

## Translation of Scientific-Technical Texts

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### ABSTRACT

Nowadays, a major amount of translation work being done all over the world is scientific technical translation. It has been estimated that technical translation accounts for some 90% of the world's total translation output each year. Scientific-technical translation is mostly considered a straight forward process depending solely on a competent knowledge of subject matter and terminology.

### ARTICLE INFO

Article history:

Received 28 Jun 2022

Received in revised form  
27 Jul 2022

Accepted 31 Aug 2022

**Keywords:** culture, language, scientific-technical texts, cultural elements, stylistic differences.

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It is widely acknowledged that translation has played a major role in the dissemination of knowledge during the ages. Jianzhong (2005,) declares that scientific and technical translation includes all the practical fields but literary translation. Williams and Chesterman (2002) hold that scientific and technical translation covers the translation of many kinds of specialized texts in science and technology, and also in other disciplines such as economics and medicine. Scientific and *technical texts*, like any other type of translation, requires a high level of competence of both languages and knowing the differences which may be cultural or non-cultural. According to Stolze (2009), cultural elements cannot be reduced to strange objects that would be unknown elsewhere but they are implicitly present in texts. According to Kastberg, therefore, the five competences required for a *scientific-technical* translator can be listed as follows:

1. General language competence L1 + L2
2. LSP competence L1 + L2
3. Knowledge of the relevant domain
4. LSP translation competence L1 + L2
5. Cultural competence L1 + L2

First, Kroeber (1964) used this title. It is taken as a given that language is the principal mode of communication for human beings. For more information about the interrelation of language and *scientific-technical texts*, it is necessary to resort to some other relevant fields such as ethnology and anthropology. According to Nida (1945, as cited in Kroeber, 1964, p.90), the linguist and ethnologist are more or less conscious of the relationship between their respective fields of research.

Texts, as the means of oral and written communication among persons, are carriers of messages. Following (Stolze, 2009 & Karimnia & Afghari, 2010), when we accept that texts function within *scientific-technical texts*, there must also be some features discernable in those texts. A key question is what are scientific elements and how are they visible in texts? Stolze (2009) holds that *scientific-technical* elements cannot be reduced to strange objects that would be unknown elsewhere. Stolze (2009) directs attentions to the fact that the translator must constantly be aware of his or her own 'hermeneutic

approach'. She (p.125) believes that understanding is "never a matter of fact but requires interpretation as the process of searching for meaningfulness." Scientific terms will be present in texts, even in technical ones. And "technology based conventions of text construction may even constitute a major translation problem for scientific communication. Detecting *scientific-technical* elements in texts therefore is decisive for translation." Following Stolze (2009), *Scientific-technical* traces in texts certainly have a specific linguistic form. Hence it is useful to present an overview of various linguistic manifestations of *technical terms* in texts. This ranges from the "word level and syntactic structures to the style on the text level, and its pragmatic social function":

One might say that since in the realm of science and technology, a set of standard terminology with predefined equivalents exists; there is no problem at the terminological level in translating scientific *technical* texts. However, International standardized terminology is very much in the minority (Stolze, 2009). The reason is that new *technical terms* concepts are being made every day. Many dictionaries suggested meanings for *technical* concepts are not equivalent to the original because of different *technical terms* implications and backgrounds. Notice the following quotation:

First of all, the number of *scientific-technical* concepts seems to grow exponentially. Secondly, the number of *scientific-technical terms* (sub) seems to be ever increasing (Kastberg, 2007, p. 2). Following Stolze (2009), different *scientific-technical terms* norms rule the structure of certain texts in different countries. Different text types and genres are the product of cultural historical situations. These lead to different types of writing. Let's Borrow an example from Stolze (2009) to make the point clearer: Court sentences in Germany show first the substance of the judgment in a sentence followed by a statement of facts and the presentation of the reasons for the decision, quasi as a justification of the sentence. Court sentences in France begin with the statement of facts followed by the reasons for the decision based on a listing of relevant articles from the code, which finally leads to the substance of the sentence. In addition, In British or American court sentences we find the accumulation of relative sentences as a typical feature of this text genre.

Different languages use different instruments and different ways for conveying information. These differences are rooted in the linguistic culture of their users and all of them have traces in a text. They can result in comprehension problems for a translator unacquainted with these unique features. So, a transparent translation is needed that can give presence to the new text and make intelligible the cultural differences which nonetheless are implicit in the message. (Stolze, 2009) After analyzing the selected texts, the researcher identifies some linguistic manifestation as the cultural differences in English. However, the determined differences cannot be regarded comprehensive and all-inclusive. In other words, it is possible to add some other cases of cultural differences to each heading.

Regarding cultural implication in Pragmatics the researcher could not find hints of differences. However, following Stolze (2009), pragmatics refers to sender and receiver of a text message and, therefore, is also part of the text itself. In pragmatics traces of cultural differences can be found implicitly. Examples of this kind of differences can be found more in texts dealing with social procedures, legal structures, etc.

As instances of language use and human activities, scientific and *scientific-technical* texts are not culture free (a cultural). The presence of *scientific-technical terms* is traceable in the elements of the texts. Thus, scientific and *scientific-technical terms*' translation, like any other type of translation, requires a high level of competence of both languages (SL and TL) and knowing the differences which may be cultural or non-cultural. For a scientific and technical elements' translator to be successful it is better to pay enough attention to differences between languages and make shifts where necessary. Cultural differences in scientific and technical texts may be found in technical terminology where the meaning dimensions may be distant. At the level of grammatical structures, *scientific-technical* differences show themselves in preferences between different structures although word for word (literal) translation may not be wrong. More importantly, the overall text structure is different in different countries and ignorance of this would at least reduce the effectiveness of translation or have negative side-effects. Misunderstanding would be the first negative result of such ignorance and this is dangerous since the intention of scientific and technical prose is mainly informing the user (or reader) about facts. This is just a matter of preference and has to be observed in translation. Further research would show whether differences of this kind exist in other language pairs or not.

Out of the researcher experience, syntactic and stylistic scientific-*technical elements translation* differences could be called the most deceiving parts of a text for translation. They have the most frequency among others. Each of the three other maxims of Terminology, Language Form, and Text structure accounts for about 10% of differences between the two languages. Further examination of differences between original texts and their translations as well as comparing original scientific-technical texts in different languages would shed more light on cultural differences in scientific-technical translation.

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