



In the initial phase of machine translation (MT) (1940s-1960s), MT was focusing on matching the words or phrases from the source language with the target language, and the researchers believed that adding more programs can erase the differences between grammatical systems. Thus, the MT was based on the “One-to-One Translate” method, where some hand-coded rules are programmed for translation specifically from one source language into another target language with a minimal amount of lexical and phrasal semantics analysis as well as syntactic reorganization. Although MT could be successfully applied to similar languages that share a large amount of vocabulary and grammar rules (such as Spanish and French), the failure in Russian-English translation and the ALPAC report still raised people’s awareness of the “One-to-One Translate” method, which was much more costly and unlikely to reach the quality of a human translator in the short run. Hence, new models of MT should be developed to overcome current limitations.

In the second stage of MT (1980s-1990s), due to the rapid development of computers, more complicated programs can be written, so that the traditional “One-to-One Translate” eventually became obsolete. Meanwhile, there is an emerging multitude of new methods based on more complex algorithms for machine translation. Due to the increase in computability, many believed that MT can be developed in the direction of artificial intelligence (AI), such as transforming itself from “One-to-One Translate” into processing text within the context. The perspective moved from the semantic level to the syntax level, while the analyses of the words rose from the lexical level to the context level. Still, due to the lack of computability, an accurate and precise translation can only be obtained by some researchers, and MT was not a widely available tool for most people.

And now, MT reached its third stage (2000s-present). The trend of statistical MT and example-based MT caught a lot of attention, in which the machine would gradually “learn” from the existing examples and translate the sentence according to what it had learned. With the development of personal computers, some companies would use the data sent by the users to train their machine for MT and give translations generated by the MT back to the users to improve the quality of translation. MT’s level of analyses rose from context to database, and therefore without too much reliance on the context, a machine would give an accurate translation if it had digested enough examples in a certain field.

To check the differences in accuracy and preciseness between human translation and MT, I would compare the MT result from Google Translate and the translation made by myself, here is my translation version:

我们的学术传统一直以来在英语语言的单卷式处理中有着优秀而杰出的路线。例如，在统一领域内，杰斯伯森(Jespersen)在 1905 年所著的此书之前就已经有亨利·布拉德利 (Henry Bradley)于 1904 年所著的《英语的诞生》(*Making of English*)，紧跟其后的是亨利·塞西尔·怀尔德 (Henry Cecil Wyld)于 1907 年所著的《英语的发展》(*Growth of English*)。此外，以后的几代语言学家都在相同的领域内贡献了自己的学术成果，其中一位已故的非英语母语“业余爱好者”，费尔南·莫塞 (Fernand Mossé)的作品，在深度和趣味性方面最接近杰斯伯森的作品，他在 1947 年完成了《英语语言史大纲》(*Esquisse d'une histoire de la langue anglaise*)。

每一本语言学图书都有属于它的时代，人们都会公平地审视这本书，并且这本书会在六年级中学



生以及本科学生的使用中接受试验。虽然书本常常更新换代，在这本书之后仍有不少类似的图书，但是这些书都需要让位给这本常常于推荐清单中保持吸引力的《英语的成长和结构》(*Growth and Structure of the English Language*)。这也是为什么我在这篇前言中需要解释的原因。

The following discussion on comparison will be based on semantic and syntax perspectives.

During the translation process, I did not focus on the meaning of certain words and phrases. Instead, I focused more on the meaning of a certain sentence and the structure of the sentence. For example, in the second paragraph, in Google's version, without much context, it simply took "each" in "each has had its day" as someone, so that the translation of the following sentence became human-subjected and it is incorrect. According to the whole context, the material serves as an introduction to a book, and thus the missing subject should be translated into "每本书". Besides, in the first paragraph, Google directly translated the phrase "great little book" into "伟大的小书", which is confusing and misleading. Since Jespersen is the author of *Growth and Structure of the English Language*, and the material ought to be the foreword of Jespersen's work, the phrase could be translated into "作品" or "此书" for better understanding.

As for the order of words and clauses, I prefer to rearrange the translation to fit native Chinese expressions. Take the second sentence in the first paragraph as an example. Google kept the long attributive clauses in the translation "例如，杰斯伯森 1905 年的伟大小书在 1904 年之前是亨利·布拉德利的英语的诞生，随后是 1907 年亨利·塞西尔·怀尔德的《英语的发展》", which made the subject of the sentence redundant and confusing. Moreover, without correct context, the metaphor of the sentence "And succeeding generations of philologists have contributed their own distillations in similar-sized vessels down the years" was obviously misunderstood. Google took the sentence as a physical phenomenon, but the sentence refers to the phenomenon that some authors work in the same field.

Based on the analyses and discussion above, the MT still has a long way to go. It still remains a challenging problem on how to make MT think as humans do. Although the translation might get better after being trained by some databases, the MT still makes several mistakes in the actual performance.