UN Translators in the 1990s and beyond: A new profile*

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The technological revolution is affecting our lives in many respects. The traditional concept of translation is changing rapidly in order to keep pace with the new dimensions of advanced and sophisticated communication devices. Computerisation and knowledge engineering are gaining momentum. The standardisation and rapid dissemination of terminology are becoming increasingly an imperative scheme for the modern world. Frontiers between translation, terminology and specialisation are loosening, as the ideal translator is terminology-oriented and able to comprehend the smallest details of the subject. The machine may help enormously in this tremendous endeavour, as it would facilitate a useful combination, otherwise normally arduous, time-consuming and in some cases unattainable. How far away is this goal?

Mechanisation: The state of the art

The idea of mechanised dictionaries dates back to the 17th century as man started to uncover secrets of mechanical motion. The first among such dictionaries were published by *Cave Beck* (1597), *Anasthasius Kircher* (1663) and *John Joachim Becher* (1661).

John Wilkins went even further as he made a "genuine attempt at a universal language in that it sought to provide a logical and rational basis for the establishment of inter-language equivalencies." (1668)

These works were precursors to contemporary theories and achievements.

Thus, in 1933, *Petr Petrovitch Smirnov-Troyanskii* was delivered a patent in Moscow, authorising him to construct "a machine for the selection and printing of words while translating from one language into another or into several others simultaneously" (Panov 1960). This machine became operational in 1941. Shortly afterwards Harvard's MARK I was devised.

In 1952, a first conference was held on machine translation (MT). It was sponsored by the Rockefeller Foundation. A few years later, in October 1956, the first international gathering on this same subject took place. Since then, many conferences were held.

The following countries were engaged in MT research and development: China, the Federal Republic of Germany, France, Japan, Mexico, the Soviet Union and other East European countries, the United Kingdom and the United States. Some research work was undertaken in India and South America, while countries in the Middle East and in the Arab World at large are nowadays showing interest in this pursuit. Moreover, the Arab Information Network (ARIS-NET) is issuing periodically a Newsletter. This is an indication that the Arab countries have entered the age of informatics. In this context, mention should be made of ArabTerm (Arab Information Network for Terminology) which was established during the Conference on Terminology Standardisation and Unification in Theory and Practice, (13-17 March 1989, Tunis) and of LEXAR System (La Base de Donnée Euro-Arabe LEXAR) of the Institut d'Etudes et de Recherches pour l'Arabisation (Rabat, Morocco). This system should be more accessible to specialists.

The Bar-Hillel report on MT in the US and UK, submitted in 1959, was a kind of watershed. Its author criticised MT and doubted its efficiency. This was corroborated by the report of the Automatic Language Processing Advisory Committee (ALPAC) set up by the National Academy of Sciences in April 1964 to reconsider the matter. This committee concluded that "the emphasis should be on speed, quality, and economy in supplying such translations as requested." It was deemed that machine aided translation (MAT) was more feasible; ALPAC was especially impressed by the German Army's Translation Service text-related glossaries (LEXIS).

Research continued in the aftermath of the ALPAC report, notably in France, Germany and Italy, but it took a new and more pragmatic orientation: utilising new technological innovations to assist translators, while actively involving them in the mechanical translation process. Computerised terminology is starting to play a cardinal role, as it is an essential translation ingredient.

Terminology is an integral part of translation activity in the multilingual sphere.

Search for a system

After a period of relative uncertainty, scholars and researchers were able to develop a set of machines for direct or indirect translation, which can be roughly categorised as follows:

1. *Direct translation systems*

It is now obvious that direct translation is of low quality, not up to the standards and requirements of human translation. This kind of translation helps decision-makers form an approximate idea on the material of particular interest to be translated among a plethora of published and available articles and documents. It serves also as a communication avenue for scientists and experts in highly technical and specialised fields, as the background texts have no individuality, unlike literary or poetic renderings where the personal trait is quite discernible.

Among the systems: Systran, LOGOS, ENSPAN and SPANAM (of the Pan American Health Organisation (PAHO)), BABEL and Xonics. Those systems, though technically advanced lack linguistic support.

2. *Interlingual systems*

These systems draw upon current linguistic theories. They include: CETA (*Centre d'Etudes pour la Traduction Automatique*, Grenoble/Paris), METAL (Mechanical Translation and Analysis of Languages, University of Texas), LIMAS (*Linguistik und Machinelle Sprachverarbeitung*, Bonn), SALAT (System for Automatic Language Analysis and Translation, University of Heidelberg) and "Rosetta" at Philips Research Laboratories, Eindhoven.

3. *Interactive and human-aided systems*

Such systems were triggered by the conclusions contained in the ALPAC report questioning the quality of full automation. Some of them, such as the METEO System, are restricted and *ad hoc*, as they concentrate on specific subjects. They include SMART (of Smart Company), TITRAN (Kyoto University), MIND (Management of

Information through Natural Discourse, Los Angeles), CULT (Chinese University Language Translator, Hong Kong), ALPS (Automated Language Processing System), MicroCAT (Weidner Communications Corporation) and TITUS, introduced by the Institut Textile de France.

Other terminology-related systems, such as EURODICAUTOM (Brussels), LEXIS (Bundessprachenamt, Bonn), TERMIUM (Montreal), and TEAM (Siemens), may be counted among those systems, since these interact with the translator.

4. *Transfer systems*

These systems reproduce the Source Language (SL) representations to dispel syntactic and lexical ambiguities without "providing unique representations for synonymous constructions and expressions" (Hutchins 1986). Among them are GETA (Groupe d'Etudes pour la Traduction Automatique, Grenoble), SUSY (Saarbrücker Übersetzungsystem), EUROTRA (European Communities), POLA (Project on Linguistic Analysis, Berkeley, California).

5. *Semantic-based systems*

These are based on semantics and on artificial intelligence (AI) methods and techniques. They include TRANSLATOR (Colgate University) and LUTE (Language Understander, Translator and Editor of the Nippon Telegraph and Telephone Corporation). The understanding of the subject plays an important part in such systems.

6. *Terminology data banks*

Terminology has become a major component in the communication process, especially in the realm of science and technology, both in single languages, and as a significant constituent of translators' work. As a consequence, the terminology industry is blossoming in different regions of the world, and terminology data banks are continuously established, even at the level of translation institutes, as students are required to feed them gradually.

The computer is invading this area also. This is a gratifying development,

as it will promote the undertaking of research and compilation efforts, as well as advance the progress of standardisation and unification.

However, the "sharing of lexical terms is essential to communications" (Melby 1988), especially now that many freelance translators have acquired micro-computers, and it may help them greatly to share information, particularly when they have to translate texts on similar subjects.

The question of system compatibility has led ISO (International Standardisation Organisation) Technical Committee TC37 to define a "Magnetic Tape Exchange Format for Terminological/Lexicographical Records", ISO Standard 6156 (MATER Standard), for the transfer of information between different systems, while avoiding "the proliferation of conversion systems". (Melby 1988) For personal micro-computers a microMATER has been conceived.

The translator as a user

Translators have gained confidence in the machine. It is no longer viewed as a rival, but rather as an instrumental supplement, assisting in speed, productivity and even word-counting for commercial purposes.

Translators can benefit from technological advances in telecommunication by using modem-to-modem transmission ASCII code, or MCI Mail, etc. Translators at the International level are bound to follow these steps. Some apprehensions and suggestions are to be found in Datta (1986; 1988).

The United Nations and the electronic revolution

1. *New outlook*

The electronic revolution our world is witnessing is far from being unnoticed in the UN System. As a matter of fact, the use of Wang word processing is quasi-generalised, especially in typing pools (this applies to all languages, including Arabic and Chinese).

Terminology activity is being computerised and even MT and MAT are being considered seriously.

In 1986, a Working Group on Technological Innovations in the Field of Translation was established by the Director of the Translation Division (New York). The Working Group noted in 1988 that "the translation process in the UN had been largely unaffected by technological innovations" and that "recent technological innovations of interest to translators and the forseeable trends in the development of computer applications made it possible to draw up specific proposals for the near future and plans for the medium term".

Regarding MT and MAT, it should be noted that the International Civil Aviation Organisation (ICAO) is using Xerox 6085, and it is able to produce quadrilingual terminology bulletins (English, French, Russian and Spanish).

The Xerox company intends to introduce Arabic and Chinese among its programmes. Translators can use a Honeywell DPS7. Arabic translators have a CPT at their disposal and Russian translators a Wang. The International Monetary Fund is using ALPS MAT System, a CPT central server, MINIMIS System and has access to SYSTRAN MT System. At the UN Headquarters the Working Group continues "to monitor development in regard to MT/MAT Systems and would be testing the TOVNA System", which has been developed by the TOVNA corporation in Israel, in the following linguistic combinations: English/French, French/English, English/Russian, Russian/English. Arabic and Spanish modules are being developed. Translators would be able to "'teach' the machine new translations of words, expressions, phrases and constructions".

Two important meetings are held periodically within the UN System: The Inter-Agency Meeting on Language Arrangements, Documentation and Publication (IAMLADP). Its next meeting is due to be held in Rome in 1990 and the Joint Inter-Agency Meeting on Computer-Assisted Terminology and Translation (JIAMCATT).

UNIDO is introducing office automation and new PCs are due to be installed for translators' use.

2. Prospects

Machine-Aided Translation (MAT) has made considerable progress, and a combined machine is expected to be invented along the lines determined by A. Melby based on a three level approach:

1. A word processor with optional access to bilingual dictionary or multilingual data bank.
2. Automatic searching of term files and display of possible SL texts and automatic amendment and on-line editing of TL texts.
3. A full MT text which could be given to translators and may be accepted, revised or rejected by them as appropriate."

This machine should be cost-effective and should reflect the close link between translation and terminology, or in other words between translators and terminologists and the overlapping of the two disciplines.

The SUSANNAH (SUSY AN wender NAH, or SUSY user-oriented) project is in the pipeline and the realisation of such a wonderful machine is now a realistic aspiration.

Efforts made in the domain of knowledge engineering will certainly be beneficial. An Association for Terminology and Knowledge Transfer has been established at Trier University, in the Federal Republic of Germany. A congress on the topic is scheduled for 2-4 October 1990, in Trier (see Calendar, this issue). Furthermore, a computerised encyclopaedia would be welcome.

"It is reasonable to predict that in another twenty years MT and/or MAT in various forms and packages will be normal and accepted facilities in nearly every office and laboratory." (Hutchins 1988)

The translator of the future should be computer-literate, terminology-oriented and capable at least of really specialising in the translation of subjects, if not in the subject itself. Knowledge transfer is intimately related to translation.

Training courses should be organised for translators on computer utilisation and on terminology, tailored to their needs.

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