

Module : TCE

Class : 1st year

TOP SCIENTIFIC TRANSLATION TECHNIQUES

Scientific translation is the translation of scientific texts, thus a special knowledge will be required. These texts require a deep knowledge of both the source and target languages, as well as a proper understanding of the subject. Scientific translators are often trained linguists that specialize in fields such as medicine, biology or chemistry. Sometimes they are scientists that have developed a high degree of linguistic knowledge, which they apply to the translation of texts in their field of expertise. Collaboration between linguists and subject specialists is really common in this case. In this article, we will explain you some of the best scientific translation techniques.

BE CLEAR AND CONCISE

Clarity and concision are the main stylistic goals of scientific translation, which must convey the exact meaning of the original text. Ambiguities and unclear constructions are characteristics of the literary texts and must not be found anywhere in scientific translation. This is the hardest task in scientific translation. Finding the right words can be a struggle sometimes and it can also create repetitiveness in the text, as synonyms of certain words can be rather ambiguous and more suitable for literary work. Avoiding repetitions can sometimes be extremely hard. This is why the translator must have a scientific background that allows her or him to play with the terminology without changing the meaning of the text.

KEEP AN EYE ON THE MISTAKES IN THE ORIGINAL TEXT

What is also really common among scientific translators is their ability to correct the small mistakes in the original text, as they will be the persons that will read the document most attentively. Common mistakes in scientific work include: inconsistencies between numbers listed in tables, accompanying diagrams showing something else than they should or tables referred to by non-obvious symbols. In this case the translator is advised to correct such mistakes in brackets or footnotes.

PLAY WITH STRUCTURE AND MEANING

If the syntactic and lexical features of the language differ, it is sometimes necessary to completely recast certain sentences. For instance, highly inflected languages such as Russian and German can string together long chain of

independent and dependent clauses with many referents and antecedents and still keeping the whole meaning clear. On the other hand, this would be impossible in English for example. In this case, the translator will have some work to do in terms of structure and meaning. This is one of those times when keeping the sense of a sentence intact can be a real challenge. [One of the best techniques to use in these cases is paraphrasing](#), namely a restatement of the meaning of a text or passage using other words.

BE AN AVID READER

In order to create a flawless scientific translation, the translator must be as informed as possible. Reading the latest books and academic journals helps you improve your translation skills. Firstly, you get used to the terminology and with the style of this type of work. Secondly, you will be up to date with the latest scientific researches and discoveries, which helps you understand more easily the concepts that you are supposed to translate. You can even create a blog about scientific translation, scientific researches and events. You can write articles or take existing articles and then translate them in the other languages that you know in order to gain more experience (remember to ask permission in order to avoid copyright infringements). This is a good idea particularly for beginners that want to specialize in scientific translation. Remember that the more you specialize in niches and sub-niches the easier it will be to research, write and become an expert.

PAY ATTENTION TO NUMBERS AND SYMBOLS

In science you will come across a lot of numbers, formulas, diagrams and symbols, which must not be ignored in the process of translation. The sense of a whole page or even chapter can be altered if the translator adds the wrong number or symbol. To avoid this, he must understand very well the topic. Afterwards, he must pay a lot of attention to all the little things. This requires patience and analytical skills, qualities that are indispensable for a scientific translator.

ALWAYS PROOFREAD YOUR TRANSLATION

At the end of your translation, you should always proofread the texts yourself first and then ask a second translator to proofread your work as well. Ideally, ask other translators who have experience in the field. This way, all the mistakes that you did not notice will be corrected. In case some concepts from the original text are really unclear to you, you can communicate this to the author (if possible) or with the client. It is always better to ask for clarifications, than leaving your work unclear.

ADAPT YOUR STYLE TO THE TYPE OF DOCUMENT

In science, you will come across different types of documents that require different degrees of formality. If you are translating academic work, you will need to find a very elevated style with complex phrases and less common words. On the other hand, if we are talking about manuals or drug instructions, the translation must be less formal. This type of documents is going to be read by normal people or beginners in the field of science. This is why the language must be more accessible and easy to understand.

In conclusion, scientific translation is always a challenge. The translator must keep up with the constant changes in this field. She must be a scientist or she must read a lot and get as much information about the topics that he is going to translate. The style of a scientific translator must be very clear and concise. The level of formality differs according to the type of documents he has to deal with.

- Scientific translation is not like other translations, it goes beyond just rendering words from one language into another. It is rather considered a tool that helps people around the world develop and progress in the field of science. Thus a translator needs to ensure an accurate delivery of information and shows faithfulness and commitment to the source and the target language, so that the translated information can be used easily and help in developing other countries.
- One of the main problems that translation trainees may face is how to deal with translating scientific terms from English into Arabic, and in choosing the best method to achieve a high- quality translation of those terms which may enrich the Arabic language.

Scientific versus Literary Contexts

- By setting off scientific against the literary translation, their characteristics and the problems that are likely to be encountered in each, become more salient as illustrated below

<u>Scientific Texts</u>	<u>Literary Texts</u>
- Logicity.	- Lack of argumentative progression.
- Precision.	- Vagueness.
- Reason.	- Emotion.
- Truth to particular reality.	- Truth to the ideal.
- Generalization.	- Concretion.

- Referential meaning.	- Emotive meaning.
- Denotation.	- Connotation.
- Lexical affixation.	- Grammatical affixation.
- Idiomatic expressions are rare.	- Idiomatic expressions are frequent.
- Use of abbreviation, acronym, and registers.	- Very few abbreviations, acronyms, and registers.
- Standard expressions.	- Almost all varieties.
- Use of scientific terminology, specialized items, and formulae.	- No use of scientific terminology, or formulae.
- No use of elements of figurative language.	- Expensive use of figurative language.

Definition of terminology

- Webster's new world college dictionary defines *Terminology* as follows:
 - 1. the terms or system of terms used in a specific science, art, etc.;
nomenclature lexicographer's terminology
 - 2. the systematic study of terms"
- On the other hand, Cambridge Advanced Learner's Dictionary defines terminology as:

"Special words or expressions used in relation to a particular subject or activity". Terminology is viewed as a structured set of concepts and their labels in a particular subject field, it can be considered the infrastructure of specialized knowledge. Technical writing and scientific papers are thus impossible without properly using terminological resources. Terminology refers to all specific terms and expressions used in a specific register as the terms: *endocrine system, cells, and hormones* which are specific terms generally used in scientific texts.

Scientific Terminology

- **Scientific terms** are not simple words; they are special and complex ones. Scientific terms are the most significant feature in science, they

discriminate it from other registers (literary). These terms make scientific texts incomprehensible for lay people; they are directed to experts of the science. Thus scientists use them to dignify their written works, in that William Zinasser (1976) explained that each jargon has its own list of terms which lay people would not understand easily. He (1976:15) wrote “Every profession has its growing arsenal of jargon to fire at the lay man and hurls him back from its walls.” Furthermore, Ilyas (1989:109) claimed that scientific terminology varies from the regular and literary words since ‘they do not accumulate emotional associations and implications’.

- Terminology is the study of terms which refer deliberately to specific concepts within particular subject fields. In other words, terms are always studied in relation to the conceptual system to which they belong and in which they function as depositors of knowledge [3].
- Neologisms can be defined as newly coined lexical units or existing lexical units that acquire a new sense [4], and although they cause a lot of trouble to translators, they are at the same time popular with both writers and readers. Moreover, finding equivalents in Arabic for technical English terms causes many problems owing to the different nature of both languages.
- These problems are likely to be manifested in the continuous development in the field of science and technology as well as the effect of mass media on people who almost, everyday, receive new ideas and innovations. Some of these problems can be identified as follows:
- First, English utilizes Latin or Greek compound morphemes to express some of these technical terms, e.g. television which is a term made up of two free morphemes *telos*, meaning remote and *vision* meaning sight or image. This compound term is used for a set that brings images from a distance, thus, denoting its function. English also encompasses terms which are built of Greek or Latin roots or combination of the two such as automobile, telephone. Experience has shown that apart from changes in orthography, scientific terms taken from Greek or Latin are admissible by the entire scientific world regardless of language.
- Arabic, in contrast, is **not** as flexible as English in either borrowing from other languages or in using compound morphemes. This could be attributable to its rigorous grammatical rules which were formulated in the medieval period.

- Second, many of these technical terms are the products of the West, i.e. they stand for products invented in Europe or America which made it easier for the inventors to name them either after their own names, or resorting to European languages instead of Latin or Greek. For instance, Watt stands for the electric current unit which is named after the person who invented this unit of measurement and the term pasteurization which refers to a method of sterilizing, especially milk, devised by the French scientist Louis Pasteur.
- Third, there is no agreement among the Arabs on the rendering of scientific and technical terms. For instance, the English term engine which is of a Latin origin has no agreed-upon Arabic term; in some parts of the Arab world it is transliterated as **موتور** and in other parts where people are reluctant to use foreign names they instead prefer to give it the Arabicized name **محرك**. However, the problem is that this term literally means a mover, a term that can be used vaguely for even a person moving something. Another example of this problem is the term mobile which has about eight Arabic equivalents: **sililūr**, **mubāyl**, **burtāble**, **maHmūl**, **jawwāl**, **hātif mutaHarik**, **khilyawī** and **naqqāl** the matter that give rise to the abundance of terms.
- Fourth, most of the foreign terms are strange and new to the Arab environment and culture making it difficult if not possible to find equivalents for every term in Arabic. For example, the term satellite causes a lot of trouble for translators; some translators opted for keeping its original Latin name **satalayit** others translated it semantically as **قمر صناعي** and recently, it has been given an Arabic term **ساتل** by the Arabic Academy in Tangeer.