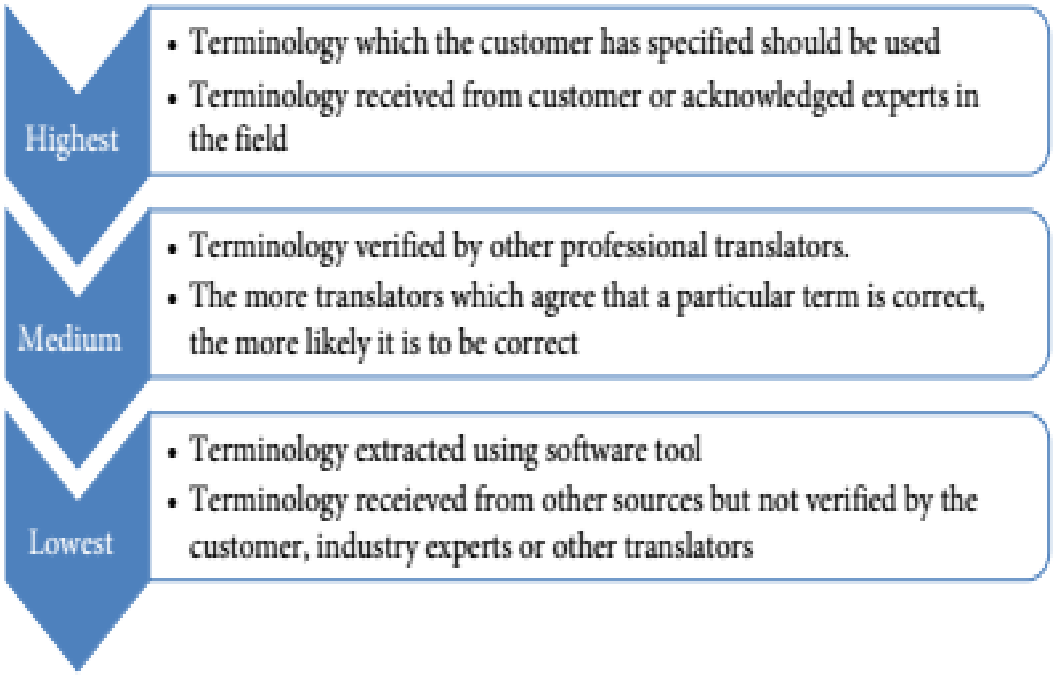

Figure 3. Terminology credibility

There are a number of important elements which should be considered when analyzing any translation process, in particular:
1. The translator should know what the credibility of the terminology on offer is;
2. It should be possible to ascertain if the TM is consistent with the terminology;
3. The translator should have access to both the TM and terminology corresponding to the segment being translated in the translation results window while he works;
4. The translator should be able to check the final translation and the TM against the

terminology data base.

3.4 Process involving machine translation

There are two ways in which MT is being used today. The TM tool can be integrated with an MT engine and the suggested translation for the highlighted segment can appear in the translation results window. The translator would use the MT input in the same way as he uses the TM input and he would decide which to use every time. The other possibility is for the document to be machine translated and then edited and corrected. The second method is usually the result of the need to reduce the cost and increase the turn around. Ensuring that correct terminology is being used is an extra step that adds to the cost and increases the time it takes to complete a translation project. In this MT process the terminology work is done prior to translation. If there are any terminological errors at the input, they will be reproduced throughout the process.

Mike Dillinger sees MT as an aid to the translator. He recommends a process whereby the translator first translates the known terms in the document in an automatic or semi-automatic fashion. The document is then processed using MT and post editing. This process is illustrated in Figure 4.

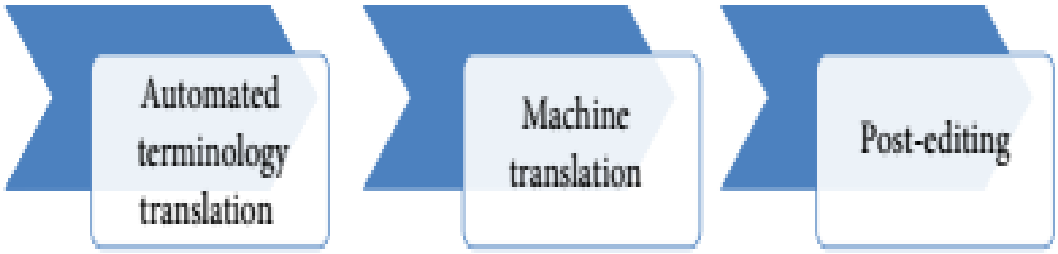

Figure 4. Terminology used with machine translation

The errors which are generated by the MT engine will be consistent and the translator will find that he will encounter the same errors after each MT cycle. Most MT engines offer a functionality that makes it possible to update or re-train the MT engine based on the results of the post-editing. This stage will include making any corrections to the terminology.

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- ресурси Інтернет:

http://www.press.uchicago.edu/Misc/Chicago/cmosfaq.html (правила

бібліографічного оформлення цитованої літератури, інформація про інші корисні для авторів письмових творів сайти);

http://www.gsas.harvard.edu/academic/fellowships/essays.html (поради щодо написання дослідницьких проектів);

http://www.staffs.ac.uk/services/library_and_info/reference.html (різноманітні віртуальні довідники — словники, енциклопедії, списки скорочень, популярні цитати та ін.);

http://www.wisc.edu/writing/Handbook/AcademicWriting.htmI (довідник з наукового письма в різних галузях);

http://www.kamts1.kpi.ua/sites/default/files/files/shchypachova_peculiarities.pdf

https://benjamins.com/catalog/ata.vi

http://jctranslations.blogspot.com/2010/04/scientific-vs-technical-translation.html

- навчальні посібники, довідники, методичні вказівки з дисципліни «Основи науково-технічного перекладу»

Методичне забезпечення

Висоцька Тетяна Миколаївна

ОСНОВИ НАУКОВО-ТЕХНІЧНОГО ПЕРЕКЛАДУКОНСПЕКТ ЛЕКЦІЙ

для студентів спеціальності 035 Філологія

Електронний ресурс

За редакцією укладача