Experimental On-line Computer Aids for the Human Translator

Experimental computer aids for the human translator are being developed which basically consist of storage, retrieval, editing and formatting operations carried out on line with a computer by an experienced human translator during the time in which a translation is produced. The system is not programmed to simulate the human translator by producing automatic translations. Rather, the user can call upon the computer's resources as needed in the translation process to shorten the delay between the initiation of a translation and production of a finished version. A combination of display terminals, computer hardware, and software is used to perform functions which have habitual human counterparts of a mechanical nature, e.g., dictionary look-up, dictionary updating, creating of text-related glossaries, editing and layout, collection of text statistics, combination, insertion, and deletion of text. An essential aspect of this system of computer aids is that, while assuming the burden of much of the mechanical drudgery associated with production of a translation, it leaves to the translator those tasks whose successful completion is most heavily dependent on characteristics that are uniquely human, in particular, the ability to produce grammatical output in which appropriate target translations have been selected on the basis of understanding of text content rather than through heuristics or brute force.

The system is designed to make it maximally simple for inexperienced computer users such as translators, terminologists, lexicographers, editors, and typists to work in an on-line environment. The translation aids are

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implemented as modules which are compatible with existing text processing systems. As such they can either be integrated into such systems or isolated and put to other language processing uses with minimal modification.

The goal of the experimental computer-aided translation system is to streamline the entire translation production process from the reception of a source text to the printing of the finished version of the translation, thereby significantly increasing the productivity of the translator. In this connection, the user can perform the following tasks on line:

1) Enter and/or edit a text, e.g., a translation or a dictionary.

2) Look up dictionary entries and browse through dictionaries and other reference files.

3) Update dictionaries or other text files.

4) Print text in formatted or unformatted layout.

5) Obtain text-related glossaries in textual word order or alphabetically sorted.

6) Obtain statistical information and concordances on translations and/or (machine-readable) source langauge texts.

7) Delete, merge, and duplicate text files or text portions.

8) Permit other users to share texts and dictionaries on-line and/or off-line.

9) Obtain instructions on how to use the system.

Expected advantages include:

(a) increased productivity through accelerated dictionary and terminology lookup, rapid and convenient revision of successive translation drafts, and high-speed layout and printing of translations;

(b) easily activated production of text-related glossaries, which can be saved for future work;

(c) maintenance of consistency in terminology through immediate accessibility of standardized terminological digests;

(d) easily activated automatic insertion of previously-translated text portions and boiler-plate information;

(e) reduced handling and consumption of paper through emphasis on the use of visual displays rather than printed output during all but the final processing phase.

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Erhard O. Lippmann received the B.B.A. degree from the Free University of Berlin, Berlin, Germany, in 1956, and the M.A. degree in economics from the University of Michigan, Ann Arbor, in 1958.

After joining IBM World Trade Corporation in 1959, he was engaged in the conversion of manual business systems to automated data processing operations. At various times during his work in systems engineering, he was responsible for the translation of company product literature into the German language, and for the design, programming, and testing of software for automatic processing of textual material. Currently at IBM Thomas J. Watson Research Center, Yorktown Heights, N. Y., he is concentrating his efforts on the development of terminal-oriented programs specifically for non-numerical information processing. He has taught information processing at universities in the U. S. and Europe, most recently as a visiting professor at the University of Exeter, England, in 1972/1973. Since 1974, he has been serving as Chairman of the Committee on Computer-assisted Translation of the American Translators Association.