The Problem with Machine Translation

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Recent studies and reports have shown that Machine Translation (MT) is about to by-pass the translation profession. In this article we will argue that this development is due to the translation profession's inability to resolve the tension between its traditional professional values and reference system, and the new objectives of translation technology. We hold that a change in the translator's professional mind-set has become necessary if translators do not want to exclude themselves from some of the most interesting and lucrative areas of translation activity, and suggest that this can be achieved through: the integration of translation technology at all levels of translation studies courses; the establishment of Translation Technology Centres; and the provision of better financial and political support for joint industrial and academic research projects at national and European level.

As with any other software product, there are many problems associated with Machine Translation (MT) systems. Few software products, however, have been so harshly judged by their potential users as MT systems have been. Translators widely agree that "Machine Translation does not work". They maintain that translations produced by currently available commercial MT systems are generally of unacceptable quality. They consider that the time and the costs involved to improve this quality to a level where publication could even be considered make it redundant and are convinced that they, the human translators, produce better quality translation at the same speed as MT systems and at a lower overall cost.

Translation as an essentially human activity

Over the last few decades translation theory has been introduced at polytechnics and universities around Europe. This discipline deals with the body of knowledge we have on translating and sets out to provide translators with a frame of reference for translation and translation criticism. One of its aims is to identify and define a translation problem, to indicate all the factors to be taken into account when searching for a solution, to list possible translation procedures, and, finally, to recommend the most suitable one together with the appropriate translation. The theory claims to be based firmly on problems arising in translation practice, mainly the problems of naturalness both grammatical and lexical) and the

relationship between language and reality.

One of the most widely recommended textbooks in the English-speaking world on translation theory is Peter Newmark's *A Textbook on Translation.* Newmark' s book appears on the reading list of many courses for professional translators and contains a very well structured, comprehensive and widely accepted coverage of the most important issues in translation.

In his summary, Newmark (1988:224-225) gives six reasons why translating can be so enjoyable and satisfying:

1. Translators are explaining something, pursuing the subtleties of ideas.
2. Translation is a continual chase after words and facts with success depending entirely on the translator (though the element of luck is important) and rewarded by the joy of finally finding a word in a book after hours of searching on the shelves and in one's mind.
3. It is never-ending, because a translation can always be improved, because it gives a tactile feeling and relishing for words as well as the rhythms of sentences read aloud to oneself.
4. The challenge, the wager, the isolation - often translators write on behalf of an author they do not know to readers they never meet.
5. The joy of the find, the happy concise stretch of language, when translators feel they have written just what the author wanted to but did not.
6. Because of the sense, when translators are translating some novel or biography, that they are identifying not only with the author but with the main character, and incidentally with someone dear to them who appears to embody them.

Newmark undoubtedly has captured the essence of what translation means to many translators who see their work as a creative activity providing great intellectual satisfaction. For many professional translators, translation is just another stage of writing, taking a step beyond, adding a vital new dimension to the original.

This approach is echoed in conference papers and discussions among translators, who regularly debate with great passion issues like whether translation is a process that should transform the alien into the familiar and mould the original to fit a comfortable cultural framework or whether it should do the opposite: acknowledge the foreignness or alien quality of the original in the translation. One of the best known Irish translators, Gabriel Rosenstock, who has translated the Irish poet Seamus Heaney into Irish, compares the art of translation to a blood transfusion between friends.

It is obvious that translators who have been educated and trained following a syllabus such as that proposed by Newmark and who have consequently acquired an enormous sense of responsibility to care for

their language and a pride in their work cannot and should not be down-graded to MT operators. Translators do not like subservience to a machine, they do not want to revise the poor quality output of MT systems (Hutchins 1995).

However, even translators have to earn a living and will eventually have to adjust to the fact that MT has become a reality in many commercial environments. SAP, Europe's biggest software developer, for example, has a staff of 8 full-time employees in its MT Service Group with a turn-over of 500,000 words per month. They report high-quality, high-speed translations with an excellent profitability rate (Grasmick 1995). Other companies, especially those involved in the localization of software like Lotus Development, Oracle and Corel, have only recently become MT users or are actively considering the introduction of MT systems.

Given its traditional values and reference system, the translation profession is currently not in a position to cope with the requirements and new objectives of translation technology.

Translation without translators

Recent studies and reports have shown that - because of the introduction of MT - translation is no longer the exclusive domain of translators and non-translators are the biggest users of MT systems.

The European Commission is one of the biggest MT users in Europe. Their MT system, Systran, is available via an internal electronic mail network to all Commission officials. A recent in-depth study of the Commision's use of MT revealed some remarkable figures (Senez 1995):

- Between 1988 and 1994 there was a 35-fold increase in the use of Systran (from 4,000 pages to 140,000 pages)
- MT is being used by about 2,500 staff (30% of those are 'regular' users, i.e. they use the system at least 5 times a month)
- 20% of the users are in the Translation Service, 80% in other Commission departments, i.e. the majority of users are non-linguist staff who avail of machine translation when the need arises.

Another indication of the appeal of MT to non-translators is Compu-Serve's use of the Intergraph MT system in its World Community Forum, which attracted some 15,000 subscribers in less than three months of operation (Brace et al 1995).

Furthermore 'toy' MT systems, i.e. systems not intended for professional translators, are phenomenally successful while systems designed for professional translation struggle for survival. The latter are mainly installed in translation companies staffed by professional translators who - because of their educational background and professional experience -

are generally reluctant to work with MT and to take on the new role of MT coder, pre-editor or post-editor. On the other hand, MT systems like the PC-based Power Translator and Translation Assistant series, considered for a long time to be for the home user only and not suitable for business applications, have been released as new Windows product lines with all the characteristics of the 'mature' systems (Brace et al 1995). By the end of 1994 they had sold more than 400,000 units - a figure 1,000 times higher than that predicted by an OVUM report in 1991. The exact number of 'high-end' installations like Systran, Metal and Logos is not known, but it is currently estimated to be about 4,000 times lower than the number of 'toy' units quoted above and such high-end systems have a very low number of active and regular users. Few high-end MT users use systems to their full capacity in an attempt to improve the quality of MT output. This is especially true when companies have to deal with short turn-around cycles and frequent updates of technical texts, and when accuracy and consistency of the translation (features associated with MT output) take precedence over style, readability and naturalness, all associated with the traditional values and reference system of human translators (Tools Group Papers forthcoming).

Long-standing industrial users of MT say they will not hire translators for their MT departments and advise MT novices to follow suit. One of the most experienced users of MT, the National Air Intelligence Center (NAIC) in the United States of America, who recently celebrated over 30 years of operational use of MT, does not hire translators but computer scientists, post-editors and language specialists (Bostad, personal communication 1995). According to the Center most translators actually spend more time trying to prove that the MT system 'does not work' than trying to 'co-operate' with the system in order to produce acceptable output. The NAIC thus prefers to employ linguistically less qualified staff as pre- and post-editors, e.g. subject specialists with a knowledge of the source language, in order to ensure the smooth and cost-effective operation of their MT installation.

No reliable figures could be obtained to size the world market for translation, but it is estimated that around 250 million pages of technical and commercial text alone are being translated every year. Although MT is currently only used to translate a fraction of this, around 1.2 million pages per year (Vasconcellos 1995), the potential for MT is obvious. Many Irish based companies involved in software localization, for example, are currently installing MT systems and it is expected that this trend will continue.

Building bridges: Machine Translation with translators

The problem with Machine Translation - from the translator's point of

view - is not that 'MT does not work', i.e. that an enormous amount of work still has to be done to improve commercially available MT systems. This is the problem of MT developers. Nor is it simply a problem of translators having the wrong attitude towards MT, as some 'experts' suggest. We also oppose the view that translators are basically a hindrance to the successful running of an MT operation.

However, it is evident that the translation profession has to resolve the tension between its traditional professional value system and the new technologies if it wants to participate in some of the most interesting and lucrative areas of translation activity. This requires radical changes in the translator's professional mind-set, a process which has to be supported by clear and decisive measures.

The teaching of translation technology has to be integrated into all levels of translation studies courses. At the end of their professional education, translators must be aware of the wide variety of translation tools available, including MT, and have had some exposure to a representative selection of these tools. They should be able to specify requirements for MT systems, and to draw-up criteria for the evaluation of these systems. In addition, they should have learned about the financial and operational implications of the introduction and use of MT and other translation tools in a traditional translation environment.

Translation Technology Centres should be established, in order to make state-of-the-art translation tools more accessible. Initiatives like the establishment of the **Localisation Tools Library** at the recently launched **Localisation Resources Centre** in Dublin are a step in the right direction; the high level of support they have received from industry and the translation profession is an indication of how much such initiatives are needed.

Better financial and political support at national and international level has to be provided to encourage more joint industrial and academic research projects in very practical areas like the evaluation of MT systems. Such evaluations should be based on properly researched user requirements rather than on academically inspired theoretical foundations. Projects like the **Evaluator's Workbench,** proposed to the European Commission under the 4th Framework Programme, are a good example of pan-European co-operation between industry and researchers in this area.

Conclusion

Translation and machines are *not* mutually exclusive. But more than one bridge remains to be built to span the gulf between language engineers and translators. We must ensure that all aspects of translation activity remain under the control of the translation professional and are not taken

over by highly qualified engineers with no feel for and no knowledge of the *human* element in natural language. Translation, even Machine Translation, is not possible without translators. But it is incumbent upon translators to broaden their concept of translation and to ensure that their skills are recognized as fundamental to all types of translation activity.

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