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— Necessity of Interlingua for Multilingual Translation —

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There are two major reason for developing machine translation systems. Needless to say, the first is to improve the efficiency of translation. However, perfect automatic translation can not be expected with current technology. There are more problems concerning processing speed of the hardware than software problems. That is, the current hardware speed is insufficient for the amount of information needed to be processed. Therefore, for the time being, we have to promote the systematization of machine translation, and consider post-editing as a part of the system, while continuing efforts to improve the accuracy of translation. Although research on post-editing technology is very important, we believe that higher priority should be given to research on processing which makes post-editing easier, rather than research on processing which is aimed at improving the total accuracy of translation.

The second reason for developing machine translation system is to translate those languages which have few translators. Since a language represents a certain culture, translation helps promote cultural understanding. It is regrettable that language or a culture cannot be introduced to other people due to a lack of translators. Machine translation systems should be employed for translating such languages. From this point of view, machine translation systems with the interlingua approach are the best for this purpose.

There are two major merits of the interlingua approach in developing machine translation systems. The first is that the interlingua approach can localize the development of machine translation system. It is impossible to develop a machine translation system for a language by collecting people who have no knowledge of the language. The rules to analyze and generate a language and the dictionaries must be developed by trained native speakers of the language. The interlingua interface completely separates analysis and generation, enabling the development of analysis and generation systems for one language to proceed independently from those of other languages. Developers of these systems need only know the interlingua and the language being analyzed or generated. Therefore, when we want to develop the machine translation system for a particular language, we can easily assemble enough people to develop highly precise analysis and generation rules and dictionaries.

The second merit of the interlingua is the common use of knowledge for machine translation. World knowledge is needed in semantic analysis, which is essential for high quality machine translation. Knowledge described in interlingua may be used by the analysis systems for each language. Thus, we reduce the development cost for world knowledge.