

## MACHINE TRANSLATION

The significant role that computer has played in promoting human's life and its vast use in the world of technology has brought the demand for developing computer systems that can translate texts from one language into another. This demand, a lofty and highly ideal as it is, has been considered by some laymen as an imaginary wish that can never come true. They have also argued that it is a luxury and, in most cases, inapplicable. Nevertheless, both the demand and the development of such machines to do the translating job are undeniable facts. Developments in the field, particularly those of the 1980s have been very encourage and close to the goal, but there still remain some deficiencies to be worked on. In other words, no computer or machine-aided program has been fully developed so far to carry out translations at the discourse level and to substitute human translators. Human translators still occupy a high position in the field of translation, and no one yet thinks that machines can substitute completely the complicated and sophisticated human brain.

In this chapter, attempts have been made to provide the readers with a comprehensive knowledge of the current intellectual activities in the area of machine translation. All major types of machine translation have been introduced, and briefly explained. Four different methodologies namely those of



the Europe, Japan, the USA and Canada have been introduced. This chapter will also contribute to illustrating the influence of linguistic theory on different approaches to machine translation.

### *3.1. HISTORY OF MACHINE TRANSLATION*

In early 1940s, a notion flourished bringing with it concepts assuming that, since humans could easily translate texts from one language into another, the automation of translation was also something easily achieved. This idea dominated the field of the theory of translation for more than twenty years. Researchers contributed to the field to a large extent. The assumptions were that, if programs were developed adequately, machines could at least help translators feel ease in their rendering of texts. In other words, the researchers believed that computer or machines could, for the time being carry out a bulk of tasks encumbered upon the translator. For instance, it could:

- a. expedite adequacy and efficiency in the field,
- b. be made adaptable to the human translator's trend of thought.
- c. look up words for the translator and save him a tremendous amount of time which otherwise had to be spent on vocabulary surveying and etymological discoveries.

(Nirenbury, 1987:1)

Early attempts were not fully satisfactory. Yet they contributed to linguistics and laid the foundations for the development of what is known



today as 'computational linguistics' and 'computer-aided computer-assisted language teaching and learning'.

Translation machine was invented by a British scholar named A. Donald Booth. It was a by-product of world war II to satisfy the great demand for more information and as a consequence of technological advancements. From the beginning, it faced many criticisms. Dr. Norbert Wiener of Massachusetts Institute of Technology questioned it by stating that it was not feasible for translating purposes. He argued that individual languages were heavily loaded with emotional and cultural incentives (Ronald, 1982:11) , and machines could never handle these discrepancies. Moreover, their productions had to be checked by human inspectors.

In 1933, P.P. Troyansky made attempts to mechanize translation but it was not successful.

In 1954, in New York Office of the International Business Machine Corporation, the first public demonstration was made of machine translation from Russian to English by means of that firm's Computer IBM-701 (Panov 1960).

In 1966, Text-related Glossary Computer was used to help trace target language glossaries that translators needed to translate texts. The procedure was as follows:

The translator would read the text to be translated and would underline the English words for which he desired to know the target language equivalent. Then, a key-punch



operator would punch the cards for the underlined words. The information on the cards would then be put into the computer, which could produce three to four text-related glossaries.

(National Academy of Science, 1966:26)

### 3.2 COMPUTER SYSTEMS

There are different types of computer systems and each can perform unique functions in addition to what the other systems can handle too. Generally speaking, computers can display a page of a text; they can ask questions, mark responses as wrong or correct, and store scores (in language learning and teaching). What a computer does is called 'instructional operation'. What a student, or an instructor, or a linguist does is called 'cognitive operation' (Hart 1986:4).

The followings are Computer Systems which are commonly used for teaching, learning and translation purposes. Of course, for each activity, a specific program must be designed.

#### 3.2.1 THE PLATO SYSTEM

The Plato System includes two major sections:

- a. an immovable 'Central Mainframe' in which lessons and programmes as well as the data concerning the performances are archived in a library;
- b. a number of movable or, in some cases, fixed terminal stations which are accessible to the students and