CHAPTER II
THEORITICAL REVIEW

2.1 Translation Process

Translation has always been understood to refer to a written transfer of a message or meaning from one language to another. In transferring the message we can use substitution or implantation of SL meaning into TL text. These two processes must be clearly differentiated in any theory of translation. During the translation process, a translator seeks to establish equivalences between a source text and a target language. This process can be expressed as interpreting the meaning of the original text and re-encoding this meaning in the TL. To extract the meaning of a text, the translator needs first to recognize its component “translation units”, that is to say, the section of text to be processed as a cognitive unit. A translation unit could be a word, a phrase or even one or more sentences. Behind this evidently simple procedure there is a complex cognitive operation. To extract the complete meaning of the original text, the translator needs the equal in-depth knowledge to re-extract the meaning in the objective language. Mona Baker (1992) and Peter Newmark (1988) say that the notion of equivalence is problematic in the study of translation, and to overcome this problem, various translation strategies have been suggested by various authors within the field of translation. Although it is not easy to achieve exact textual equivalence, one
may hint that equivalence could be achieved when a translation contains the meaning that is similar, or as close as possible to that of the Source text. For this to happen, it is important for translators to have a thorough grasp of semantics, which is “the study of the meanings of words” (Walpole, 1941: 20).

### 2.2 Scientific Text

A scientific text, whether in source text or in translated text, is different from other texts because scientific text is factual and information-oriented. The language of a scientific text is clear, simple and unambiguous. According to Bell, scientific text is a text including all fields of science and technology (1989:204). Since science, especially natural science is objective in its approach, the language of a scientific text is also more objective and subjectivity of the author is kept out of it. It is different from literary texts, such as poetry, short story, novel, essay which is the personality of the author is reflected in his style of writing or it's called “the style of man”.

For example a plant-scientist in his effort to understand the structure of a flower disintegrates it into smaller units. In his descriptions of the structure of the flower he has to be specific and objective without any scope of deviation from facts. A litterateur, on the other hand, in his appreciation of
beauty personifies a flower and is always subjective in his descriptions. Therefore, the language of a scientific text, as opposed to the language of literary texts, is factual in its content. Every word is concrete and real. The style is not figurative and the language is semantically single layered and less ambiguous.

In term of language used, the language may vary according to the area under study. For example, the language of mathematics may differ from the language of physics. However, both are objective in their presentation of the subject. In other words, the language of scientific texts is more specific making the texts more clear and unambiguous as opposed to the literary text where language is often subjective.

2.3 The Importance of The Translation of Scientific Text

Nowadays, scientific translation is a requirement for the acquirement of technology, and which is more important, for installation, and operation. A good scientific translator must have the following skills: a full knowledge of the subject of the text to be translated, powerful imagination that facilitates the translator to visualize the equipment that will be explained and ability to choose the most appropriate equivalent term from the literature of the field or from glossaries.

Technical translation focuses on particular fields, subjects or professions. Subjects could include fields such as optics, science, hydraulics,
automotive, physics, avionics, medical and engineering. Technical translations need to be performed by translators specialized and experts in the specific field, this will help ensure a successful translation. Exceptional language and writing skills are required to enable the translator to transmit technical content in one language into another in a clear and precise manner.

It's essential that all the terminology is translated perfectly when translating technical documents. Being extreme, technical translation can literally be the distinction between life and death. For example: an electrical manual where the wires are connected incorrectly.

Scientific and technical translators are in immense demand, translators are extremely trained staffs who labor to discover opportunities for innovation in the marketplace and connect them with promising technologies in academic and research laboratories.

2.4 Translation Problems

Baker (1992: 21-25) lists eleven common translation problems usually faced by translator are;

1. Cultural-specific concepts

The source language word may express a concept which is totally unknown in the target culture. There are so many words used in some languages that are loan words. The words are commonly used but the concept itself could be abstract for the speakers. For example the word
*sungkeman* is widely used in Indonesian but the concept of *sungkeman* is unknown in west culture.

2. The source-language concept is not lexicalized in the target language.

There is source-language word that may express a concept which is known in target culture but has no exact equivalent in target language even though the concept of the word is easy to understand.

3. The source-language word is semantically complex

This is a fairly common problem in translation. Words do not have to be morphology complex to be semantically complex (Bolinger and Sears, 1968). Some single word/term in source language could be translated using more than one word in target language (paraphrasing). For example the English word *flambe* has no exact translation in Indonesian. It should be translated as *menggunakan minyak yang mudah terbakar untuk menyalakan api di atas makanan*.

4. The source and target language make different distinction in meaning

What one language regards as an important distinction in meaning another language may not perceive as relevant. In this case the writer should describe the concept of the text really clear so the translator would not have the confusion to choose the right equivalent. For example, the phrase
“going out in the rain” in English mean subject is going out in the rain with knowledge that it is raining. While in Indonesian going out in the rain will be understood as kehujanan which means rain suddenly pours down when the subject is going out.

5. The target-language lacks a superordinate

The target language may have specific words (hyponim) but no general words (superordinate). For this case a translator has to explain every specific words in target language that are related to the source text concept.

6. The target-language lacks a specific term (hyponym)

More commonly, languages tend to have general words (superordinates) but lack specific ones (hyponym). Text writer may use a specific term that has no exact equivalent in target language. For example the English word mansion is the hyponym of house or rumah in Indonesia. The word rumah has several hyponym but mansion is none of them. So it will be translated as “rumah yang besar dan mewah”.

7. Differences in physical or interpersonal perspective

Physical perspective may be of more importance in one language than it is in another. Physical perspective has to do with where things or people are in relation to one another or to a place. For example the English word
bring and take are translated using just one word in Indonesia, that is membawa. What would distinguish the different is the preposition and the conjugation that used before or after the word.

8. Difference in expressive meaning
There may be a target-language word which has the same propositional meaning as the source-language word but it may have a different expressive meaning. The difference may be considerable or it may be subtle but important enough to pose a translation problem in a given text.

9. Difference in form
There is often no equivalent in the target language for particular form in the source language text. Certain suffixes and prefixes which convey propositional and other types of meaning in English often have no direct equivalent in other languages. It is relatively easy to paraphrase proportional meaning of the text but other types of meaning cannot be spelt out in translation.

10. Difference in frequency and purpose of using specific forms
Even when a particular form does have a ready equivalent in the target language, there may be a difference in the frequency with which it is used or the purpose for which it is used.
11. The use of loan words in source text

The use of loan words in source text poses a special problem in translation. Once a word of expression is borrowed into language, we cannot predict or control its development or the additional meaning it might or might not take on.

2.5 Translation Strategy

There are so many translation strategies stated by the experts but translation strategies that will be used in this research paper are strategies used by professional translator by Mona Baker (1992:26-42). They are;

1. Translation by a more general word

   This is one of the most common strategies to deal with many types of nonequivalence. As Baker believes, it works appropriately in most, if not all, languages, because in the semantic field, meaning is not language dependent.

2. Translation by a more neutral/ less expressive word

   This is another strategy in the semantic field of structure.

3. Translation by cultural substitution

   This strategy involves replacing a culture-specific item or expression with
a target language item considering its impact on the target reader. This strategy makes the translated text more natural, more understandable and more familiar to the target reader.

The translator's decision to use this strategy will depend on:

1. The degree to which the translator is given license by those who commission the translation
2. The purpose of the translation
4. Translation using a loan word or loan word plus explanation
   This strategy is usually used in dealing with culture-specific items, modern concepts, and buzz words. Using the loan word with an explanation is very useful when a word is repeated several times in the text. At the first time the word is mentioned by the explanation and in the next times the word can be used by its own.
5. Translation by paraphrase using a related word
   This strategy is used when the source item in lexicalized in the target language but in a different form, and when the frequency with which a certain form is used in the source text is obviously higher than it would be natural in the target language.
6. Translation by paraphrase using unrelated words
   The paraphrase strategy can be used when the concept in the source item is not lexicalized in the target language.

When the meaning of the source item is complex in the target language,
the paraphrase strategy may be used instead of using related words; it may
be based on modifying a super-ordinate or simply on making clear the
meaning of the source item.

7. Translation by omission

This may be a drastic kind of strategy, but in fact it may be even useful to
omit translating a word or expression in some contexts. If the meaning
conveyed by a particular item or expression is not necessary to mention in
the understanding of the translation, translators use this strategy to avoid
lengthy explanations.

8. Translation by illustration

This strategy can be useful when the target equivalent item does not cover
some aspects of the source item and the equivalent item refers to a
physical entity which can be illustrated, particularly in order to avoid over-
explanation and to be concise and to the point.
2.6. Previous Study

The are many studies had been done on translation strategy. Some of them are:

1. The study of Third Years Student’s Difficulties in Translating Computing Terms from English to Arabic by Meriem Soualmia (2010). Meriem Soualmia also used informative text from science field as the research subject for her thesis. The writer found that the study by Meriem Soualmia has similar research question that is the question about problems or obstacles that the student face in translating scientific terms. What makes it different is while this study is focused on strategy used by students in translating medical terms, Meriem Soualmia’s study is focused on methods used by students in translating computing terms. Both studies have the same technique of data collection and the same method of data analysis. From her study, Meriem concluded that the methods students used in translating computing terms have influence in producing the adequate equivalents in target text. Another conclusion she made is the wrong translation was caused by their careless and the restricted background of the computing field and do not have a good mastery of two languages.

2. Another study of translation strategy is Strategies to Overcome Challenges in Technical Translation by Umit Tekir (2011). Umit Tekir did study on strategies used in translating technical scientific text of industry field. While the writer gave the participants a scientific text to translate, Umit Tekir did not use any
participants. He only provided some example of technical text to find the challenges and the strategies to overcome them. From his study, Umir Tekir concluded that technical translation is not just juxtapositioning of two languages or a mere linguistic transfer, but it is a very comprehensive process which needs the employment of the recent theoretical assumptions in translation studies and functionalist approaches along with a thorough examination of texts, terminology, background information and global conditions that create the demand for technical translation.